

OptiChill™ FreeCool



Technical Manual

About Airedale Products & Customer Services

Warranty, Commissioning & Maintenance

As standard, Airedale guarantees all non consumable **parts only** for a period of **12 months**, variations tailored to suit product and application are also available; please contact Airedale for full terms and conditions.

To further protect your investment in Airedale products, Airedale can provide full commissioning services, comprehensive maintenance packages and service cover 24 hours a day, 365 days a year (UK mainland). For a free quotation contact Airedale or your local Sales Engineer.

All Airedale products are designed in accordance with EU Directives regarding prevention of build up of water, associated with the risk of contaminants such as Legionella.

For effective prevention of such risk it is necessary that the equipment is maintained in accordance with Airedale recommendations.

CAUTION



Warranty cover is not a substitute for maintenance. Warranty cover is conditional to maintenance being carried out in accordance with the recommendations provided during the warranty period. Failure to have the maintenance procedures carried out will invalidate the warranty and any liabilities by Airedale International Air Conditioning Ltd.

Spares

A spares list for 1, 3 and 5 years will be supplied with every unit and is also available from our Spares department on request.

Training

As well as our comprehensive range of products, Airedale offers a modular range of Refrigeration and Air Conditioning Training courses, for further information please contact Airedale.

Customer Services

For further assistance, please e-mail: enquiries@airedale.com or telephone:

UK Sales Enquiries	+ 44 (0) 113 239 1000	enquiries@airedale.com
International Enquiries	+ 44 (0) 113 239 1000	enquiries@airedale.com
Spares Hot Line	+ 44 (0) 113 238 7878	spares@airedale.com
Airedale Service	+ 44 (0) 113 239 1000	service@airedale.com
Technical Support	+ 44 (0) 113 239 1000	tech.support@airedale.com
Training Enquiries	+ 44 (0) 113 239 1000	marketing@airedale.com

For information, visit us at our Web Site: www.airedale.com

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Warranty

Warranty

All AIAC products or parts (non consumable) supplied for installation within the UK mainland and commissioned by an AIAC engineer, carry a full Parts & Labour warranty for a period of 12 months from the date of commissioning or 18 months from the date of despatch, whichever is the sooner.

Parts or Equipment supplied by AIAC for installation within the UK or for Export that are properly commissioned in accordance with AIAC standards and specification, not commissioned by an AIAC engineer; carry a 12 month warranty on non consumable Parts only from the date of commissioning or 18 months from the date of despatch, whichever is the sooner.

Parts or equipment installed or commissioned not to acceptable AIAC standards or specification invalidate all warranty.

Warranty is only valid in the event that

In the period between delivery and commissioning the equipment: is properly protected & serviced as per the AIAC installation & maintenance manual provided where applicable the glycol content is maintained to the correct level.

In the event of a problem being reported and once warranty is confirmed as valid under the given installation and operating conditions, the Company will provide the appropriate warranty coverage (as detailed above) attributable to the rectification of any affected Airedale equipment supplied (excluding costs for any specialist access or lifting equipment that must be ordered by the customer).

Any spare part supplied by Airedale under warranty shall be warranted for the unexpired period of the warranty or 3 months from delivery, whichever period is the longer.

To be read in conjunction with the Airedale Conditions of Sale - Warranty and Warranty Procedure, available upon request.

Procedure

When a component part fails, a replacement part should be obtained through our Spares department. If the part is considered to be under warranty, the following details are required to process this requirement.

Full description of part required, including Airedale's part number, if known

The original equipment serial number

An appropriate purchase order number

A spares order will be raised under our warranty system and the replacement part will be despatched, usually within 24 hours should they be in stock.

When replaced, the faulty part must be returned to Airedale with a suitably completed and securely attached "Faulty Component Return" (FCR) tag. FCR tags are available from Airedale and supplied with each Warranty order.

On receipt of the faulty part, suitably tagged, Airedale will pass to its Warranty department, where it will be fully inspected and tested in order to identify the reason for failure, identifying at the same time whether warranty is justified or not.

On completion of the investigation of the returned part, a full "Report on Goods Returned" will be issued. On occasion the release of this complete report may be delayed as component manufacturers become involved in the investigation.

When warranty is allowed, a credit against the Warranty invoice will be raised. Should warranty be refused the warranty invoice becomes payable on normal terms.

Exclusions

Warranty may be refused for the following reasons:

- Misapplication of product or component
- Incorrect site installation
- Incomplete commissioning documentation
- Inadequate site installation
- Inadequate site maintenance
- Damage caused by mishandling
- Replaced part being returned damaged without explanation
- Unnecessary delays incurred in return of defective component

Returns analysis

All faulty components returned under warranty are analysed on a monthly basis as a means of verifying component and product reliability as well as supplier performance. It is important that all component failures are reported correctly.

Health and Safety

IMPORTANT

The information contained in this manual is critical to the correct operation and maintenance of the unit and should be read by all persons responsible for the installation, commissioning and maintenance of this Airedale unit.

Safety

The equipment has been designed and manufactured to meet international safety standards but, like any mechanical/electrical equipment, care must be taken if you are to obtain the best results.

CAUTION



1 Installation, service and maintenance of Airedale equipment should only be carried out by technically trained competent personnel.

CAUTION



2 When working with any air conditioning units ensure that the electrical isolator is switched off prior to servicing or repair work and that there is no power to any part of the equipment.

3 Also ensure that there are no other power feeds to the unit such as fire alarm circuits, BMS circuits etc.

4 Electrical installation commissioning and maintenance work on this equipment should be undertaken by competent and trained personnel in accordance with local relevant standards and codes of practice.

5 The refrigerant used in this range of products is classified under the COSHH regulations as an irritant, with set Workplace Exposure Levels (WEL) for consideration if this plant is installed in confined or poorly ventilated areas.

6 A full hazard data sheet in accordance with COSHH regulations is available should this be required.

Protective Personal Equipment

Airedale recommends that personal protective equipment is used whilst installing, maintaining and commissioning equipment.

Refrigerant Warning

The Airedale OptiChill Freecool uses R134a refrigerant which requires careful attention to proper storage and handling procedures.

Use only manifold gauge sets designed for use with R134a refrigerant. Use only refrigerant recovery units and cylinders designed for R134a refrigerant.

R134a must only be charged in the liquid state to ensure correct blend makeup.

The refrigerant must be stored in a clean, dry area away from sunlight. The refrigerant must never be stored above 50°C.

Manual Handling

Some operations when servicing or maintaining the unit may require additional assistance with regard to manual handling. This requirement is down to the discretion of the engineer. Remember do not perform a lift that exceeds your ability.

Environmental Considerations

Freeze Protection

Airedale recommends the following actions to help protect the unit during low flow and low ambient temperature operation.

Units with supply water temperatures below +5°C

- Glycol is recommended when a supply water temperature of +5°C or below is required or when static water can be exposed to freezing temperatures.

Units subjected to ambient temperatures lower than 0°C

- Glycol of an appropriate concentration ⁽¹⁾ is used within the system to ensure adequate protection. Please ensure that the concentration is capable of protection at least 3°K lower than the minimum ambient.
- Water / glycol solution is constantly circulated through all waterside pipework and coils to avoid static water from freezing.
- Ensure that pumps are started and running even during shut down periods, when the ambient is within 3°K of the solution freeze point ⁽¹⁾ (i.e. if the solution freezes at 0°C, the pump must be operating at 3°C ambient).
- Additional trace heating is provided for interconnecting pipework.

⁽¹⁾ Refer to your glycol supplier for details

Environmental Policy

It is our policy to:

- Take a proactive approach to resolve environmental issues and ensure compliance with regulatory requirements.
- Train personnel in sound environmental practices.
- Pursue opportunities to conserve resources, prevent pollution and eliminate waste.
- Manufacture products in a responsible manner with minimum impact on the environment.
- Reduce our use of chemicals and minimise their release to the environment.
- Measure, control and verify environmental performance through internal and external audits.
- Continually improve our environmental performance.

CE Directive



Airedale certify that the equipment detailed in this manual conforms with the following EC Directives:

Electromagnetic Compatibility Directive (EMC)	2014/30/EU
Low Voltage Directive (LVD)	2014/35/EU
Machinery Directive (MD)	89/392/EEC version 2006/42/EC
Pressure Equipment Directive (PED)	97/23/EC
	Article 13 of 2014/68/EU

To comply with these directives appropriate national & harmonised standards have been applied. These are listed on the Declaration of Conformity, supplied with each product.

Maximum and Minimum Operation Temperature (TS) and Pressure (PS)
 Operating Temperature (TS), TS = Min -20°C to Max 120°C *
 Maximum Operating Pressure (PS) PS = High Side 20.1 Barg

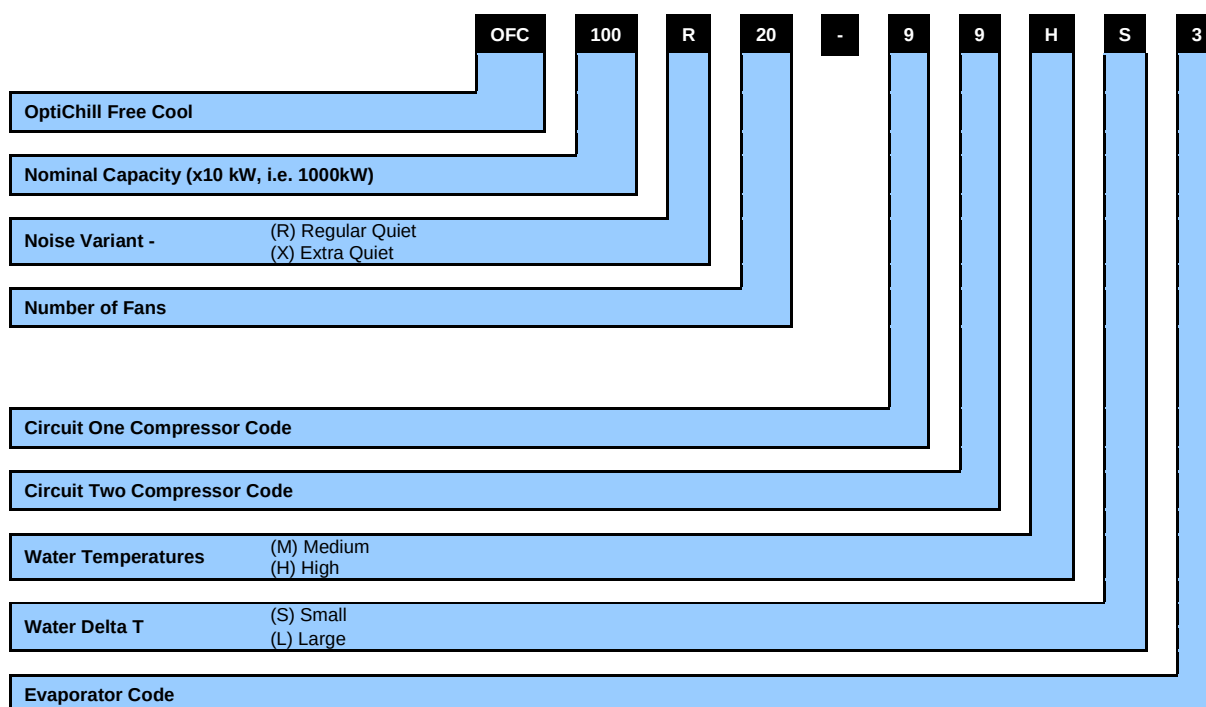
*Based upon the maximum machine running temperatures.

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Specifiers Guide

Unit identification



Introduction

The Airedale range of OptiChill Freecool liquid screw chillers covers the nominal capacity range 750kW to 1250kW in over 180 models sizes. The technical manual covers only 40 units showing a variety of configurations.

Further information can be obtained from your sales representative.

The OptiChill range is offered in Regular (**R**) or Extra Quiet (**X**) models and available as High (**H**) or Medium (**M**) water temperatures with both Large (**L**) and Small (**S**) water temperatures differential (**ΔT**) to meet a wide range of applications.

High water temperature can be as high as 25 / 20°C

Medium water temperatures as standard are 15 / 10°C

Large ΔT = 6, 7 and 8K

Small ΔT = 4, 5 and 6K

Attention has been placed on offering a low energy high output performance and flexible product, while keeping the sound and footprint to an absolute minimum.

Noise Variant	No of Condenser Fans	Water Temp	Temperature Differences
Regular (R) or Quiet (X)	16 Fan	Medium Water Temperature	Small Temperature Difference
	18 Fan		
	20 Fan	High Water Temperatures	Large Temperature Difference
	22 Fan		

Example Units

OFC081R16-76MS2

OFC091R18-87HS4

Look out for the **Energy Saving** features and options symbol .

Refrigerants

The range has been designed and optimised for operation with ozone benign R134a refrigerant.

Range Overview

Regular Noise levels

Case Size	16 Fan		Max Duty (DX)*	Max EER**	Max ESEER**	Max Free Cooling*
	Metric		OFC087R16-77ML2	OFC077R16-66ML1	OFC077R16-66ML1	OFC087R16-77ML2
	Unit Nomenclature					
	DX Duty /FC Duty (kW)		977	757	757	859
	EER		2.94	2.9	2.9	2.84
	ESEER		3.29	3.26	3.26	3.15
	Free cooling Duty (kW)		631	584	584	712
	Fan Selection		Small EC	Small EC	Small EC	Large EC
	Economiser Active		Yes	No	No	n/a
	Rows FC		2	2	2	3
	dT HX Selection		5K	5K	5K	N/A
	18 Fan		Max Duty (DX)*	Max EER**	Max ESEER**	Max Free Cooling*
	Metric		OFC106R18-99ML5	OFC078R18-66ML1	OFC078R18-66ML1	OFC111R18-09ML5
	Unit Nomenclature					
	DX Duty /FC Duty (kW)		1149	762	762	1134
	EER		2.56	2.96	2.96	2.55
	ESEER		3.20	3.33	3.33	2.84
	Free cooling Duty (kW)		758	647	647	869
	Fan Selection		Large EC	Small EC	Small EC	Large EC
	Economiser Active		Yes	No	No	n/a
	Rows FC		2	2	2	3
	dT HX Selection		5K	5K	5K	N/A
	20 Fan		Max Duty (DX)*	Max EER**	Max ESEER**	Max Free Cooling*
	Metric		OFC119R20-00ML6	OFC119R20-00ML6	OFC119R20-00ML6	OFC108R20-99HL6
	Unit Nomenclature					
	DX Duty /FC Duty (kW)		1227	1178	1176	1112
	EER		2.41	3.01	3.01	2.97
	ESEER		2.88	3.38	3.38	3.33
	Free cooling Duty (kW)		846	809	837	947
	Fan Selection		Large EC	Small EC	Small EC	Large EC
	Economiser Active		Yes	No	No	n/a
	Rows FC		2	2	2	3
	dT HX Selection		5K	5K	5K	N/A
	22 Fan		Max Duty (DX)*	Max EER**	Max ESEER**	Max Free Cooling*
	Metric		OFC127R22-11ML7	OFC079R22-66HL1	OFC101R22-88HL5	OFC127R22-11ML7
	Unit Nomenclature					
	DX Duty /FC Duty (kW)		1322	766	1006	1268
	EER		2.43	3.06	2.98	3.00
	ESEER		3.15	3.32	3.44	3.35
	Free cooling Duty (kW)		903	765	840	1068
	Fan Selection		Small EC	Small EC	Small EC	Large EC
	Economiser Active		Yes	No	No	n/a
	Rows FC		2	2	2	3
	dT HX Selection		5K	5K	5K	N/A

* Based upon 10 / 15°C temperatures 35°C Ambient 20% Ethylene Glycol

** Based upon water temperature of 7 / 12°C 35°C Ambient

Range Overview Extra Quiet Noise Levels

Case Size	Metric		Max Duty (DX)*	Max EER**	Max ESEER**	Max Free Cooling*
	Unit Nomenclature		OFC083X16-77ML2	OFC074X16-66HL1	OFC074X16-66ML1	OFC083X16-77HL2
	16 Fan	DX Duty /FC Duty (kW)	825	725	727	812
		EER	2.66	2.8	2.79	2.59
		ESEER	2.88	3.14	3.23	2.82
		Free cooling Duty (kW)	514	489	537	569
		Fan Selection	AC	Small EC	Small EC	Large EC
		Economiser Active	No	No	No	n/a
		Rows FC	2	2	2	3
		dT HX Selection	5K	5K	5K	N/A
	Metric		Max Duty (DX)*	Max EER**	Max ESEER**	Max Free Cooling*
	Unit Nomenclature		OFC092X18-88ML3	OFC75X18-76HL1	OFC095X18-88HL5	OFC095X18-88HL5
	18 Fan	DX Duty /FC Duty (kW)	927	739	944	944
		EER	2.55	2.91	2.70	2.59
		ESEER	2.90	3.21	3.28	2.93
		Free cooling Duty (kW)	588	546	575	658
		Fan Selection	AC	Small EC	Small EC	AC
		Economiser Active	No	No	No	n/a
		Rows FC	2	2	2	3
		dT HX Selection	5K	5K	5K	N/A
	Metric		Max Duty (DX)*	Max EER**	Max ESEER**	Max Free Cooling*
	Unit Nomenclature		OFC096X20-88ML5	OFC076X20-66HL1	OFC097X20-88HL5	OFC104X20-99HL6
	20 Fan	DX Duty /FC Duty (kW)	970	750	964	1059
		EER	2.67	2.98	2.82	2.55
		ESEER	2.95	3.27	3.37	2.91
		Free cooling Duty (kW)	654	601	632	746
		Fan Selection	AC	Small EC	Small EC	AC
		Economiser Active	No	No	No	n/a
		Rows FC	2	2	2	3
		dT HX Selection	5K	5K	5K	N/A
	Metric		Max Duty (DX)*	Max EER**	Max ESEER**	Max Free Cooling*
	Unit Nomenclature		OFC105X22-99ML6	OFC104X22-99HS7	OFC098X22-99HL4	OFC105X22-99HL6
	22 Fan	DX Duty /FC Duty (kW)	1081	1071	977	1076
		EER	2.60	3.04	2.9	2.62
		ESEER	2.91	3.31	3.42	2.93
		Free cooling Duty (kW)	731	714	699	816
		Fan Selection	No	Small EC	Small EC	AC
		Economiser Active	No	No	No	n/a
		Rows FC	2	2	2	3
		dT HX Selection	5K	5K	5K	N/A

* Based upon 10 / 15°C temperatures 35°C Ambient 20% Ethylene Glycol

** Based upon water temperature of 7 / 12°C 35°C Ambient

Range Layout

2 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
R	16	M	S	OFC076R16-66MS1	755	2.84	2.92	563	753.7	2.89	3.25	583	753	2.89	3.23	601
				OFC081R16-76MS2	806	2.83	2.90	574	810.1	2.89	3.20	597	809	2.89	3.19	615
				OFC086R16-77MS2	853	2.82	2.92	584	857.9	2.88	3.20	608	857	2.87	3.19	627
			L	OFC077R16-66ML1	758	2.84	2.94	564	757.3	2.90	3.26	584	757	2.90	3.25	602
				OFC081R16-76ML2	811	2.85	2.92	575	814.9	2.90	3.22	598	814	2.90	3.20	617
				OFC087R16-77ML2	859	2.84	2.93	585	863.7	2.89	3.22	609	863	2.89	3.21	628
		H	S	OFC076R16-66HS1	752	2.84	2.84	563	750.8	2.90	3.16	583	751	2.90	3.14	600
				OFC081R16-76HS2	800	2.80	2.80	573	803.2	2.86	3.09	595	803	2.85	3.07	614
				OFC086R16-77HS2	843	2.75	2.79	582	846.8	2.80	3.07	605	846	2.80	3.05	624
			L	OFC077R16-66HL1	756	2.85	2.86	563	754.4	2.91	3.17	584	754	2.91	3.16	601
				OFC082R16-76HL2	804	2.82	2.81	574	807.9	2.87	3.10	596	807	2.87	3.08	615
				OFC087R16-77HL2	848	2.77	2.81	583	852.3	2.82	3.08	606	852	2.82	3.07	626

(1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
(2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
(3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
(4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
(5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
R	18	M	S	OFC077R18-66MS1	765	2.88	2.93	626	758.9	2.95	3.31	646	759	2.95	3.29	665
				OFC082R18-76MS2	818	2.89	2.91	639	816.0	2.95	3.26	662	816	2.95	3.25	682
				OFC087R18-77MS2	867	2.88	2.93	650	864.6	2.94	3.26	675	864	2.94	3.25	696
				OFC091R18-87MS4	912	2.79	2.93	660	916.5	2.84	3.24	687	916	2.84	3.22	709
				OFC094R18-87MS6	939	2.85	2.87	666	945.1	2.90	3.16	694	944	2.90	3.15	716
				OFC095R18-88MS4	957	2.71	2.93	669	961.6	2.75	3.23	697	961	2.75	3.22	720
				OFC098R18-88MS6	986	2.76	2.89	675	992.9	2.81	3.17	704	992	2.81	3.15	727
				OFC102R18-99MS5	1049	2.59	2.88	686	1060.5	2.64	3.13	717	1060	2.64	3.12	742
				OFC105R18-99MS6	1086	2.64	2.85	692	1098.9	2.70	3.08	724	1100	2.69	3.07	749
				OFC111R18-09MS6	1114	2.53	2.64	696	1126.8	2.59	2.82	729	1131	2.59	2.81	755
			L	OFC078R18-66ML1	768	2.89	2.95	627	762.5	2.96	3.33	647	763	2.96	3.31	666
				OFC083R18-76ML2	823	2.90	2.93	640	820.9	2.96	3.28	663	821	2.96	3.26	684
				OFC088R18-77ML2	873	2.90	2.95	652	870.4	2.96	3.28	676	870	2.95	3.26	697
				OFC092R18-87ML3	917	2.80	2.94	661	921.7	2.86	3.25	688	921	2.85	3.23	710
				OFC094R18-87ML5	943	2.86	2.97	667	949.5	2.91	3.28	695	949	2.90	3.27	717
				OFC096R18-88ML3	963	2.72	2.95	670	967.4	2.77	3.24	698	966	2.76	3.23	721
				OFC099R18-88ML5	991	2.77	2.98	676	997.6	2.82	3.27	705	997	2.81	3.26	728
				OFC103R18-99ML4	1056	2.60	2.90	687	1067.9	2.65	3.14	718	1068	2.65	3.13	743
				OFC106R18-99ML5	1091	2.65	2.94	693	1104.3	2.71	3.18	725	1105	2.70	3.17	750
				OFC111R18-09ML5	1119	2.54	2.71	697	1132.6	2.60	2.89	730	1138	2.59	2.89	756

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
R	18	H	S	OFC077R18-66HS1	762	2.88	2.85	625	755.9	2.96	3.22	646	756	2.96	3.20	664
				OFC082R18-76HS2	811	2.85	2.81	637	809.0	2.92	3.14	660	809	2.91	3.12	680
				OFC087R18-77HS2	855	2.81	2.80	648	853.3	2.86	3.12	672	853	2.86	3.11	693
				OFC091R18-87HS4	906	2.79	2.92	659	909.4	2.84	3.24	685	909	2.84	3.23	707
				OFC094R18-87HS6	933	2.84	2.86	664	937.8	2.90	3.16	692	937	2.89	3.14	714
				OFC095R18-88HS4	956	2.77	2.99	669	959.4	2.82	3.30	697	959	2.82	3.28	720
				OFC098R18-88HS6	986	2.82	2.94	675	991.3	2.88	3.23	704	990	2.87	3.22	727
				OFC102R18-99HS5	1052	2.66	2.95	687	1063.3	2.71	3.20	718	1062	2.71	3.19	742
				OFC106R18-99HS6	1090	2.71	2.91	693	1102.8	2.77	3.16	725	1103	2.77	3.15	750
			L	OFC078R18-66HL1	766	2.89	2.87	626	759.6	2.97	3.23	647	760	2.97	3.21	665
				OFC083R18-76HL2	816	2.86	2.82	638	813.7	2.93	3.16	661	813	2.93	3.14	681
				OFC088R18-77HL2	861	2.82	2.82	649	858.8	2.88	3.14	673	858	2.88	3.12	694
				OFC092R18-87HL3	911	2.80	2.94	660	914.6	2.85	3.26	687	914	2.85	3.24	709
				OFC094R18-87HL5	937	2.85	2.97	665	942.2	2.90	3.28	693	941	2.90	3.27	715
				OFC096R18-88HL3	962	2.78	3.00	670	965.4	2.83	3.31	698	965	2.83	3.30	721
				OFC099R18-88HL5	990	2.83	3.03	676	996.1	2.89	3.35	704	995	2.88	3.33	728
				OFC103R18-99HL4	1059	2.67	2.96	688	1071.1	2.72	3.22	719	1070	2.72	3.21	744
				OFC107R18-99HL5	1095	2.72	3.00	694	1108.3	2.78	3.26	726	1108	2.78	3.25	751

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
R	20	M	S	OFC078R20-66MS1	772	2.90	2.94	686	762.6	3.00	3.37	707	763	3.00	3.34	727
				OFC083R20-76MS2	827	2.91	2.92	702	820.2	3.00	3.32	725	820	3.00	3.29	746
				OFC088R20-77MS2	877	2.91	2.94	715	869.3	2.99	3.31	739	869	2.99	3.29	762
				OFC092R20-87MS4	922	2.83	2.93	726	921.1	2.89	3.29	753	921	2.89	3.27	777
				OFC095R20-87MS6	951	2.89	2.88	732	950.4	2.95	3.21	761	950	2.95	3.20	785
				OFC096R20-88MS4	968	2.75	2.94	736	966.4	2.80	3.28	765	966	2.80	3.26	790
				OFC099R20-88MS6	999	2.81	2.90	743	998.4	2.86	3.22	773	998	2.86	3.20	798
				OFC103R20-99MS5	1062	2.64	2.89	756	1067.4	2.69	3.18	788	1066	2.68	3.16	814
				OFC107R20-99MS6	1101	2.70	2.86	763	1108.2	2.75	3.13	796	1107	2.74	3.12	823
				OFC112R20-09MS6	1129	2.59	2.66	768	1140.6	2.64	2.87	802	1139	2.63	2.86	830
				OFC118R20-00MS7	1156	2.49	2.65	772	1169.6	2.53	2.85	807	1168	2.53	2.84	836
			L	OFC078R20-66ML1	776	2.91	2.95	687	766.3	3.01	3.38	708	767	3.01	3.36	728
				OFC083R20-76ML2	831	2.93	2.93	703	825.0	3.01	3.33	726	825	3.01	3.31	748
				OFC089R20-77ML2	882	2.93	2.95	716	875.0	3.00	3.33	741	875	3.00	3.31	764
				OFC093R20-87ML3	927	2.84	2.95	727	926.5	2.90	3.30	755	926	2.90	3.28	778
				OFC095R20-87ML5	955	2.90	2.98	733	954.8	2.96	3.33	762	954	2.96	3.31	786
				OFC097R20-88ML3	973	2.76	2.95	738	972.4	2.82	3.29	766	972	2.81	3.28	791
				OFC100R20-88ML5	1003	2.81	2.99	744	1003.2	2.87	3.33	774	1003	2.86	3.31	799
				OFC104R20-99ML4	1070	2.65	2.91	757	1075.0	2.70	3.20	790	1074	2.70	3.18	816
				OFC108R20-99ML5	1107	2.71	2.95	764	1113.9	2.76	3.23	797	1113	2.75	3.22	825
				OFC113R20-09ML5	1135	2.60	2.73	769	1147.7	2.65	2.95	804	1146	2.65	2.94	831
				OFC119R20-00ML6	1164	2.50	2.66	773	1177.9	2.54	2.86	809	1176	2.54	2.85	837

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
R	20	H	S	OFC078R20-66HS1	769	2.90	2.86	685	759.5	3.01	3.27	706	760	3.00	3.24	726
				OFC083R20-76HS2	819	2.88	2.81	700	813.0	2.96	3.19	723	813	2.96	3.17	744
				OFC088R20-77HS2	865	2.84	2.81	712	857.7	2.91	3.17	736	858	2.91	3.15	758
				OFC092R20-87HS4	916	2.83	2.93	724	914.0	2.89	3.29	751	914	2.89	3.27	775
				OFC095R20-87HS6	944	2.88	2.87	731	942.9	2.95	3.21	759	943	2.94	3.19	783
				OFC096R20-88HS4	966	2.81	2.99	736	964.3	2.87	3.35	764	964	2.87	3.33	789
				OFC099R20-88HS6	998	2.87	2.95	743	996.9	2.93	3.28	772	997	2.93	3.27	798
				OFC103R20-99HS3	1064	2.71	2.95	756	1068.3	2.76	3.25	788	1068	2.76	3.24	815
				OFC103R20-99HS5	1065	2.71	2.96	756	1069.2	2.76	3.26	788	1068	2.76	3.24	815
				OFC107R20-99HS6	1105	2.77	2.93	764	1111.2	2.82	3.21	797	1110	2.82	3.20	824
			L	OFC078R20-66HL1	773	2.91	2.87	687	763.2	3.02	3.28	707	763	3.02	3.26	727
				OFC084R20-76HL2	824	2.89	2.83	701	817.7	2.98	3.20	724	818	2.97	3.18	745
				OFC089R20-77HL2	870	2.85	2.82	713	863.2	2.93	3.18	737	863	2.92	3.16	760
				OFC093R20-87HL3	921	2.84	2.94	726	919.1	2.90	3.31	753	919	2.90	3.29	776
				OFC095R20-87HL5	948	2.89	2.97	732	947.4	2.95	3.34	760	947	2.95	3.32	784
				OFC097R20-88HL3	972	2.83	3.01	737	970.2	2.88	3.37	766	970	2.88	3.35	791
				OFC100R20-88HL5	1003	2.88	3.04	744	1001.8	2.94	3.40	773	1001	2.93	3.38	799
				OFC104R20-99HL4	1073	2.72	2.97	758	1077.1	2.77	3.28	790	1076	2.77	3.26	817
				OFC108R20-99HL6	1111	2.78	3.01	765	1117.3	2.83	3.31	798	1116	2.83	3.30	825

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
R	22	M	S	OFC078R22-66MS1	778	2.90	2.94	745	765.2	3.04	3.41	765	766	3.04	3.38	786
				OFC084R22-76MS2	833	2.92	2.92	762	823.0	3.04	3.36	785	823	3.03	3.33	808
				OFC089R22-77MS2	884	2.93	2.94	777	872.5	3.03	3.36	802	873	3.02	3.33	825
				OFC093R22-87MS4	930	2.85	2.93	790	924.0	2.93	3.33	817	924	2.93	3.31	843
				OFC096R22-87MS6	959	2.91	2.88	797	953.9	2.99	3.25	826	954	2.99	3.23	852
				OFC097R22-88MS4	976	2.77	2.94	801	969.5	2.84	3.32	830	970	2.84	3.30	857
				OFC100R22-88MS6	1008	2.83	2.90	809	1002.1	2.90	3.26	839	1002	2.89	3.24	866
				OFC104R22-99MS5	1072	2.67	2.90	824	1070.9	2.72	3.22	857	1071	2.72	3.20	885
				OFC108R22-99MS6	1112	2.74	2.87	832	1112.5	2.79	3.18	866	1112	2.78	3.16	895
				OFC113R22-09MS6	1141	2.63	2.67	837	1145.2	2.67	2.91	873	1144	2.67	2.90	903
			L	OFC119R22-00MS7	1169	2.53	2.65	842	1174.6	2.57	2.89	879	1174	2.57	2.88	909
				OFC126R22-11MS8	1256	2.49	2.85	856	1266.8	2.53	3.11	895	1265	2.53	3.10	926
				OFC079R22-66ML1	781	2.91	2.96	746	768.9	3.05	3.43	766	769	3.05	3.40	787
				OFC084R22-76ML2	838	2.93	2.94	763	827.8	3.05	3.37	787	828	3.05	3.35	810
				OFC089R22-77ML2	889	2.94	2.96	778	878.2	3.04	3.37	803	878	3.04	3.35	827
				OFC093R22-87ML3	935	2.86	2.95	791	929.2	2.94	3.34	819	929	2.94	3.32	844
				OFC096R22-87ML5	963	2.92	2.98	798	958.3	3.00	3.37	827	958	2.99	3.35	853
				OFC098R22-88ML3	981	2.79	2.96	803	975.2	2.85	3.34	832	975	2.85	3.32	858
				OFC101R22-88ML5	1012	2.84	2.99	810	1006.9	2.91	3.37	841	1007	2.90	3.35	868
				OFC105R22-99ML4	1080	2.69	2.91	825	1078.6	2.74	3.24	858	1078	2.73	3.22	887
				OFC109R22-99ML5	1118	2.74	2.95	833	1118.3	2.79	3.28	867	1118	2.79	3.26	896
				OFC114R22-09ML5	1147	2.64	2.73	838	1152.4	2.68	2.99	874	1151	2.68	2.98	904
				OFC120R22-00ML6	1177	2.54	2.67	844	1183.0	2.58	2.90	880	1182	2.58	2.89	911
				OFC127R22-11ML7	1263	2.50	2.87	857	1274.6	2.54	3.12	896	1273	2.54	3.11	928

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
R	22	H	S	OFC078R22-66HS1	775	2.91	2.86	744	762.0	3.05	3.31	764	762	3.04	3.28	785
				OFC084R22-76HS2	825	2.88	2.82	760	815.7	3.00	3.22	783	816	3.00	3.20	805
				OFC089R22-77HS2	872	2.85	2.81	773	860.7	2.95	3.20	798	861	2.94	3.18	821
				OFC093R22-87HS4	923	2.84	2.93	788	917.0	2.92	3.33	815	917	2.92	3.31	840
				OFC096R22-87HS6	952	2.90	2.87	795	946.4	2.98	3.25	824	946	2.98	3.23	849
				OFC097R22-88HS4	974	2.84	3.00	801	967.5	2.91	3.39	830	967	2.90	3.37	856
				OFC100R22-88HS6	1007	2.90	2.96	809	1000.7	2.97	3.33	839	1001	2.96	3.31	866
				OFC104R22-99HS5	1075	2.74	2.96	824	1073.0	2.80	3.30	857	1073	2.80	3.28	885
				OFC108R22-99HS6	1116	2.81	2.93	833	1115.6	2.86	3.26	867	1115	2.86	3.24	896
			L	OFC079R22-66HL1	778	2.92	2.87	745	765.8	3.06	3.32	765	766	3.05	3.29	786
				OFC084R22-76HL2	830	2.90	2.83	761	820.4	3.01	3.24	784	821	3.01	3.21	807
				OFC090R22-77HL2	877	2.86	2.83	775	866.2	2.96	3.22	800	866	2.96	3.19	823
				OFC093R22-87HL3	928	2.86	2.94	789	922.0	2.94	3.35	817	922	2.93	3.32	842
				OFC096R22-87HL5	956	2.91	2.97	797	950.9	2.99	3.38	825	951	2.99	3.35	851
				OFC098R22-88HL3	980	2.85	3.01	802	973.3	2.92	3.41	832	973	2.92	3.39	858
				OFC101R22-88HL5	1012	2.91	3.04	810	1005.5	2.98	3.44	840	1005	2.97	3.42	867
				OFC105R22-99HL4	1083	2.76	2.98	826	1080.9	2.81	3.32	859	1081	2.81	3.30	887
				OFC109R22-99HL5	1122	2.82	3.02	834	1121.5	2.87	3.36	868	1121	2.87	3.34	897

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
X	16	M	S	OFC073X16-66MS1	728	2.69	2.87	499	723.4	2.78	3.21	489	722	2.76	3.19	486
				OFC078X16-76MS2	776	2.67	2.85	507	770.4	2.75	3.16	496	769	2.74	3.14	493
				OFC083X16-77MS2	820	2.65	2.87	514	813.9	2.72	3.16	503	812	2.70	3.15	499
		H	L	OFC074X16-66ML1	732	2.69	2.89	500	726.6	2.79	3.23	490	725	2.77	3.21	486
				OFC079X16-76ML2	780	2.68	2.87	508	774.3	2.76	3.18	497	772	2.75	3.16	493
				OFC083X16-77ML2	825	2.66	2.88	514	818.1	2.73	3.18	503	816	2.71	3.16	500
			S	OFC073X16-66HS1	727	2.70	2.80	499	722.0	2.79	3.13	489	720	2.78	3.11	485
				OFC078X16-76HS2	771	2.65	2.75	506	765.6	2.73	3.05	496	764	2.71	3.03	492
				OFC083X16-77HS2	811	2.59	2.75	512	805.6	2.66	3.03	502	804	2.64	3.02	498
			L	OFC074X16-66HL1	730	2.71	2.81	499	725.3	2.80	3.14	489	724	2.79	3.12	486
				OFC079X16-76HL2	775	2.66	2.77	507	769.4	2.74	3.06	496	768	2.72	3.05	493
				OFC083X16-77HL2	816	2.60	2.76	513	809.7	2.67	3.05	502	808	2.65	3.03	499

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
X	18	M	S	OFC075X18-66MS1	742	2.77	2.90	557	737.5	2.89	3.29	546	736	2.87	3.27	542
				OFC080X18-76MS2	791	2.76	2.88	566	786.5	2.86	3.24	554	785	2.85	3.22	551
				OFC084X18-77MS2	837	2.74	2.90	574	831.6	2.84	3.24	562	830	2.82	3.22	558
				OFC088X18-87MS4	880	2.64	2.89	581	874.4	2.72	3.20	569	872	2.70	3.18	565
				OFC090X18-87MS6	904	2.68	2.82	585	897.4	2.76	3.11	572	895	2.75	3.10	568
				OFC092X18-88MS4	923	2.54	2.89	588	NA	NA	NA	NA	NA	NA	NA	NA
				OFC094X18-88MS6	949	2.58	2.83	592	NA	NA	NA	NA	NA	NA	NA	NA
			L	OFC075X18-66ML1	745	2.78	2.91	557	740.9	2.89	3.31	546	739	2.88	3.28	543
				OFC080X18-76ML2	796	2.77	2.89	567	790.8	2.88	3.25	555	789	2.86	3.23	551
				OFC085X18-77ML2	842	2.75	2.91	575	836.7	2.85	3.25	563	835	2.83	3.24	559
				OFC089X18-87ML3	885	2.65	2.90	582	878.5	2.73	3.22	569	876	2.71	3.20	565
				OFC091X18-87ML5	908	2.69	2.93	585	901.3	2.77	3.24	573	899	2.75	3.22	569
				OFC092X18-88ML3	927	2.55	2.90	588	NA	NA	NA	NA	NA	NA	NA	NA

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
(2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
(3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
(4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
(5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔTs	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
X	18	H	S	OFC075X18-66HS1	740	2.78	2.82	556	735.7	2.90	3.20	545	734	2.88	3.18	542
				OFC080X18-76HS2	786	2.73	2.78	565	780.9	2.84	3.12	553	779	2.82	3.10	550
				OFC084X18-77HS2	827	2.68	2.77	572	822.3	2.77	3.10	560	821	2.75	3.08	557
				OFC088X18-87HS4	875	2.64	2.89	580	869.6	2.72	3.21	568	868	2.70	3.20	564
				OFC091X18-87HS6	899	2.68	2.82	584	892.4	2.76	3.12	571	890	2.75	3.10	567
				OFC092X18-88HS4	922	2.60	2.94	588	915.9	2.67	3.26	575	914	2.65	3.24	571
				OFC095X18-88HS6	949	2.65	2.89	592	942.1	2.71	3.18	579	940	2.70	3.16	574
				OFC098X18-99HS5	1008	2.46	2.88	600	999.4	2.50	3.15	586	NA	NA	NA	NA
				OFC101X18-99HS6	1045	2.51	2.84	605	NA	NA	NA	NA	NA	NA	NA	NA
			L	OFC075X18-66HL1	743	2.79	2.84	557	739.1	2.91	3.21	546	738	2.89	3.19	542
				OFC080X18-76HL2	790	2.74	2.79	566	785.2	2.85	3.13	554	784	2.83	3.11	550
				OFC085X18-77HL2	832	2.69	2.79	573	827.2	2.78	3.11	561	825	2.77	3.09	557
				OFC089X18-87HL3	880	2.65	2.90	581	873.7	2.73	3.23	569	872	2.71	3.21	565
				OFC091X18-87HL5	903	2.69	2.93	585	896.3	2.77	3.26	572	894	2.75	3.24	568
				OFC093X18-88HL3	927	2.61	2.95	588	920.1	2.68	3.28	576	918	2.66	3.26	571
				OFC095X18-88HL5	953	2.65	2.98	592	946.2	2.72	3.30	579	944	2.70	3.28	575
				OFC099X18-99HL4	1014	2.46	2.90	601	1004.9	2.50	3.17	587	NA	NA	NA	NA
				OFC102X18-99HL6	1048	2.52	2.93	605	NA	NA	NA	NA	NA	NA	NA	NA

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
(2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
(3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
(4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
(5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
X	20	M	S	OFC076X20-66MS1	752	2.82	2.91	613	748.3	2.97	3.35	601	747	2.95	3.33	597
				OFC081X20-76MS2	803	2.82	2.89	623	798.8	2.95	3.30	611	797	2.94	3.27	607
				OFC085X20-77MS2	850	2.81	2.91	633	845.3	2.92	3.30	620	844	2.91	3.27	615
				OFC089X20-87MS4	895	2.71	2.90	641	889.3	2.81	3.26	628	888	2.80	3.24	623
				OFC092X20-87MS6	920	2.76	2.84	645	913.8	2.86	3.18	632	912	2.84	3.16	627
				OFC093X20-88MS4	938	2.61	2.91	649	932.7	2.70	3.25	635	931	2.68	3.23	630
				OFC096X20-88MS6	966	2.66	2.86	653	959.7	2.74	3.18	639	958	2.73	3.16	635
			L	OFC076X20-66ML1	756	2.83	2.93	613	751.7	2.97	3.37	601	750	2.96	3.34	597
				OFC081X20-76ML2	808	2.83	2.91	624	803.5	2.96	3.31	612	802	2.95	3.29	608
				OFC086X20-77ML2	856	2.82	2.93	634	850.9	2.94	3.31	621	849	2.93	3.29	616
				OFC090X20-87ML3	899	2.72	2.92	642	893.9	2.82	3.28	628	892	2.81	3.26	624
				OFC092X20-87ML5	924	2.77	2.95	646	917.8	2.87	3.31	632	916	2.85	3.29	628
				OFC094X20-88ML3	944	2.62	2.92	650	937.7	2.71	3.27	636	936	2.69	3.25	631
				OFC096X20-88ML5	970	2.67	2.95	654	963.9	2.75	3.30	640	962	2.74	3.28	635

(1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.

(2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

(3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.

(4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.

(5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
X	20	H	S	OFC076X20-66HS1	750	2.83	2.83	612	746.1	2.97	3.25	600	745	2.96	3.23	596
				OFC081X20-76HS2	797	2.79	2.79	622	792.8	2.92	3.17	610	791	2.91	3.15	606
				OFC086X20-77HS2	840	2.74	2.79	631	835.3	2.85	3.15	618	834	2.84	3.13	614
				OFC090X20-87HS4	889	2.71	2.90	640	884.0	2.81	3.27	627	882	2.80	3.25	622
				OFC092X20-87HS6	914	2.76	2.84	644	908.3	2.86	3.18	631	906	2.84	3.16	626
				OFC093X20-88HS4	937	2.68	2.96	649	931.8	2.77	3.32	635	930	2.75	3.30	630
				OFC096X20-88HS6	965	2.73	2.91	653	959.3	2.81	3.25	639	957	2.80	3.23	635
				OFC100X20-99HS5	1028	2.55	2.91	663	1020.9	2.61	3.22	648	1018	2.59	3.20	643
				OFC103X20-99HS6	1065	2.60	2.87	668	1057.6	2.66	3.16	653	1055	2.65	3.15	648
			L	OFC076X20-66HL1	753	2.84	2.85	613	749.6	2.98	3.27	601	748	2.97	3.24	597
				OFC081X20-76HL2	801	2.80	2.80	623	797.2	2.93	3.18	611	796	2.92	3.16	607
				OFC086X20-77HL2	845	2.75	2.80	632	840.5	2.87	3.16	619	839	2.85	3.14	615
				OFC090X20-87HL3	894	2.72	2.92	641	888.6	2.82	3.29	627	887	2.81	3.27	623
				OFC092X20-87HL5	918	2.76	2.94	645	912.3	2.87	3.32	632	910	2.85	3.29	627
				OFC094X20-88HL3	943	2.69	2.97	649	937.0	2.78	3.34	636	935	2.76	3.32	631
				OFC097X20-88HL5	970	2.73	3.01	654	963.6	2.82	3.37	640	962	2.81	3.35	635
				OFC101X20-99HL4	1035	2.56	2.93	664	1027.1	2.62	3.24	649	1025	2.60	3.22	644
				OFC104X20-99HL6	1069	2.61	2.96	669	1061.6	2.67	3.27	654	1059	2.65	3.25	649

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
X	22	M	S	OFC076X22-66MS1	760	2.85	2.92	667	756.6	3.02	3.40	654	755	3.01	3.37	650
				OFC082X22-76MS2	812	2.86	2.90	679	808.4	3.01	3.35	666	807	3.00	3.32	662
				OFC086X22-77MS2	860	2.85	2.92	690	856.1	2.99	3.34	676	855	2.98	3.32	672
				OFC090X22-87MS4	905	2.76	2.91	699	900.8	2.88	3.31	685	899	2.87	3.29	680
				OFC093X22-87MS6	932	2.81	2.85	705	926.4	2.93	3.23	690	925	2.92	3.21	685
				OFC094X22-88MS4	950	2.67	2.92	708	945.0	2.77	3.30	693	943	2.76	3.28	689
				OFC097X22-88MS6	979	2.72	2.87	713	973.1	2.82	3.23	698	971	2.81	3.21	693
				OFC101X22-99MS5	1040	2.54	2.86	724	1033.7	2.62	3.19	708	1032	2.61	3.18	703
				OFC104X22-99MS7	1074	2.59	2.90	729	1067.3	2.67	3.23	713	NA	NA	NA	NA
			L	OFC077X22-66ML1	763	2.86	2.93	668	760.1	3.03	3.42	655	759	3.02	3.39	651
				OFC082X22-76ML2	817	2.87	2.91	680	813.2	3.03	3.36	667	812	3.01	3.33	663
				OFC087X22-77ML2	866	2.86	2.93	691	861.8	3.01	3.36	677	860	3.00	3.33	673
				OFC091X22-87ML3	910	2.77	2.92	700	905.7	2.89	3.33	686	904	2.88	3.30	681
				OFC093X22-87ML5	936	2.82	2.95	705	930.5	2.94	3.36	691	929	2.93	3.33	686
				OFC095X22-88ML3	955	2.68	2.93	709	950.4	2.78	3.32	694	949	2.77	3.29	690
				OFC098X22-88ML5	983	2.73	2.96	714	977.5	2.83	3.35	699	976	2.81	3.33	694
				OFC102X22-99ML4	1047	2.55	2.88	725	1040.2	2.63	3.21	709	1038	2.61	3.19	704
				OFC105X22-99ML6	1081	2.60	2.91	731	NA	NA	NA	NA	NA	NA	NA	NA

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

2 Row Free Cooling Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔT s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW	Duty (kW)	EER	ESEER	2RW
X	22	H	S	OFC076X22-66HS1	757	2.86	2.84	666	754.2	3.03	3.30	654	753	3.02	3.27	650
				OFC082X22-76HS2	806	2.82	2.79	678	801.9	2.98	3.21	665	801	2.97	3.19	660
				OFC087X22-77HS2	850	2.78	2.79	688	845.4	2.92	3.19	674	844	2.90	3.17	669
				OFC091X22-87HS4	900	2.76	2.91	698	895.1	2.88	3.32	684	894	2.87	3.30	679
				OFC093X22-87HS6	925	2.81	2.85	703	920.5	2.93	3.23	689	919	2.92	3.20	684
				OFC095X22-88HS4	949	2.73	2.97	708	943.9	2.84	3.37	693	942	2.83	3.35	688
				OFC098X22-88HS6	978	2.78	2.92	713	972.6	2.89	3.30	698	971	2.88	3.28	693
				OFC101X22-99HS5	1043	2.61	2.93	725	1036.7	2.69	3.28	709	1035	2.68	3.26	704
				OFC104X22-99HS7	1078	2.67	2.96	730	1071.3	2.75	3.31	714	1069	2.73	3.29	709
			L	OFC077X22-66HL1	761	2.87	2.85	667	757.7	3.04	3.31	655	757	3.03	3.28	650
				OFC082X22-76HL2	810	2.84	2.81	679	806.5	2.99	3.23	666	805	2.98	3.20	661
				OFC087X22-77HL2	855	2.79	2.81	689	850.8	2.93	3.21	675	849	2.92	3.18	671
				OFC091X22-87HL3	904	2.77	2.92	699	899.9	2.89	3.33	685	898	2.88	3.31	680
				OFC094X22-87HL5	930	2.82	2.95	704	924.7	2.94	3.36	690	923	2.93	3.34	685
				OFC095X22-88HL3	954	2.74	2.98	709	949.5	2.85	3.39	694	948	2.84	3.37	689
				OFC098X22-88HL5	982	2.79	3.02	714	977.0	2.90	3.42	699	975	2.89	3.40	694
				OFC102X22-99HL4	1050	2.62	2.94	726	1043.5	2.71	3.29	710	1041	2.69	3.27	705
				OFC105X22-99HL6	1085	2.68	2.98	731	1078.5	2.76	3.33	715	1076	2.74	3.31	710

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 2 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 2RW is the full free cooling potential at 3°C

3 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
R	16	M	S	OFC076R16-66MS1	750	2.79	2.87	627	751	2.85	3.19	653	750	2.84	3.18	675
				OFC081R16-76MS2	800	2.79	2.86	642	807	2.84	3.15	672	806	2.84	3.13	694
				OFC086R16-77MS2	847	2.77	2.87	655	854	2.83	3.15	686	853	2.83	3.14	710
			L	OFC077R16-66ML1	753	2.80	2.89	628	754	2.86	3.21	655	754	2.85	3.19	676
				OFC081R16-76ML2	805	2.80	2.87	643	812	2.85	3.16	673	811	2.85	3.15	696
				OFC087R16-77ML2	853	2.79	2.89	656	860	2.84	3.16	688	859	2.84	3.15	712
		H	S	OFC076R16-66HS1	747	2.80	2.80	627	748	2.85	3.11	652	747	2.85	3.09	674
				OFC081R16-76HS2	794	2.76	2.75	640	800	2.81	3.04	669	799	2.81	3.02	692
				OFC086R16-77HS2	837	2.71	2.75	652	843	2.76	3.02	683	842	2.76	3.01	707
			L	OFC077R16-66HL1	751	2.81	2.81	628	751	2.86	3.12	654	751	2.86	3.11	675
				OFC082R16-76HL2	799	2.77	2.77	642	805	2.82	3.05	671	804	2.82	3.04	694
				OFC087R16-77HL2	842	2.72	2.76	653	849	2.77	3.03	684	848	2.77	3.02	708

(1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.

(2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

(3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.

(4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.

(5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
R	18	M	S	OFC077R18-66MS1	760	2.84	2.89	697	756	2.91	3.26	723	756	2.91	3.24	746
				OFC082R18-76MS2	813	2.84	2.87	715	813	2.90	3.21	745	812	2.90	3.19	769
				OFC087R18-77MS2	861	2.84	2.89	730	861	2.89	3.21	761	860	2.89	3.20	787
				OFC091R18-87MS4	906	2.75	2.88	743	913	2.80	3.18	778	912	2.80	3.17	806
				OFC094R18-87MS6	932	2.80	2.83	750	941	2.85	3.11	787	940	2.85	3.10	815
				OFC095R18-88MS4	951	2.66	2.89	755	958	2.71	3.18	792	957	2.71	3.16	821
				OFC098R18-88MS6	979	2.71	2.84	762	989	2.76	3.11	800	988	2.76	3.10	830
				OFC102R18-99MS5	1041	2.54	2.84	777	1054	2.60	3.07	818	1056	2.59	3.06	850
				OFC105R18-99MS6	1078	2.59	2.80	784	1092	2.65	3.03	826	1095	2.65	3.02	860
				OFC111R18-09MS6	NA	NA	NA	NA	1120	2.55	2.77	833	1127	2.54	2.77	868
			L	OFC078R18-66ML1	764	2.85	2.90	699	759	2.92	3.27	725	759	2.92	3.26	748
				OFC083R18-76ML2	818	2.85	2.88	716	818	2.92	3.23	746	817	2.91	3.21	771
				OFC088R18-77ML2	867	2.85	2.90	731	867	2.91	3.23	763	866	2.91	3.21	790
				OFC092R18-87ML3	911	2.76	2.89	744	918	2.81	3.20	780	917	2.81	3.18	808
				OFC094R18-87ML5	937	2.81	2.92	751	946	2.86	3.23	788	945	2.86	3.21	817
				OFC096R18-88ML3	956	2.67	2.90	756	964	2.72	3.19	793	963	2.72	3.18	822
				OFC099R18-88ML5	984	2.72	2.93	763	994	2.77	3.22	802	992	2.77	3.21	832
				OFC103R18-99ML4	1048	2.55	2.85	778	1061	2.61	3.09	819	1064	2.61	3.08	852
				OFC106R18-99ML5	1083	2.60	2.89	785	1097	2.66	3.12	828	1101	2.66	3.12	861
				OFC111R18-09ML5	NA	NA	NA	NA	1125	2.55	2.84	834	1134	2.55	2.84	869

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Coil Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
R	18	H	S	OFC077R18-66HS1	758	2.84	2.81	697	753	2.92	3.17	722	753	2.91	3.15	745
				OFC082R18-76HS2	806	2.81	2.77	713	806	2.87	3.09	742	805	2.87	3.08	766
				OFC087R18-77HS2	850	2.76	2.76	726	850	2.82	3.08	757	849	2.82	3.06	783
				OFC091R18-87HS4	900	2.74	2.88	741	906	2.80	3.19	776	905	2.79	3.18	803
				OFC094R18-87HS6	926	2.80	2.82	748	934	2.85	3.11	785	933	2.85	3.09	813
				OFC095R18-88HS4	950	2.72	2.94	754	956	2.78	3.24	791	955	2.77	3.23	820
				OFC098R18-88HS6	979	2.77	2.89	762	987	2.83	3.18	800	986	2.83	3.17	830
				OFC102R18-99HS5	1044	2.61	2.90	777	1057	2.67	3.15	818	1058	2.66	3.14	850
				OFC106R18-99HS6	1082	2.66	2.87	785	1096	2.73	3.11	827	1098	2.72	3.10	861
			L	OFC078R18-66HL1	762	2.85	2.82	698	757	2.92	3.18	724	756	2.92	3.16	746
				OFC083R18-76HL2	811	2.82	2.78	714	811	2.88	3.11	744	810	2.88	3.09	768
				OFC088R18-77HL2	856	2.78	2.78	728	855	2.83	3.09	759	855	2.83	3.07	785
				OFC092R18-87HL3	905	2.76	2.89	742	911	2.81	3.20	778	911	2.80	3.19	805
				OFC094R18-87HL5	931	2.80	2.92	749	939	2.86	3.23	786	938	2.86	3.22	814
				OFC096R18-88HL3	955	2.73	2.95	756	962	2.79	3.26	793	961	2.79	3.24	822
				OFC099R18-88HL5	983	2.78	2.99	763	992	2.84	3.29	801	991	2.84	3.28	831
				OFC103R18-99HL4	1051	2.62	2.92	779	1064	2.68	3.17	820	1066	2.68	3.16	852
				OFC107R18-99HL5	1087	2.67	2.95	786	1101	2.74	3.20	829	1104	2.73	3.19	862

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
R	20	M	S	OFC078R20-66MS1	768	2.86	2.89	765	760	2.96	3.31	790	760	2.95	3.29	814
				OFC083R20-76MS2	822	2.87	2.88	785	817	2.95	3.26	815	817	2.95	3.24	841
				OFC088R20-77MS2	872	2.87	2.89	802	866	2.94	3.26	834	866	2.94	3.24	862
				OFC092R20-87MS4	917	2.79	2.89	817	918	2.85	3.23	853	917	2.85	3.22	882
				OFC095R20-87MS6	945	2.85	2.84	825	947	2.90	3.16	863	946	2.90	3.15	893
				OFC096R20-88MS4	962	2.71	2.90	830	963	2.76	3.23	868	963	2.76	3.21	899
				OFC099R20-88MS6	993	2.76	2.85	839	995	2.81	3.17	878	994	2.81	3.15	910
				OFC103R20-99MS5	1056	2.60	2.85	856	1063	2.65	3.13	899	1063	2.64	3.11	933
				OFC107R20-99MS6	1094	2.65	2.82	865	1104	2.70	3.08	909	1103	2.70	3.07	944
				OFC112R20-09MS6	1121	2.55	2.62	871	1134	2.60	2.83	917	1135	2.59	2.82	953
				OFC118R20-00MS7	1147	2.44	2.60	876	1162	2.49	2.80	923	1163	2.49	2.79	961
			L	OFC078R20-66ML1	772	2.87	2.91	766	763	2.97	3.33	792	763	2.96	3.31	816
				OFC083R20-76ML2	827	2.89	2.89	787	822	2.97	3.28	817	822	2.96	3.26	843
				OFC089R20-77ML2	877	2.89	2.91	804	871	2.96	3.28	836	871	2.96	3.26	864
				OFC093R20-87ML3	922	2.80	2.90	818	923	2.86	3.25	855	923	2.86	3.23	884
				OFC095R20-87ML5	949	2.85	2.93	827	951	2.91	3.28	864	951	2.91	3.26	895
				OFC097R20-88ML3	968	2.72	2.91	832	969	2.77	3.24	870	968	2.77	3.23	901
				OFC100R20-88ML5	997	2.77	2.94	840	999	2.82	3.27	880	999	2.82	3.26	912
				OFC104R20-99ML4	1063	2.61	2.87	858	1071	2.66	3.14	901	1070	2.66	3.13	935
				OFC108R20-99ML5	1099	2.66	2.90	866	1110	2.71	3.18	911	1108	2.71	3.17	946
				OFC113R20-09ML5	1127	2.55	2.69	872	1141	2.61	2.90	918	1142	2.60	2.89	955
				OFC119R20-00ML6	1155	2.45	2.62	878	1170	2.51	2.82	925	1171	2.50	2.81	963

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Coil Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
R	20	H	S	OFC078R20-66HS1	766	2.87	2.82	764	757	2.96	3.22	789	757	2.96	3.19	813
				OFC083R20-76HS2	815	2.84	2.77	782	810	2.92	3.14	812	810	2.92	3.12	838
				OFC088R20-77HS2	860	2.80	2.77	798	854	2.87	3.12	829	854	2.87	3.10	857
				OFC092R20-87HS4	911	2.78	2.88	815	911	2.84	3.24	850	910	2.84	3.22	880
				OFC095R20-87HS6	938	2.84	2.83	823	939	2.90	3.16	860	939	2.90	3.14	891
				OFC096R20-88HS4	961	2.77	2.95	830	961	2.82	3.30	867	960	2.82	3.28	899
				OFC099R20-88HS6	992	2.83	2.91	839	993	2.88	3.23	878	993	2.88	3.22	910
				OFC103R20-99HS3	1058	2.67	2.91	856	1065	2.72	3.20	899	1064	2.71	3.19	933
				OFC103R20-99HS5	1059	2.67	2.91	856	1065	2.72	3.21	899	1065	2.72	3.19	933
				OFC107R20-99HS6	1098	2.73	2.88	866	1107	2.78	3.16	910	1106	2.78	3.15	945
			L	OFC078R20-66HL1	769	2.88	2.83	765	760	2.97	3.23	791	760	2.97	3.21	815
				OFC084R20-76HL2	820	2.85	2.78	784	815	2.93	3.15	814	815	2.93	3.13	840
				OFC089R20-77HL2	866	2.81	2.78	800	860	2.88	3.13	831	860	2.88	3.12	859
				OFC093R20-87HL3	916	2.80	2.90	816	916	2.86	3.25	852	916	2.85	3.24	882
				OFC095R20-87HL5	943	2.85	2.93	825	944	2.91	3.28	862	943	2.91	3.27	892
				OFC097R20-88HL3	967	2.78	2.96	832	967	2.84	3.31	869	966	2.84	3.29	901
				OFC100R20-88HL5	997	2.84	3.00	840	998	2.89	3.34	879	997	2.89	3.33	911
				OFC104R20-99HL4	1066	2.68	2.93	858	1073	2.73	3.22	901	1072	2.73	3.21	936
				OFC108R20-99HL6	1103	2.73	2.96	867	1113	2.79	3.26	912	1112	2.79	3.24	947

(1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.

(2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

(3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.

(4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.

(5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Coil Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
R	22	M	S	OFC078R22-66MS1	774	2.87	2.90	830	762	3.00	3.36	855	763	2.99	3.33	880
				OFC084R22-76MS2	829	2.88	2.88	852	820	2.99	3.31	882	820	2.99	3.28	909
				OFC089R22-77MS2	879	2.89	2.90	872	869	2.98	3.31	903	869	2.98	3.28	933
				OFC093R22-87MS4	925	2.81	2.89	888	921	2.89	3.28	925	921	2.88	3.26	956
				OFC096R22-87MS6	954	2.87	2.84	898	950	2.94	3.20	936	950	2.94	3.19	968
				OFC097R22-88MS4	971	2.73	2.90	904	966	2.80	3.27	942	966	2.79	3.25	975
				OFC100R22-88MS6	1002	2.79	2.86	914	998	2.85	3.21	954	998	2.85	3.19	987
				OFC104R22-99MS5	1066	2.63	2.85	933	1068	2.68	3.17	976	1067	2.68	3.15	1012
				OFC108R22-99MS6	1106	2.69	2.83	943	1108	2.74	3.13	989	1108	2.74	3.11	1026
				OFC113R22-09MS6	1134	2.59	2.63	950	1141	2.63	2.87	998	1140	2.63	2.86	1036
			L	OFC119R22-00MS7	1161	2.48	2.61	956	1170	2.53	2.84	1005	1169	2.53	2.83	1044
				OFC126R22-11MS8	1247	2.45	2.81	974	1262	2.49	3.06	1026	1261	2.49	3.05	1067
				OFC079R22-66ML1	778	2.88	2.91	831	766	3.01	3.37	856	766	3.00	3.35	881
				OFC084R22-76ML2	834	2.90	2.89	854	825	3.01	3.32	884	825	3.00	3.30	911
				OFC089R22-77ML2	885	2.90	2.91	874	875	3.00	3.32	906	875	2.99	3.30	935
				OFC093R22-87ML3	931	2.82	2.90	890	926	2.90	3.29	927	926	2.90	3.27	958
				OFC096R22-87ML5	958	2.88	2.93	900	955	2.95	3.32	938	955	2.95	3.30	970
				OFC098R22-88ML3	977	2.75	2.91	906	972	2.81	3.29	944	972	2.81	3.27	977
				OFC101R22-88ML5	1007	2.80	2.95	915	1003	2.86	3.32	955	1003	2.86	3.30	989
				OFC105R22-99ML4	1074	2.65	2.87	935	1075	2.70	3.19	979	1075	2.69	3.17	1015
				OFC109R22-99ML5	1111	2.70	2.91	944	1114	2.75	3.23	990	1113	2.75	3.21	1028
				OFC114R22-09ML5	1140	2.60	2.69	951	1148	2.64	2.94	1000	1147	2.64	2.93	1038
				OFC120R22-00ML6	1169	2.50	2.63	958	1179	2.54	2.86	1007	1177	2.54	2.85	1047
				OFC127R22-11ML7	NA	NA	NA	NA	1270	2.50	3.07	1028	1268	2.50	3.06	1069

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Coil Regular Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
R	22	H	S	OFC078R22-66HS1	771	2.87	2.82	828	759	3.00	3.26	853	759	3.00	3.23	878
				OFC084R22-76HS2	822	2.85	2.77	849	813	2.96	3.18	878	813	2.95	3.15	905
				OFC089R22-77HS2	867	2.81	2.77	867	857	2.91	3.16	898	857	2.90	3.14	927
				OFC093R22-87HS4	919	2.81	2.89	886	914	2.88	3.28	922	914	2.88	3.26	953
				OFC096R22-87HS6	947	2.87	2.83	896	943	2.94	3.20	933	943	2.94	3.18	965
				OFC097R22-88HS4	969	2.80	2.95	903	964	2.86	3.34	941	964	2.86	3.32	974
				OFC100R22-88HS6	1001	2.86	2.91	914	997	2.92	3.28	953	997	2.92	3.26	987
				OFC104R22-99HS5	1069	2.70	2.92	933	1069	2.76	3.25	977	1069	2.75	3.23	1013
				OFC108R22-99HS6	1109	2.77	2.89	944	1111	2.82	3.20	990	1111	2.82	3.19	1027
			L	OFC079R22-66HL1	775	2.88	2.83	830	763	3.01	3.27	855	763	3.01	3.25	880
				OFC084R22-76HL2	826	2.86	2.79	851	817	2.97	3.19	881	818	2.97	3.17	908
				OFC090R22-77HL2	873	2.83	2.79	869	863	2.92	3.17	901	863	2.92	3.15	930
				OFC093R22-87HL3	924	2.82	2.90	888	919	2.89	3.30	924	919	2.89	3.28	955
				OFC096R22-87HL5	952	2.87	2.93	897	947	2.95	3.33	935	947	2.95	3.31	967
				OFC098R22-88HL3	975	2.81	2.97	905	970	2.88	3.36	943	970	2.87	3.34	976
				OFC101R22-88HL5	1006	2.87	3.00	915	1002	2.93	3.39	955	1002	2.93	3.37	989
				OFC105R22-99HL4	1077	2.72	2.93	935	1077	2.77	3.27	979	1077	2.77	3.25	1016
				OFC109R22-99HL5	1115	2.78	2.97	945	1117	2.83	3.31	991	1117	2.83	3.29	1029

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Coil Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
X	16	M	S	OFC073X16-66MS1	722	2.63	2.82	549	716	2.71	3.15	536	715	2.70	3.13	532
				OFC078X16-76MS2	769	2.61	2.80	559	763	2.69	3.10	546	761	2.67	3.08	541
				OFC083X16-77MS2	812	2.59	2.82	568	NA	NA	NA	NA	NA	NA	NA	NA
			L	OFC074X16-66ML1	725	2.64	2.83	550	720	2.72	3.16	537	718	2.71	3.14	533
				OFC079X16-76ML2	772	2.62	2.81	560	766	2.70	3.11	547	764	2.68	3.10	542
				OFC083X16-77ML2	816	2.60	2.83	569	NA	NA	NA	NA	NA	NA	NA	NA
		H	S	OFC073X16-66HS1	720	2.64	2.75	549	715	2.73	3.07	536	714	2.71	3.05	532
				OFC078X16-76HS2	764	2.59	2.71	558	758	2.67	3.00	545	756	2.65	2.98	540
				OFC083X16-77HS2	804	2.53	2.71	566	798	2.60	2.98	553	795	2.58	2.97	548
			L	OFC074X16-66HL1	724	2.65	2.76	550	719	2.74	3.08	537	717	2.72	3.06	533
				OFC079X16-76HL2	768	2.60	2.72	559	762	2.67	3.01	546	760	2.66	2.99	541
				OFC083X16-77HL2	808	2.54	2.72	567	801	2.60	2.99	553	799	2.59	2.98	548

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Coil Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
X	18	M	S	OFC075X18-66MS1	736	2.71	2.85	613	731	2.83	3.23	599	730	2.81	3.21	594
				OFC080X18-76MS2	785	2.70	2.83	625	780	2.81	3.18	610	778	2.79	3.16	605
				OFC084X18-77MS2	830	2.69	2.85	635	824	2.77	3.18	620	822	2.76	3.16	615
				OFC088X18-87MS4	872	2.58	2.84	644	866	2.66	3.14	628	864	2.64	3.13	623
				OFC090X18-87MS6	895	2.62	2.77	649	NA	NA	NA	NA	NA	NA	NA	NA
			L	OFC075X18-66ML1	739	2.72	2.86	614	735	2.84	3.25	600	733	2.82	3.23	595
				OFC080X18-76ML2	789	2.72	2.84	626	784	2.82	3.19	611	782	2.80	3.18	606
				OFC085X18-77ML2	835	2.70	2.86	636	829	2.79	3.20	621	827	2.77	3.18	615
				OFC089X18-87ML3	876	2.59	2.85	645	870	2.66	3.16	629	867	2.65	3.14	624
				OFC091X18-87ML5	899	2.63	2.88	649	NA	NA	NA	NA	NA	NA	NA	NA
		H	S	OFC075X18-66HS1	734	2.73	2.78	612	730	2.84	3.14	599	728	2.83	3.12	594
				OFC080X18-76HS2	779	2.68	2.73	623	774	2.78	3.07	609	773	2.77	3.05	604
				OFC084X18-77HS2	821	2.62	2.73	633	815	2.71	3.05	618	813	2.70	3.03	613
				OFC088X18-87HS4	868	2.58	2.84	643	862	2.66	3.16	627	859	2.64	3.14	622
				OFC091X18-87HS6	890	2.63	2.77	648	884	2.70	3.06	632	881	2.68	3.04	626
				OFC092X18-88HS4	914	2.54	2.89	652	907	2.60	3.20	636	904	2.59	3.18	631
				OFC095X18-88HS6	940	2.59	2.83	657	932	2.65	3.12	641	930	2.63	3.10	635
			L	OFC075X18-66HL1	738	2.73	2.79	613	733	2.85	3.16	599	732	2.83	3.14	595
				OFC080X18-76HL2	784	2.69	2.74	624	778	2.79	3.08	610	777	2.78	3.06	605
				OFC085X18-77HL2	825	2.64	2.74	634	820	2.72	3.06	619	818	2.71	3.04	614
				OFC089X18-87HL3	872	2.59	2.85	644	865	2.66	3.17	628	863	2.65	3.15	623
				OFC091X18-87HL5	894	2.63	2.88	649	887	2.71	3.20	632	885	2.69	3.18	627
				OFC093X18-88HL3	918	2.55	2.90	653	910	2.61	3.22	637	908	2.59	3.20	631
				OFC095X18-88HL5	944	2.59	2.93	658	936	2.65	3.24	641	934	2.64	3.22	636

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (2) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.
 (3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Coil Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔTs	Nomenclature	Duty (kW)	AC Fans			Duty (kW)	EC Fans			Duty (kW)	HA EC Fans		
						EER	ESEER	3RW		EER	ESEER	3RW		EER	ESEER	3RW
X	20	M	S	OFC076X20-66MS1	747	2.77	2.86	675	743	2.91	3.30	660	741	2.90	3.27	655
				OFC081X20-76MS2	797	2.77	2.85	689	793	2.89	3.24	673	791	2.88	3.22	667
				OFC085X20-77MS2	844	2.76	2.86	700	838	2.87	3.24	684	837	2.85	3.22	678
				OFC089X20-87MS4	888	2.66	2.86	711	882	2.75	3.21	694	880	2.74	3.19	688
				OFC092X20-87MS6	912	2.70	2.80	716	906	2.80	3.12	699	903	2.78	3.10	693
				OFC093X20-88MS4	931	2.56	2.86	721	925	2.64	3.20	703	922	2.62	3.18	697
				OFC096X20-88MS6	958	2.61	2.81	726	951	2.68	3.12	708	949	2.67	3.11	702
			L	OFC076X20-66ML1	750	2.78	2.88	676	746	2.92	3.31	661	745	2.91	3.29	656
				OFC081X20-76ML2	802	2.78	2.86	690	797	2.91	3.26	674	795	2.89	3.24	669
				OFC086X20-77ML2	849	2.77	2.88	702	844	2.88	3.26	685	842	2.87	3.24	680
				OFC090X20-87ML3	892	2.67	2.87	712	886	2.76	3.22	695	884	2.75	3.20	689
				OFC092X20-87ML5	916	2.71	2.90	717	910	2.81	3.25	700	907	2.79	3.23	694
				OFC094X20-88ML3	936	2.57	2.87	722	929	2.65	3.21	704	927	2.63	3.19	698
				OFC096X20-88ML5	962	2.61	2.90	727	955	2.69	3.24	709	NA	NA	NA	NA
		H	S	OFC076X20-66HS1	745	2.78	2.79	674	741	2.92	3.20	659	740	2.91	3.18	654
				OFC081X20-76HS2	791	2.74	2.75	687	787	2.87	3.12	671	785	2.85	3.10	666
				OFC086X20-77HS2	834	2.69	2.74	698	829	2.80	3.10	682	827	2.79	3.08	676
				OFC090X20-87HS4	882	2.66	2.86	710	877	2.75	3.22	693	875	2.74	3.20	687
				OFC092X20-87HS6	906	2.70	2.79	715	900	2.80	3.12	698	898	2.78	3.10	692
				OFC093X20-88HS4	930	2.62	2.91	720	924	2.71	3.27	703	922	2.69	3.25	697
				OFC096X20-88HS6	957	2.67	2.86	726	951	2.75	3.19	708	948	2.74	3.17	702
				OFC100X20-99HS5	1018	2.49	2.86	738	1010	2.55	3.16	720	1007	2.53	3.15	713
				OFC103X20-99HS6	1055	2.54	2.82	745	1047	2.60	3.10	726	1044	2.58	3.09	719
			L	OFC076X20-66HL1	748	2.79	2.80	675	744	2.93	3.22	660	743	2.92	3.19	655
				OFC081X20-76HL2	796	2.75	2.76	688	791	2.88	3.13	672	790	2.86	3.11	667
				OFC086X20-77HL2	839	2.70	2.76	699	834	2.81	3.12	683	832	2.80	3.10	677
				OFC090X20-87HL3	887	2.67	2.87	711	881	2.76	3.23	694	879	2.75	3.21	688
				OFC092X20-87HL5	910	2.71	2.90	716	904	2.81	3.26	699	902	2.79	3.24	693
				OFC094X20-88HL3	935	2.64	2.93	722	929	2.72	3.28	704	926	2.70	3.26	698
				OFC097X20-88HL5	962	2.68	2.96	727	955	2.76	3.31	709	953	2.75	3.29	703
				OFC101X20-99HL4	1025	2.50	2.88	739	1016	2.55	3.18	721	1013	2.54	3.16	714
				OFC104X20-99HL6	1059	2.55	2.91	746	1051	2.60	3.21	726	1048	2.59	3.19	720

(1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.

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(3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.

(4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.

(5) 3RW is the full free cooling potential at 3°C

3 Row Free Cooling Coil Extra Quiet

Noise Variant	No. Fans	Water Temp	ΔT_s	Nomenclature	AC Fans				EC Fans				HA EC Fans			
					Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW	Duty (kW)	EER	ESEER	3RW
X	22	M	S	OFC076X22-66MS1	755	2.81	2.87	735	752	2.97	3.35	719	751	2.96	3.32	714
				OFC082X22-76MS2	807	2.81	2.85	751	803	2.96	3.29	734	801	2.95	3.27	728
				OFC086X22-77MS2	855	2.80	2.87	764	850	2.94	3.29	747	848	2.93	3.27	741
				OFC090X22-87MS4	899	2.71	2.87	776	894	2.83	3.26	758	892	2.82	3.24	752
				OFC093X22-87MS6	925	2.76	2.81	783	919	2.88	3.17	764	917	2.86	3.15	758
				OFC094X22-88MS4	943	2.62	2.87	787	938	2.72	3.25	768	936	2.70	3.23	762
				OFC097X22-88MS6	971	2.67	2.83	794	965	2.76	3.18	774	963	2.75	3.16	768
				OFC101X22-99MS5	1032	2.49	2.82	807	NA	NA	NA	NA	NA	NA	NA	NA
			L	OFC077X22-66ML1	759	2.82	2.89	736	755	2.98	3.36	720	754	2.97	3.33	715
				OFC082X22-76ML2	812	2.82	2.87	752	808	2.97	3.31	735	806	2.96	3.28	729
				OFC087X22-77ML2	860	2.82	2.89	766	856	2.95	3.31	748	854	2.94	3.28	742
				OFC091X22-87ML3	904	2.72	2.88	777	899	2.84	3.27	759	897	2.83	3.25	753
				OFC093X22-87ML5	929	2.77	2.91	784	923	2.88	3.30	765	921	2.87	3.28	758
				OFC095X22-88ML3	949	2.63	2.89	788	943	2.73	3.26	770	941	2.71	3.24	763
				OFC098X22-88ML5	976	2.68	2.92	795	970	2.77	3.29	775	968	2.76	3.27	769
				OFC102X22-99ML4	1038	2.50	2.83	808	NA	NA	NA	NA	NA	NA	NA	NA
		H	S	OFC076X22-66HS1	753	2.82	2.80	734	750	2.98	3.25	718	748	2.97	3.22	713
				OFC082X22-76HS2	801	2.78	2.75	749	797	2.93	3.16	732	795	2.92	3.14	726
				OFC087X22-77HS2	844	2.73	2.75	761	840	2.87	3.15	744	838	2.85	3.12	738
				OFC091X22-87HS4	894	2.71	2.86	775	889	2.83	3.27	757	887	2.81	3.24	750
				OFC093X22-87HS6	919	2.76	2.80	781	913	2.88	3.17	763	912	2.86	3.15	756
				OFC095X22-88HS4	942	2.68	2.93	787	937	2.79	3.32	768	935	2.77	3.30	762
				OFC098X22-88HS6	971	2.73	2.88	794	965	2.84	3.25	774	963	2.82	3.22	768
				OFC101X22-99HS5	1035	2.56	2.88	807	1028	2.64	3.22	787	1025	2.62	3.20	780
				OFC104X22-99HS7	1069	2.61	2.91	814	1062	2.69	3.25	794	1059	2.67	3.23	787
			L	OFC077X22-66HL1	757	2.83	2.81	735	753	2.99	3.26	719	752	2.98	3.24	714
				OFC082X22-76HL2	805	2.79	2.77	750	801	2.94	3.18	733	800	2.93	3.15	728
				OFC087X22-77HL2	849	2.75	2.76	763	845	2.88	3.16	745	843	2.87	3.14	739
				OFC091X22-87HL3	898	2.72	2.88	776	893	2.84	3.28	758	892	2.82	3.26	751
				OFC094X22-87HL5	923	2.77	2.91	782	918	2.88	3.31	764	916	2.87	3.29	757
				OFC095X22-88HL3	948	2.70	2.94	788	942	2.80	3.33	769	940	2.79	3.31	763
				OFC098X22-88HL5	975	2.74	2.97	795	969	2.84	3.37	775	967	2.83	3.34	769
				OFC102X22-99HL4	1041	2.57	2.90	809	1034	2.65	3.24	789	1032	2.63	3.22	782
				OFC105X22-99HL6	1076	2.62	2.93	816	1069	2.70	3.27	795	1066	2.68	3.25	788

- (1) Duty (kW) based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
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 (3) EER based upon mechanical Cooling when the unit is configured with a 3 row free cooling coil.
 (4) ESEER based upon mechanical Cooling 12°C / 7°C 35°C Ambient.
 (5) 3RW is the full free cooling potential at 3°C

Standard Features	OFCxxxRxx-xxHSx	OFCxxxRxx-xxHLx	OFCxxxRxx-xxMSx	OFCxxxRxx-xxMLx	OFCxxxXxx-xxHSx	OFCxxxXxx-xxHLx	OFCxxxXxx-xxMSx	OFCxxxXxx-xxMLx
Refrigeration and Mechanical								
Compressors - Screw	●	●	●	●	●	●	●	●
Dual Maintainable Pressure Relief valve	●	●	●	●	●	●	●	●
Parallel Condenser Coils – Round tube plate fin	●	●	●	●	●	●	●	●
Large Surface Area Free Cooling Coil (2 Row)	●	●	●	●	●	●	●	●
800mm AC Axial Fans	●	●	●	●	●	●	●	●
Filter Driers with Replaceable Cores	●	●	●	●	●	●	●	●
Electronic Expansion Valves	●	●	●	●	●	●	●	●
High Efficiency Shell and Tube Evaporator	●	●	●	●	●	●	●	●
Large Diameter Stainless Steel Suction Pipes	●	●	●	●	●	●	●	●
Full Operating Charge of R134a	●	●	●	●	●	●	●	●
Acoustically Lined Compressor Enclosure					●	●	●	●
Liquid & Discharge Shut Off Valves	●	●	●	●	●	●	●	●
Liquid Line Sight Glasses	●	●	●	●	●	●	●	●
Discharge Muffler					●	●	●	●
Leak Detection on Circuits Containing >300kg of R134a	●	●	●	●	●	●	●	●
Base - Plain Galvanised Steel	●	●	●	●	●	●	●	●
Panels - Galvanised Sheet Steel with Epoxy Baked Powder Paint	●	●	●	●	●	●	●	●
Ability for High Water Temperatures	●	●			●	●		
Ability for Large Water Side ΔT's		●		●		●		●
Controls and Electrical								
AIRETronix Microprocessor Controller	●	●	●	●	●	●	●	●
Intelligent Head Pressure Control	●	●	●	●	●	●	●	●
HP/LP Transducers & Switches	●	●	●	●	●	●	●	●
Compressor Envelopes Built into Controller	●	●	●	●	●	●	●	●
Waterside								
Evaporator Immersion Heater	●	●	●	●	●	●	●	●
Evaporator Differential Pressure Control*	●	●	●	●	●	●	●	●
Trace heating	●	●	●	●	●	●	●	●
Water Filter	●	●	●	●	●	●	●	●
Grooved and Clamped Type Connections	●	●	●	●	●	●	●	●
Fans & Sheet Metal								
Dedicated Compressor Enclosure					●	●	●	●
Lifting Lugs	●	●	●	●	●	●	●	●

* Additional flow protection is required. A flow switch and or pump interlock must be used.

General Description

Standard Features

Construction

The base is fabricated from galvanised steel to ensure a rigid, durable and weatherproof construction.

Unit panels are manufactured from galvanised sheet steel coated with epoxy baked powder paint to provide a durable and weatherproof finish.

Standard unit colour is Light Grey (RAL 7035).

The compressors and evaporator are mounted on a rigid galvanised heavy-duty sub frame. Fully weatherproofed electrical panels are situated at one end of the unit.

Evaporator

Shell and tube heat exchangers constructed from a steel shell with internally enhanced copper tubes. Internal baffles in the water circuit optimise flow whilst keeping pressure drop to a minimum. The heat exchanger is insulated with closed cell polyurethane foam which is to Class O fire rating and the material is UV resistant.

Water inlet and outlet connections are of grooved type pipe and coupling assembly, optional flanged connections available on request, please consult Airedale.

An immersion heater and thermostat protect the evaporator against freeze up in ambient temperatures down to -20°C.

Connections for External Trace Heating (230V/500W available).

Free Cooling Coil

The OptiChill Free Cool chiller has been designed to provide the cooling load required whilst optimising energy efficiency **at all times** and as such will take advantage of free cooling whenever available. If the free cooling available cannot satisfy the required full cooling load, direct expansion cooling is used to supplement the output. The Free cool coil is manufactured from copper tube and aluminium fins.

Free Cooling Operation

In high ambient where free cooling is not available the fan speed modulates in the conventional manner to maintain an optimised head pressure. Free cooling is initiated wherever the outdoor ambient is 1°C less than the return water temperature.

In ambient temperatures where the free cooling coil is capable of satisfying the full cooling demand, the condenser fans are modulated to provide the desired duty. The condenser fans are capable of being modulated between 25-100% of maximum airflow to maintain the supply water temperature.

During periods where the condenser fan speed has been reduced to a minimum, the supply water temperature will then be controlled by the 3 way valve.

Water Connections

Water inlet and outlet connections are of a grooved and clamped type construction. The unit is supplied with a counter pipe and coupling assembly for a butt welding connection.

Evaporator Differential Pressure Sensor

Facilitates low flow limiting and pressure drop monitoring via the microprocessor. (Additional flow protection is required. See optional features)

Condenser

Large surface area coils ideally positioned to optimise airflow and heat transfer, manufactured from refrigeration quality copper tubes with mechanically bonded aluminium fins.

The copper tube is internally rifled for improved heat transfer.

Fan & Motor Assembly

AC Fan Motor

Sickle bladed fan assemblies with integral long bellmouth and fingerproof grille; incorporate external rotor AC motor technology, capable of highly accurate discreet speed control and discharges air vertically. The fans offer maximum airflow performance while keeping sound levels to a minimum.

Each fan is speed controllable and operates from a 3 phase electrical supply.

Energy efficient Electronically Commutated (EC) fans are also available.

Compressor

Twin screw semi hermetic compressors comprising:

- Electronic Protection Module featuring:
 - Motor, discharge gas and oil monitoring
 - Rotation direction protection
 - Phase failure protection
- Low current Star/Delta Start
- Internal pressure relief
- Discharge non return valve
- Oil separator
- Oil sight glass
- Oil heater
- Slide valve stepped capacity control
- Suction gas motor cooling

The compressors are mounted to the rigid galvanised heavy duty sub-frame with the use of vibration reducing isolation.

Liquid injection is not required under normal operating conditions, leading to an increase in cooling and efficiency

Closed transition Star/Delta compressor start is available as an optional extra; refer to **Design Features & Information**, on page 49 for further details.

Maintainable Dual Pressure Relief Valve

A 3-way dual shut-off valve assembly incorporating 2 relief valves per circuit allows the maintenance of individual pressure relief valves without the need for refrigerant evacuation.

Refrigeration

Each refrigeration circuit is supplied with the following:

- Full operating charge of R134a
- Electronic Expansion Valves (EEV)
- Discharge line ball valve
- Liquid line ball valve
- Large capacity filter drier with replaceable cores
- Liquid line sight glass
- Low pressure switch with Auto reset
- High pressure switch with manual reset
- Suction and liquid pressure transducers
- Discharge line mufflers (X Models)

General Description

Standard Features

Controls

As standard, the **AIRE**Tronix microprocessor controller can provide 8 stages of capacity control.

Optionally, the controller is designed to provide capabilities for;

- Building Management Systems (BMS)
- Sequencing (Master/Slave and Run/Standby)

to meet all your system requirements, **please specify at order**.

For further details, refer to Controls, on page 38.

Electrical

A weatherproof electrical power and controls panel is situated at the end of the unit and contains:

- Individual mains power compartments for each refrigeration circuit
- Separate door locking electrical isolation for each mains compartment
- Dedicated bus-bar chamber for connection of incoming 3-phase and earth mains power supply,
- Emergency Stop fitted to controls compartment door
- Separate, fully accessible, controls compartment, allowing adjustment of control set points whilst the unit is operational
- Circuit breakers for protection of all major unit components
- Phase rotation relay incorporating phase loss protection (compressor module)

refer to **Interconnecting Wiring**, on page 118

The electrical power and control panel are wired to the latest European standards and codes of practice.

Mains supply is 3 phase and a neutral is not required direct to unit busbar, refer to **Interconnecting Wiring**, on page 118.

A separate 230V permanent supply is required for the controls and safety features.

Electrical terminals for external evaporator pipework trace heating (230V/500W) are provided.

CAUTION



A fused and isolated electrical supply of the appropriate phase, frequency and voltage should be installed.

Electronic Expansion Valves (EEV)



Electronic expansion valves differ to the normal thermostatic expansion valves in their ability to maintain control of the suction superheat at reduced head pressures. This can lead to significant energy savings particularly at reduced loading and low ambient temperatures. Factory fitted, for full details refer to **Design Features & Information**, on page 48.

Head Pressure Control - Voltage Regulated

Electronic fan speed controllers are fitted which modulate the fan speed by means of voltage regulation, maintaining an optimised condensing pressure, allowing the system to operate in ambient temperatures as low as -20°C.

Head pressure can be set and monitored at the microprocessor display.

AIRETronix Controls

General description

The microprocessor controller offers powerful analogue and digital control to meet a wide range of monitoring and control features including a real time clock and Industry standard communication port and network connections.

The controller's inbuilt display is used for viewing the units operating status and making adjustments to control parameters by allowing the operator access to a series of display pages.

Also featured is a visual alarm and the facility to adjust and display control settings by local operator for information and control.

Display/Keypad



- 1 UP/DOWN KEYS - To change Adjustable Fields & Scrolls up & down available Menus
- 2 ENTER -Selects Menus & Moves Cursor to Adjustable Fields Green LED
- 3 ESC - Green LED lit when Operating Page displayed, Returns to Operating Page Screen when pressed
- 4 PROGRAM - Opens the Available Menus
- 5 ALARM - Red LED Indicates Alarm Present
- 6 4 ROW LCD DISPLAY
- 7 CURSOR (FLASHING) Top Left Position = "HOME" Indicates adjustable Fields

AIRETronix Controls

Temperature control

Airedale recognises that all chiller applications are different but the OptiChill is based upon Constant Supply Temperature.

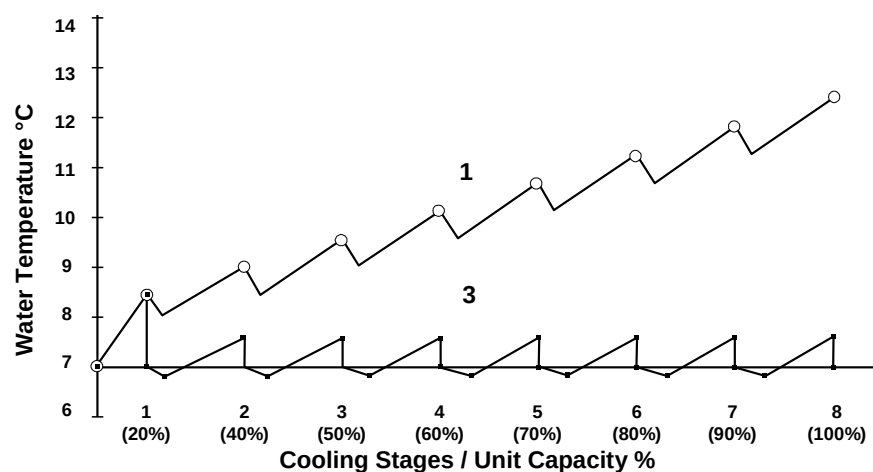
The onboard microprocessor has the capability of satisfying either control requirement as illustrated below. Using the Airedale Variable Supply Temperature control scheme, energy savings are available when compared with previous schemes and that of the Constant Supply Temperature application.

Variable Supply Temperature control schemes offer energy savings where the supply water temperature is not critical to its operation.

Selection of the best application control scheme can be made via a soft switch in the microprocessor during initial commissioning.

The microprocessor maintains the set supply Chilled Water temperature by sensing the return and supply water temperatures and ambient air temperature to adjust the compressor loading and water valve position as required.

Constant Supply Temperature Control



- 1 Return Water Temperature
- 2 Mean Value
- 3 Supply Water Temperature
- 4 Compressor Off

AIRETronix Controls

Monitoring	The microprocessor also monitors and displays the following measured parameters: • Supply Water Temperature • Return Water Temperature • Evaporator Differential Water Pressure • Suction Pressure of each circuit • Liquid Pressure of each circuit • Suction Temperature at each circuit • Superheat for each circuit • Discharge temperature of each circuit
Alarm handling	The controller logs and allows viewing of the last 100 conditions recorded in descending chronological order through the keypad display. The following conditions will be detected, triggering a visual display: Common for both circuits: • Low Supply Temperature • Emergency Stop • Water Flow • Volt Free Contact Alarm Indication Individual for each circuit: Individual alarms will isolate the affected circuit only. • Compressor Trip • Low Suction Pressure for each circuit • High Liquid Pressure for each circuit • Low Pressure Switch • Compressor Overload • High Compressor Discharge Temperature • Circuit 1 Isolator Status • Circuit 2 Isolator Status
Unit Remote ON/OFF	Disables/Enables the unit remotely.
Compressor Anti Cycle Control	Automatic via the Microprocessor.
Compressor Load Limit	Limits the condensing pressure by unloading the compressor. Limits the evaporating pressure by unloading at the minimum pressure setpoint, which is, adjustable depending on system glycol content.
Pump(s) Remote ON/OFF	Disables/Enables the pump(s) remotely.
Remote Setback Temperature Setpoint Switch	A setback setpoint for supply water temperature can be selected to suit summer/winter conditions or night setback.
Compressor Hours Run	Displays hours run of each compressor.
Password Protection	The control system integrity can be maintained by restricting access with a password PIN number. (as standard 4648)
CAUTION	 IMPORTANT: To change the PIN number; please contact Airedale at time of order with the preferred 4 digit number.

General Description

Optional Features	OFCxxxRxx-xxHSx	OFCxxxRxx-xxHLx	OFCxxxRxx-xxMSx	OFCxxxRxx-xxMLx	OFCxxxXxx-xxHSx	OFCxxxXxx-xxHLx	OFCxxxXxx-xxMSx	OFCxxxXxx-xxMLx
Economiser			●	●			●	●
Larger Surface Area Free Cooling Coil	●	●	●	●	●	●	●	●
Epoxy Coated Coils	●	●	●	●	●	●	●	●
Closed Transition	●	●	●	●	●	●	●	●
Power Factor Correction	●	●	●	●	●	●	●	●
Power Monitoring	●	●	●	●	●	●	●	●
Backup Power for Safe Controls Shut Down on Power Fail (UPS)	●	●	●	●	●	●	●	●
Sequence Control Compatible	●	●	●	●	●	●	●	●
Network Interface Card	●	●	●	●	●	●	●	●
Remote Setpoint Adjustment (0.10V/4-20mA)	●	●	●	●	●	●	●	●
Single Head Pump, 2 Sizes including inverter option	●	●	●	●	●	●	●	●
Run/Standby Pump, 2 Sizes including inverter option	●	●	●	●	●	●	●	●
Pump Interlock*	●	●	●	●	●	●	●	●
Flow Switch*	●	●	●	●	●	●	●	●
Dosing Pots	●	●	●	●	●	●	●	●
Condenser Fan Discharge Plenum - 2 Heights	●	●	●	●	●	●	●	●
Coil Guards	●	●	●	●	●	●	●	●
Anti-Vibration Mounts (Spring & Pad Type)	●	●	●	●	●	●	●	●
Control Panel Rain Hood with inbuilt light	●	●	●	●	●	●	●	●

*At least one additional flow proving device on top of the pressure differential sensor is required to validate warranty.

Optional Extras

Chiller Sequence Manager



For the efficient temperature and capacity operation of multiple units on a single site, the sequence manager will permit interlinked operation of the complete system thereby providing optimum temperature control and minimum power consumption.

Up to 8 units can be sequenced.

Included within this package is a site visit by Airedale Control Specialists to set up multiple unit sequence control.

The chiller sequence manager is supplied as a separate control panel to be mounted remotely indoors, such as a plant room.

Energy Manager



Analysis of system energy consumption can be monitored via a dedicated LCD display. Unit parameters can be adjusted via the unit microprocessor control to affect energy usage in line with the system need.

General Description

Optional Extras

Pump - AC Motor - Fixed Speed

A factory fitted in line single or run/standby pump package is available in a standard or larger external head, ***please specify at order.***

Flow can be proved via the microprocessor display.

Factory fitted and supplied as standard complete with:

- flow switch (option)
- isolating valves
- inlet strainer
- electrical switchgear

Pump - Inverter Driven - Variable Speed for Constant Water Flow



A factory fitted in line single or run/standby pump is available in a standard or larger external head, ***please specify at order.***

Flow is varied via an electronic flow meter, depending on system requirements.

Adjustment and monitoring is via the microprocessor display.

Factory fitted and supplied complete with:

- electronic flow monitoring system
- flow switch (option)
- isolating valves
- inlet strainer
- electrical switchgear

Corrosion Resistant Coated Coils

In atmospheres where high corrosion is anticipated a corrosion resistant coating is applied to the aluminium fins of either phenolic or epoxy, dependent upon size.

Coil Guards

Guards can be fitted to each of the outer coils to protect against damage.

Electronically Commutated (EC) Fans



Each fan incorporates on board electronics with AC/DC Conversion and inverter driven DC motor control to offer unparalleled high efficiency levels combined with smooth stepless speed control and quiet operation.

Sickle blades reduce air turbulence to minimise sound levels and power consumption whilst maximising performance.

The long bellmouth design provides improved aerodynamics, up to 10% more air movement, and an extended vertical throw of air to reduce the chance of air re-circulation. As standard the enclosure is complete with an integral fingerproof grille.

The fans offer maximum airflow performance while keeping sound levels to a minimum.

For further details, please refer to ***Design Features & Information***, on page 46.

Economiser



Controlled by a dedicated EEV, the economiser optimises compressor performance at full and part load operation; refer to ***Design Features & Information***, on page 46 for further details.

3 Row Free Cooling Coil

A 3 row free cooling coil shall be available to enhance the full free cooling potential of the chiller.

Compressor Power Factor Correction

When applied to the motors of each compressor, the compressor power factor is controlled to a minimum operating value of 0.95 at the full operating capacity. This satisfies many supply authorities that may impose surcharges on equipment with power factor less than 0.95.

General Description

Optional Extras

Anti Vibration Mounts (Spring Type)	Spring vibration isolators can be supplied loose for on site fitting to the base frame of each unit. The isolators are suitable for fitting to structural steelwork providing the surface is level and of sufficient strength where a high level of vibration elimination is required.
Anti Vibration Mounts (Pad Type)	Pad vibration isolators can be supplied loose for on site fitting to the base frame of each unit. The isolators are suitable for fitting to structural steelwork providing the surface is level and of sufficient strength where a moderate degree of vibration elimination is required.
Discharge Air Plenum - Condenser Fan	Constructed from galvanised sheet steel coated with epoxy baked powder paint, this plenum directs discharge air vertically, thus limiting a degree of air re-circulation and provides acoustic reduction in the horizontal plane; factory fitted. For details please contact Airedale. Standard unit colour is Light Grey (RAL 7035).
Extended Discharge Air Plenum - Condenser Fan	Constructed from galvanised sheet steel coated with epoxy baked powder paint, this plenum directs discharge air vertically, thus limiting greatly air re-circulation and provides a degree of acoustic reduction in the horizontal plane; factory fitted. For details please contact Airedale. Standard unit colour is Light Grey (RAL 7035).
R134a Leak Detection System	A factory calibrated and fitted leak detection system, will raise an alarm when refrigerant gas is detected. Fitted within the unit compressor enclosure.
Closed Transition Star / Delta Compressor Start	Closed transition Star/Delta starting can be incorporated to avoid high transient changeover current peaks when the compressor motor is switched over from Star to Delta.
Flow Switch	Will protect the chiller against low water flow conditions. Despatched loose for on site fitment. (A 1" BSP socket is required in your pipework)
Pump Interlock	A pump interlock shall be fitted to ensure that the chiller cannot operate without water flow.
IMPORTANT	 IMPORTANT: The flow switch and or pump interlock must be fitted to the unit as well as the differential pressure switch. At least two forms of protection must be used. Differential pressure switch plus either flow switch or pump interlock.
Remote Setpoint Adjust	Allows the chilled water setpoint to be adjusted via an external 0-10V signal.
BMS Interface Card	Enables AIRE Tronix controlled chillers to be interfaced with most BMS, including Airedale's own pCOWeb, factory fitted, please contact Airedale. For further details, please refer to Controls, on page 44.

Optional Features

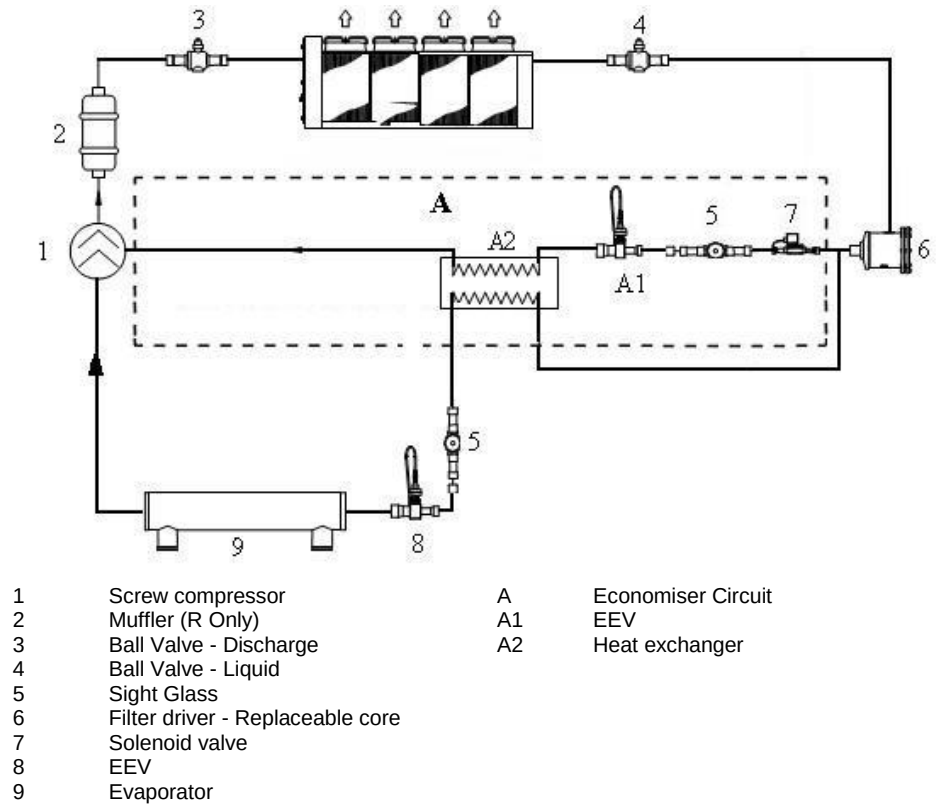
Pump(s) Hours Run	Displays hours run of each pump.
BMS Interface Card	Enables AIRETronix Controlled units to be interfaced with most BMS, factory fitted, please contact Airedale. A wide range of protocols can be accommodated through the use of interface devices. Available as a standard option are: ModBus / Jbus, Carel. For interfaces such as SNMP, LonWorks, Metasys and BACnet, please contact Airedale. Also available is Airedale's own supervisory plug-in BMS card pCOWeb. Based on Ethernet TCP/IP secure technology with SNMP features. Requires no proprietary cabling or monitoring software and supplied pre programmed with an IP address for ease of set up. <i>BMS system configuration by others.</i>
Commissioning	Airedale Service provides a full commissioning service carried out by professionally trained, industry experienced engineers. For a competitive quotation, please contact Airedale Customer Services.
Chillerguard®	In addition to commissioning, a 24 hour, 7 days a week on-call service is available throughout the year to UK mainland sites. This service will enable customers to contact a duty engineer outside normal working hours and receive assistance over the telephone. The duty engineer can, if necessary, attend site, usually within 24 hours or less. Full details will be forwarded on acceptance of the maintenance agreement.
UK Mainland	

Design Features & Information

Pipework Design

The unit refrigeration piping has been specifically designed to ensure the absolute minimum pressure loss. Sizing and layout of pipes is such that good oil circulation is achieved and neither performance nor efficiency is compromised.

Refrigeration Schematic



Design Features & Information

Economiser



The addition of an economiser circuit provides increased cooling and enhances EER, in full **and part load** operation.

Sub-cooled liquid is expanded using a dedicated EEV to 'medium' pressure and passed through one side of a plate heat exchanger. Through the other side flows the 'normal' pressure liquid. The result is that the subcooling of the liquid entering the system EEV is increased, which increases evaporator performance and simultaneously the suction pressure within the compressor body is lifted, improving compressor efficiency.

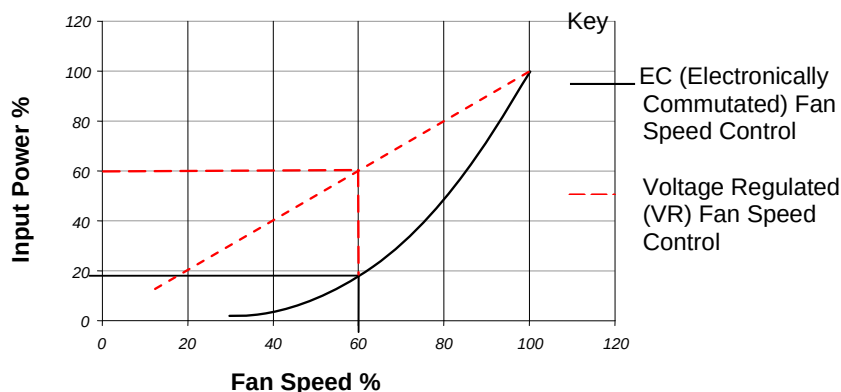
Electronically Commutated (EC) Fan Motor



EC motors are DC motors with integrated AC to DC conversion; this gives the flexibility of connecting to AC mains with the efficiency and simple speed control of a DC motor. The EC fan offers significant power reduction in comparison with equivalent AC fan at modulated fan speeds. The inbuilt EC fan control module allows for fan speed modulation from 15-100%, a standard AC fans modulating range is typically 40-100% of full fan speed.

The EC fan presents superior energy efficiency, at part load fan speeds compared to the equivalent AC fan motor, offering typical efficiency savings up to 70%.

Standard voltage regulated (VR) fan speed controllers offer a linear response. By comparison the EC fan is adjusted on demand via the unit microprocessor with precision, offering substantial energy savings. The following illustration shows a comparison of the typical power input required by each method.



Example: Fan speed of 60%
VR input power required 60%
EC input power required 18%

Design Features & Information

Pumps options

A variety of pump options to suit a wide range of applications is available:

Factory fitted in line as a single pump or run/standby configuration and available in standard and larger nominal external head pressures.

Factory fitted run/standby pumps have a shut off valve to the inlet and a non return valve to the outlet, enabling one pump to be maintained without interrupting chiller flow. Supplied with electrical switchgear and isolating valve as standard.

Run/standby pumps may be rotated manually to ensure even pump usage and prolong component life.

For performance curves, please refer to **Performance Data**, on page 98.

The pump motor speed can be supplied as fixed or variable:

The standard AC electric motors are 400VAC / 50Hz / 3PH and fixed speed.

Standard - AC Motor - Fixed Speed

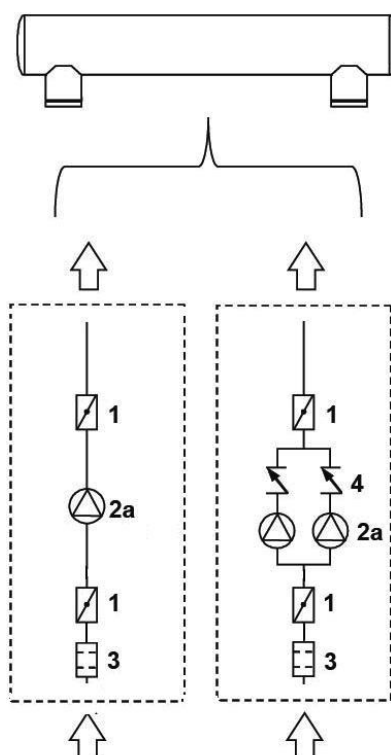
Inverter Driven Motor - Variable Speed for constant water flow

Flow is monitored by the onboard electronic flow meter to maintain the exact requirement of the application, thus saving pump input power whilst providing optimum chilled water flow control.

The option of an onboard variable speed drive combined with the electronic flow monitoring system offers an exceptional combination of simple commissioning and optimised efficiency.

Flow Schemes:

- A Single Head Pump - Standard AC Motor - Fixed Speed**
- B Run/Standby Pump - Standard AC Motor - Fixed Speed**



- 1 Shut off valve
- 2a Pump
- 2b Pump Inverter (mounted externally)
- 3 Liquid Strainer
- 4 Non Return Valve
- 5 Electronic Flow Meter
- 6 **AIRE**Tronix Microprocessor

Design Features & Information

Electronic expansion valves (EEV)

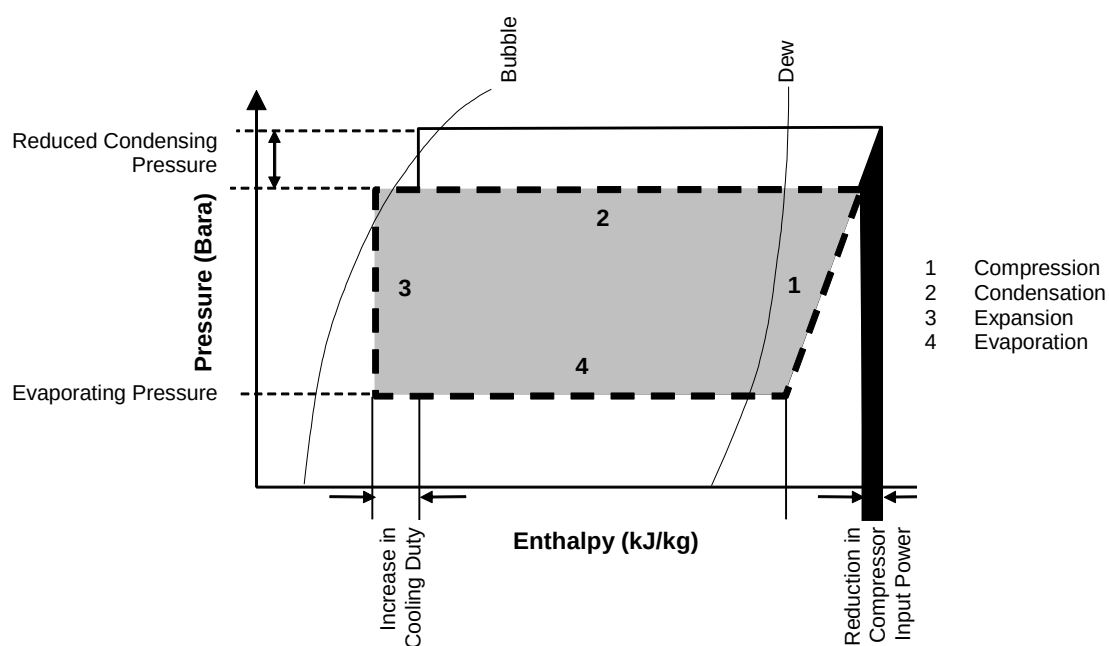
Thermostatic Expansion Valves (TEV)

Whilst offering versatile control at full design duty of the unit, TEVs do not automatically optimise themselves to all operating conditions. Therefore, if the unit is operating at 40% or 50% of full load, especially at a lower ambient temperature than that for which the valve was sized, the conventional TEV must have the design head pressure available to ensure good refrigerant control. Maintaining an artificially high condensing pressure is normal in conventional systems.

Electronic Expansion Valves (EEV)

Using an EEV allows for good refrigeration control whilst operating at part load and lower ambient conditions with a reduced condensing pressure. By fitting an EEV and adjusting the head pressure control setting **an increase in the system EER (Energy Efficiency Ratio) of up to 30% can typically be seen.** The Mollier diagram shown below helps to illustrate how this increase in efficiency is achieved.

EEV's differ to normal thermostatic expansion valves in their ability to maintain control of refrigerant flow and the suction superheat at reduced head pressures. The turn-down rate of a typical EEV is superior to that of its thermostatic equivalent, such that a reduced optimum condensing pressure can be maintained at low compressor load. However low the load is on the compressor, from zero to 100%, there will not be a problem with turn down, even down to 30% of the valves rated capacity.



Key

- Cooling Cycle @ 22°C ambient with a conventional TEV fitted.
- Cooling cycle @ 22°C ambient, demonstrating a typical EEV condensing temperature taking full advantage of lower ambient air temperatures (below 30°C).

Design Features & Information

Star/delta starting of 3 phase compressors

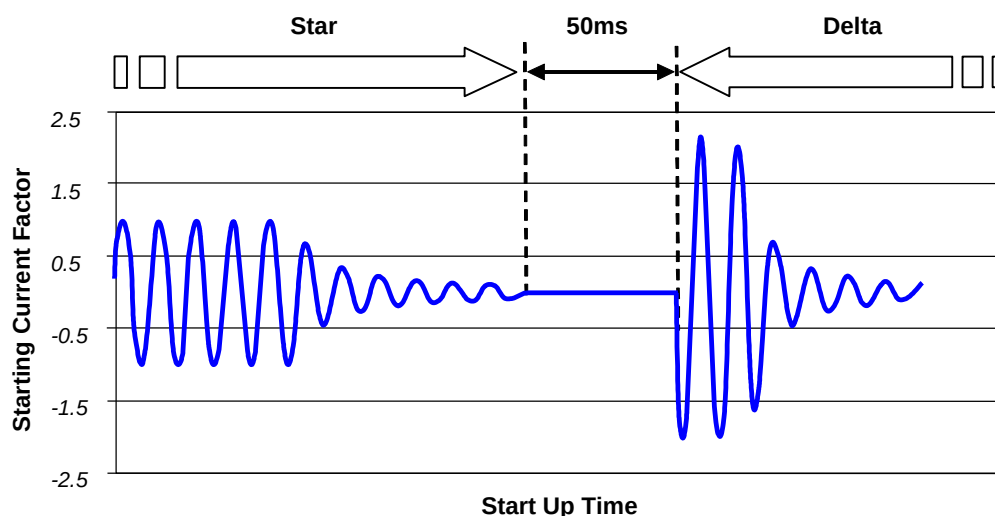
Open Transition Starting

In conventional open transition Star/Delta starting, a run up time of 3 seconds is required, however, a changeover delay of approximately 50ms is usually observed when switching over from Star to Delta motor connections.

During this switch from Star to Delta, the motor is completely disconnected from the supply and, depending on the counter torque, its speed decreases to some extent.

When the Delta step is switched on, it may be that the supply phase angle and the magnetic field in the motor are in opposition to each other, which will lead to transient phenomena causing high changeover current peaks.

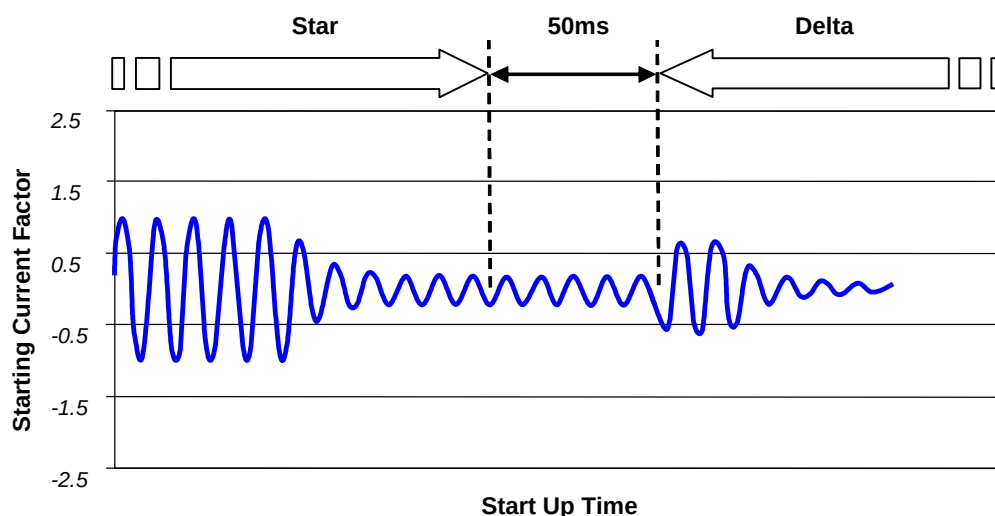
Typical current waveform for standard screw compressor Star Delta start:



Closed Transition Starting

In closed-transition Star/Delta starting, the motor is Delta-connected to the network via a transition contactor and resistors after the run-up in Star of 0.7 seconds switching over to the normal Delta step without disconnection from the supply. Thus no switching interval during which the motor is disconnected from the supply occurs, and high transient changeover current peaks are avoided.

Typical current waveform for closed transition start of a screw compressor:



Design Features & Information

Glycol

Ethylene Glycol

Specific Heat Capacity

Temperature °C	Glycol Percentage / Freezing Point					
	0% / 0°C	20% / -7.8°C	25% / -10.7°C	30% / -14.1°C	35% / -17.9°C	40% / -22.3°C
0	4.210	3.769	3.679	3.589	3.495	3.401
5	4.204	3.780	3.692	3.603	3.511	3.418
10	4.193	3.792	3.705	3.617	3.526	3.435
15	4.186	3.803	3.717	3.631	3.541	3.451
20	4.183	3.815	3.73	3.645	3.557	3.468
25	4.181	3.826	3.743	3.660	3.573	3.485
30	4.179	3.838	3.756	3.674	3.588	3.502
35	4.178	3.849	3.769	3.688	3.603	3.518
40	4.179	3.861	3.782	3.702	3.619	3.535
45	4.181	3.872	3.794	3.716	3.634	3.552

Density

Temperature °C	Glycol Percentage / Freezing Point					
	0% / °C	20% / -7.1°C	25% / -9.6°C	30% / -12.7°C	35% / -16.4°C	40% / -21.1°C
0	999.80	1035.67	1043.73	1051.78	1059.29	1066.80
5	999.90	1034.36	1042.35	1050.33	1057.77	1065.21
10	999.70	1032.94	1040.85	1048.76	1056.13	1063.49
15	999.00	1031.39	1039.23	1047.07	1054.36	1061.65
20	998.20	1029.72	1037.49	1045.25	1052.47	1059.68
25	997.00	1027.93	1035.63	1043.32	1050.46	1057.60
30	995.60	1026.02	1033.64	1041.26	1048.33	1055.39
35	994.00	1023.99	1031.54	1039.08	1046.08	1053.07
40	992.20	1021.83	1029.31	1036.78	1043.7	1050.62
45	990.20	1019.55	1026.96	1034.36	1041.21	1048.05

Propylene Glycol

Specific Heat Capacity

Temperature °C	Glycol Percentage / Freezing Point					
	0% / °C	20% / -7.1°C	25% / -9.6°C	30% / -12.7°C	35% / -16.4°C	40% / -21.1°C
0	4.210	3.929	3.861	3.793	3.715	3.636
5	4.204	3.940	3.874	3.807	3.729	3.652
10	4.193	3.951	3.886	3.820	3.745	3.669
15	4.186	3.962	3.898	3.834	3.760	3.685
20	4.183	3.973	3.911	3.848	3.775	3.702
25	4.181	3.983	3.923	3.862	3.790	3.718
30	4.179	3.994	3.935	3.875	3.805	3.735
35	4.178	4.005	3.947	3.889	3.820	3.751
40	4.179	4.016	3.96	3.903	3.836	3.768
45	4.181	4.027	3.972	3.917	3.851	3.784

Density

Temperature °C	Glycol Percentage / Freezing Point					
	0% / °C	20% / -7.1°C	25% / -9.6°C	30% / -12.7°C	35% / -16.4°C	40% / -21.1°C
0	999.80	1025.84	1031.04	1036.24	1040.68	1045.12
5	999.90	1024.32	1029.39	1034.46	1038.78	1043.09
10	999.70	1022.68	1027.62	1032.55	1036.75	1040.94
15	999.00	1020.91	1025.7	1030.51	1034.58	1038.65
20	998.20	1019.01	1023.68	1028.35	1032.30	1036.24
25	997.00	1016.99	1021.53	1026.06	1029.88	1033.70
30	995.60	1014.84	1019.24	1023.64	1027.34	1031.03
35	994.00	1012.56	1016.83	1021.09	1024.66	1028.23
40	992.20	1010.16	1014.29	1018.42	1021.86	1025.30
45	990.20	1007.64	1011.63	1015.62	1018.93	1022.24

Data based upon ASHRAE fundamentals 2001

CAUTION



Only use the SHC data when calculating fluid VOLUME. USE figure for 20% concentration when applying Glycol Correction Factors, refer to *Glycol Data*, on page 53.

Minimum system water volume

METHOD 1 (Preferred Method)

Where the system permanent heat load is known, the minimum water volume in litres V_{min} is:

$$V_{min} = \frac{\text{Water Flow Rate (litres/min)}}{\text{Minimum Compressor Run Time (min)} \times \text{Chiller Loading Factor}}$$

$$\text{Chiller Loading Factor} = \frac{\text{Minimum Turndown (kW)} \times 1.2}{\text{Permanent Heat Load}}$$

$$\text{Minimum Turndown} = 17.5\%$$

Example:

922.4kW Chiller at 35°C Ambient, 7/12°C Water, Model OFC095R20-87MS6 with a permanent load of 553kW

$$\text{Permanent Heat Load} = 553\text{kW}$$

$$\text{Minimum Turndown} = 17.5\%$$

$$V_{min} = \frac{922.4 \times 60}{4.186 \times 5} \times 5 \times \frac{922.4 \times 0.175}{553} \times 1.2 = 4631 \text{ Litres}$$

METHOD 2

Where the system permanent heat load is unknown:

$$V_{min} = \frac{\text{Water Flow Rate (litres/hour)}}{\text{Minimum Turndown} \times 1.2 \times \text{Minimum Compressor Run Time (Hours)}} + \text{Unit water volume}$$

$$\text{Minimum Turndown} = 17.5\%$$

Example:

922.4kW Chiller at 35°C Ambient, 7/12°C Water, Model OFC095R20-87MS6

$$\text{Minimum Turndown} = 0.175 (17.5\%)$$

$$V_{min} = \frac{922.4 \times 3600}{4.186 \times 5} \times 0.175 \times 1.2 \times \frac{5}{60} + 1657 = 4433 \text{ Litres}$$

Performance Data

Operating limits

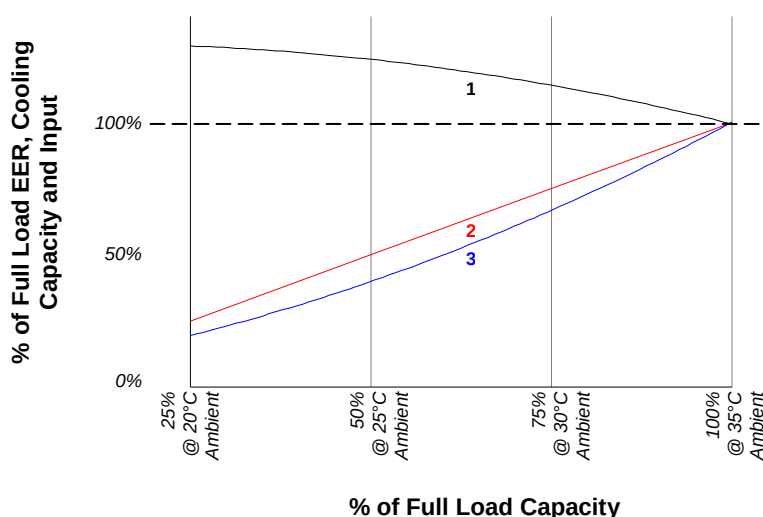
(For 100% Water)

Standard Unit	
Minimum Ambient Air DB °C	-20°C
Maximum Ambient Air DB °C at Full Load Operation	35°C
Maximum Ambient Air DB °C at Reduced Load Operation	40°C
Minimum Leaving Water Temperature °C	+5°C
Maximum Return Water Temperature °C	+25°C
Minimum / Maximum ΔT	4°K / 8°K

- 1 For conditions outside those quoted, please refer to Airedale.
- 2 For minimum ambient, it is assumed that adequate freeze protection is fitted.

Typical part load characteristics

The following graph gives a general indication of the effect of reduced load on the performance of the unit, for specific performance details, please contact Airedale.



Key
 1 = EER
 2 = Output kW
 3 = Input kW

ESEER Calculations

The quoted EER figures cover the performance of the unit ONLY at the standard rating conditions of 7/12°C water, 35°C ambient. The ESEER calculation method has been developed by Eurovent to give a single value that is a realistic indication of the efficiency of the chiller across the year round range of operation.

The ESEER value is calculated from the unit's performance at 20, 25, 30 and 35°C ambient temperatures for all loading stages, and with a fixed 7°C supply temperature. All calculations assume the system operates with 100% water.

$$\text{ESEER} = \text{A.EER}_{100\%} + \text{B.EER}_{75\%} + \text{C.EER}_{50\%} + \text{D.EER}_{25\%}$$

A, B, C and D are weighting factors 0.03, 0.33, 0.41 and 0.23.

Temperature	20°C	25°C	30°C	35°C
Capacity Requirement	25%	50%	75%	100%
Percentage of Total Hours	0.23	0.41	0.33	0.03

Performance Data

Glycol Data

For a given percentage of glycol in the system there are correction factors that need to be applied, the following tables can be used as a guide.

CAUTION



The source data must be at 20% Glycol for the correction factors to be valid.

This data is for a guide only. Please contact Airedale for accurate figures.

Where:

Output = (kW) Output (kW)

Compressor Input = (kW) Input (kW), (-) Minus TFP

TFP

(Total Fan Power) = (kW) Quantity of Fans to unit x Fan Motor Size.

Water Flow = (l/s) **ALWAYS USE 20% Glycol Specific heat Capacity of 3.9.**

ΔT = (°C) Difference of Entering Water and Leaving Water temperature

Ethylene Glycol Nominal Correction Factors

Glycol in System / Freezing Point °C	20% / -9°C	30% / -15°C	40% / -23°C
Cooling Duty	1.00	0.98	0.96
Input Power	1.00	0.98	0.97
Water Flow x by	1.00	1.02	1.05
Pressure Drop	1.00	1.15	1.31

Propylene Glycol Nominal Correction Factors

Glycol in System / Freezing Point °C	20% / -6°C	30% / -12°C	40% / -20°C
Cooling Duty	1.00	0.96	0.93
Input Power	1.00	0.98	0.97
Water Flow x by	1.00	0.98	0.98
Pressure Drop	1.00	1.13	1.25

Example OFC076R16-66HS1 operating at 10/15, 35°C Ambient, 30% Ethylene Glycol

Cooling kW	(752.2)	x 0.98	30% Ethylene Glycol =	737.2 kW
Input kW	(264.7)	x 0.98		259.4 kW
Flow l/s	(38.6)	(calculated: $\frac{\text{Output}}{\Delta T \times 3.9}$)		39.37 l/s
Pressure Drop kPa	(107.8)	x 1.15		124 kPa

Mechanical Data – Regular Quiet

	Notes	Units	1		2	
			OFC076R16-66HS1		OFC076R16-66MS1	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	752.2	747.5	754.5	749.7
Nom Input -Cooling Only		kW	264.7	267.3	266.1	268.8
EER	2		2.84	2.8	2.84	2.79
ESEER	7		2.84	2.8	2.92	2.87
SEER	7		2.82	2.78	2.9	2.85
Nominal Output - Free Cooling	5	kW	562.5	626.7	563.1	627.3
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1	0.7	-1.1	0.7
Cooling Duty - EC Fans	1	kW	750.8	747.7	753.7	750.5
Nom Input -Cooling Only		kW	258.8	262	260.5	263.7
EER	2		2.9	2.85	2.89	2.85
ESEER	7		3.16	3.11	3.25	3.19
SEER	7		3.11	3.06	3.19	3.14
Nominal Output - Free Cooling	5	kW	582.7	652.4	583.4	653.4
Ambient when Free Cooling = 100% Nominal DX	6	°C	-0.5	1.2	-0.5	1.2
Cooling Duty - High Airflow EC Fans	1	kW	750.5	747.3	753.4	750.1
Nom Input -Cooling Only		kW	259	262.1	260.6	263.8
EER	2		2.9	2.85	2.89	2.84
ESEER	7		3.14	3.09	3.23	3.18
SEER	7		3.1	3.05	3.18	3.12
Nominal Output - Free Cooling	5	kW	600.2	673.5	600.9	674.5
Ambient when Free Cooling = 100% Nominal DX	6	°C	0	1.7	0	1.7
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 9850			
Machine Weight		kg	11295	11360	11230	11305
Operating Weight	3	kg	12535	12710	12470	12655
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	72.8	72.8	72.8	72.8
Total Min. Water Flow		l/s	18.1	18.1	18.1	18.1
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	31.7	31.7	31.7	31.7
Maximum Airflow - High Airflow EC Fans		m³/s	84.9	81.2	84.9	81.2
Maximum Airflow - EC Fans		m³/s	79.2	75.6	79.2	75.6
Maximum Airflow - AC Fans		m³/s	72.5	68.9	72.5	68.9
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			16	16	16	16
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	154 + 155	154 + 155	154 + 155	154 + 155
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN150	DN150	DN150	DN150
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1240	1358	1240	1358
Max System Operating Pressure		Bar	3464	3575	3542	3654
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	40.5	40.2	40.6	40.3
			118.8	103.7	119.5	104.3

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

	Notes	Units	3		4	
			OFC081R16-76MS2		OFC081R16-76ML2	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	806.1	800.5	810.8	805.1
Nom Input -Cooling Only		kW	284.4	287.3	284.8	287.7
EER	2		2.83	2.79	2.85	2.8
ESEER	7		2.9	2.86	2.92	2.87
SEER	7		2.88	2.83	2.89	2.85
Nominal Output - Free Cooling	5	kW	574.2	642.1	575.2	643.4
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.8	0	-1.9	0
Cooling Duty - EC Fans	1	kW	810.1	806.7	814.9	811.6
Nom Input -Cooling Only		kW	280.5	284	280.9	284.4
EER	2		2.89	2.84	2.9	2.85
ESEER	7		3.2	3.15	3.22	3.16
SEER	7		3.15	3.1	3.17	3.11
Nominal Output - Free Cooling	5	kW	596.9	671.6	598	673.1
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.3	0.6	-1.3	0.5
Cooling Duty - High Airflow EC Fans	1	kW	809.3	805.9	814.2	810.7
Nom Input -Cooling Only		kW	280.5	284	280.9	284.4
EER	2		2.89	2.84	2.9	2.85
ESEER	7		3.19	3.13	3.2	3.15
SEER	7		3.14	3.08	3.15	3.1
Nominal Output - Free Cooling	5	kW	615.4	694.4	616.6	696
Ambient when Free Cooling = 100% Nominal DX	6	°C	-0.8	1.1	-0.8	1
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 9850			
Machine Weight		kg	11260	11315	11260	11315
Operating Weight	3	kg	12490	12665	12490	12665
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	72.8	72.8	58.1	58.1
Total Min. Water Flow		l/s	18.1	18.1	14.4	14.4
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	31.7	31.7	31.7	31.7
Maximum Airflow - High Airflow EC Fans		m³/s	84.9	81.2	84.9	81.2
Maximum Airflow - EC Fans		m³/s	79.2	75.6	79.2	75.6
Maximum Airflow - AC Fans		m³/s	72.5	68.9	72.5	68.9
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			16	16	16	16
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	156 + 157	156 + 157	156 + 157	156 + 157
Water Connections			Grooved Terminations			
Type			DN150			
Inlet / Outlet - Unit			DN150	DN150	DN150	DN150
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1228	1346	1228	1346
Max System Operating Pressure		Bar	3547	3657	3559	3669
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	43.4	43.1	43.6	43.3
			137.6	120.4	175.7	157.8

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

			5		6	
	Notes	Units	OFC087R16-77ML2		OFC077R18-66HS1	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	859.2	852.7	762.1	758
Nom Input -Cooling Only		kW	302.7	305.8	264.2	266.6
EER	2		2.84	2.79	2.88	2.84
ESEER	7		2.93	2.89	2.85	2.81
SEER	7		2.91	2.86	2.84	2.79
Nominal Output - Free Cooling	5	kW	584.9	656.2	625.1	696.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.6	-0.6	0.4	1.9
Cooling Duty - EC Fans	1	kW	863.7	860	755.9	752.9
Nom Input -Cooling Only		kW	298.7	302.3	255.3	258.3
EER	2		2.89	2.84	2.96	2.92
ESEER	7		3.22	3.16	3.22	3.17
SEER	7		3.17	3.11	3.17	3.12
Nominal Output - Free Cooling	5	kW	608.8	687.7	645.6	722.3
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2	0	0.9	2.5
Cooling Duty - High Airflow EC Fans	1	kW	862.9	859	755.9	752.8
Nom Input -Cooling Only		kW	298.7	302.3	255.5	258.5
EER	2		2.89	2.84	2.96	2.91
ESEER	7		3.21	3.15	3.2	3.15
SEER	7		3.15	3.1	3.15	3.1
Nominal Output - Free Cooling	5	kW	628.3	712	664.4	744.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.5	0.5	1.3	2.9
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 9850			
Machine Weight		kg	11275	11325	12495	12570
Operating Weight	3	kg	12505	12675	14025	14230
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	58.1	58.1	72.8	72.8
Total Min. Water Flow		l/s	14.4	14.4	18.1	18.1
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	31.7	31.7	35.6	35.6
Maximum Airflow - High Airflow EC Fans		m³/s	84.9	81.2	95.5	91.3
Maximum Airflow - EC Fans		m³/s	79.2	75.6	89.1	85.1
Maximum Airflow - AC Fans		m³/s	72.5	68.9	81.6	77.5
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			16	16	18	18
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	156 + 157	156 + 157	167 + 168	167 + 168
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN150	DN150	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1228	1346	1532	1665
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	46.2	45.9	41	40.8
Pressure Drop 20% Ethylene Glycol		kPa	195.4	175.5	95.5	78.8

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

	Notes	Units	7		8	
			OFC083R18-76ML2		OFC091R18-87HS4	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	822.7	817.8	906	900.3
Nom Input -Cooling Only		kW	283.8	286.5	324.9	328.2
EER	2		2.9	2.85	2.79	2.74
ESEER	7		2.93	2.88	2.92	2.88
SEER	7		2.91	2.86	2.89	2.85
Nominal Output - Free Cooling	5	kW	640.1	716.3	658.8	741
Ambient when Free Cooling = 100% Nominal DX	6	°C	-0.4	1.3	-1.5	0.4
Cooling Duty - EC Fans	1	kW	820.9	817.6	909.4	906.1
Nom Input -Cooling Only		kW	277	280.3	320.3	324.2
EER	2		2.96	2.92	2.84	2.8
ESEER	7		3.28	3.23	3.24	3.19
SEER	7		3.23	3.18	3.18	3.13
Nominal Output - Free Cooling	5	kW	663.4	746.3	685.4	776
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.2	1.9	-0.9	1
Cooling Duty - High Airflow EC Fans	1	kW	820.6	817.2	908.8	905.4
Nom Input -Cooling Only		kW	277.1	280.4	320.3	324.3
EER	2		2.96	2.91	2.84	2.79
ESEER	7		3.26	3.21	3.23	3.18
SEER	7		3.21	3.16	3.17	3.12
Nominal Output - Free Cooling	5	kW	683.5	771.1	707.3	803.5
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.6	2.3	-0.4	1.5
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 10850			
Machine Weight		kg	11620	11675	11770	11850
Operating Weight	3	kg	13980	14185	14175	14380
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	58.1	58.1	79.2	79.2
Total Min. Water Flow		l/s	14.4	14.4	19.7	19.7
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	35.6	35.6	35.6	35.6
Maximum Airflow - High Airflow EC Fans		m³/s	95.5	91.3	95.5	91.3
Maximum Airflow - EC Fans		m³/s	89.1	85.1	89.1	85.1
Maximum Airflow - AC Fans		m³/s	81.6	77.5	81.6	77.5
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			18	18	18	18
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	169 + 170	169 + 170	180 + 173	180 + 173
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1520	1653	1554	1687
Max System Operating Pressure		Bar	3851	3976	4571	4695
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	44.3	44	48.8	48.5
			150.1	130.4	129.2	106.4

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

	Notes	Units	9		10	
			OFC095R18-88MS4		OFC107R18-99HL5	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	957	950.8	1095.3	1086.7
Nom Input -Cooling Only		kW	353.8	357.6	402.3	407
EER	2		2.71	2.66	2.72	2.67
ESEER	7		2.93	2.89	3	2.95
SEER	7		2.9	2.85	2.96	2.91
Nominal Output - Free Cooling	5	kW	669.3	754.7	693.7	786.2
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.2	-0.1	-3.9	-1.6
Cooling Duty - EC Fans	1	kW	961.6	958.1	1108.3	1101.3
Nom Input -Cooling Only		kW	349	353.3	398.5	402.7
EER	2		2.75	2.71	2.78	2.74
ESEER	7		3.23	3.18	3.26	3.2
SEER	7		3.16	3.11	3.19	3.14
Nominal Output - Free Cooling	5	kW	697.2	791.7	725.5	828.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.5	0.5	-3.3	-0.9
Cooling Duty - High Airflow EC Fans	1	kW	960.8	957.1	1108.5	1103.9
Nom Input -Cooling Only		kW	349.1	353.4	399.1	404.1
EER	2		2.75	2.71	2.78	2.73
ESEER	7		3.22	3.16	3.25	3.19
SEER	7		3.15	3.1	3.18	3.13
Nominal Output - Free Cooling	5	kW	720.1	820.7	751.1	862.3
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1	1	-2.7	-0.4
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 10850		2600 x 2200 x 10850	
Machine Weight		kg	12620	12700	13170	13250
Operating Weight	3	kg	14170	14380	15060	15270
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	79.2	79.2	73.3	73.3
Total Min. Water Flow		l/s	19.7	19.7	18.1	18.1
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	35.6	35.6	35.6	35.6
Maximum Airflow - High Airflow EC Fans		m³/s	95.5	91.3	95.5	91.3
Maximum Airflow - EC Fans		m³/s	89.1	85.1	89.1	85.1
Maximum Airflow - AC Fans		m³/s	81.6	77.5	81.6	77.5
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			18	18	18	18
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	180 + 182	180 + 182	194 + 196	194 + 196
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1554	1687	1889	2022
Max System Operating Pressure		Bar	4592	4716	5336	5459
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	51.5	51.2	58.9	58.5
			142.8	117.6	214.4	181.6

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

	Notes	Units	11		12	
			OFC078R20-66ML1		OFC084R20-76HL2	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	775.8	772.1	824	819.9
Nom Input -Cooling Only		kW	266.6	268.9	285.4	287.8
EER	2		2.91	2.87	2.89	2.85
ESEER	7		2.95	2.91	2.83	2.78
SEER	7		2.93	2.89	2.81	2.77
Nominal Output - Free Cooling	5	kW	687.3	766.2	700.8	783.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	1.5	2.9	0.9	2.5
Cooling Duty - EC Fans	1	kW	766.3	763.2	817.7	814.6
Nom Input -Cooling Only		kW	254.4	257.3	275	278.2
EER	2		3.01	2.97	2.98	2.93
ESEER	7		3.38	3.33	3.2	3.15
SEER	7		3.32	3.27	3.16	3.11
Nominal Output - Free Cooling	5	kW	708.1	792	724.1	813.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	2	3.4	1.4	3
Cooling Duty - High Airflow EC Fans	1	kW	766.5	763.4	817.7	814.5
Nom Input -Cooling Only		kW	254.8	257.6	275.3	278.4
EER	2		3.01	2.96	2.97	2.93
ESEER	7		3.36	3.31	3.18	3.13
SEER	7		3.3	3.25	3.14	3.09
Nominal Output - Free Cooling	5	kW	728.2	816.2	745.4	839.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	2.4	3.8	1.8	3.4
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 11850			
Machine Weight		kg	13155	13225	13245	13315
Operating Weight	3	kg	14795	15015	14865	15085
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	58.1	58.1	58.1	58.1
Total Min. Water Flow		l/s	14.4	14.4	14.4	14.4
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	39.6	39.6	39.6	39.6
Maximum Airflow - High Airflow EC Fans		m³/s	106.1	101.5	106.1	101.5
Maximum Airflow - EC Fans		m³/s	99	94.5	99	94.5
Maximum Airflow - AC Fans		m³/s	90.7	86.1	90.7	86.1
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			20	20	20	20
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	180 + 181	180 + 181	182 + 183	182 + 183
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume		l	1635	1783	1624	1771
Minimum System Water Volume	4	l	3948	4089	3863	4003
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	41.8	41.6	44.3	44.1
Pressure Drop 20% Ethylene Glycol		kPa	134.7	115.5	154.7	133.1

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

	Notes	Units	13		14	
			OFC092R20-87MS4		OFC099R20-88HS6	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	922.4	917.3	997.9	991.9
Nom Input -Cooling Only		kW	326.5	329.5	347.5	350.9
EER	2		2.83	2.79	2.87	2.83
ESEER	7		2.93	2.89	2.95	2.91
SEER	7		2.91	2.86	2.93	2.88
Nominal Output - Free Cooling	5	kW	725.9	816.8	742.9	838.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	-0.2	1.5	-1.1	0.8
Cooling Duty - EC Fans	1	kW	921.1	917.9	996.9	993.1
Nom Input -Cooling Only		kW	319.2	323	340.5	344.5
EER	2		2.89	2.85	2.93	2.88
ESEER	7		3.29	3.23	3.28	3.23
SEER	7		3.23	3.18	3.23	3.18
Nominal Output - Free Cooling	5	kW	753.4	852.8	772.3	877.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.3	2.1	-0.5	1.4
Cooling Duty - High Airflow EC Fans	1	kW	920.8	917.4	996.5	992.5
Nom Input -Cooling Only		kW	319.3	323.1	340.6	344.7
EER	2		2.89	2.85	2.93	2.88
ESEER	7		3.27	3.22	3.27	3.22
SEER	7		3.21	3.16	3.21	3.16
Nominal Output - Free Cooling	5	kW	777	882.4	797.5	909.8
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.8	2.5	0	1.9
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 11850		2600 x 2200 x 11850	
Machine Weight		kg	13280	13365	13850	13935
Operating Weight	3	kg	14940	15165	15840	16075
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	79.2	79.2	91.9	91.9
Total Min. Water Flow		l/s	19.7	19.7	22.8	22.8
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	39.6	39.6	39.6	39.6
Maximum Airflow - High Airflow EC Fans		m³/s	106.1	101.5	106.1	101.5
Maximum Airflow - EC Fans		m³/s	99	94.5	99	94.5
Maximum Airflow - AC Fans		m³/s	90.7	86.1	90.7	86.1
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			20	20	20	20
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	194 + 186	194 + 186	205 + 207	205 + 207
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1657	1805	1992	2140
Max System Operating Pressure		Bar	4694	4833	5013	5152
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	49.6	49.4	53.7	53.4
			138.6	112.7	143.7	114

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

			15		16	
	Notes	Units	OFC108R20-99HL6		OFC078R22-66MS1	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	1110.7	1103	777.7	774.4
Nom Input -Cooling Only		kW	399.1	403.3	267.8	269.9
EER	2		2.78	2.73	2.9	2.87
ESEER	7		3.01	2.96	2.94	2.9
SEER	7		2.97	2.93	2.92	2.88
Nominal Output - Free Cooling	5	kW	764.6	866.9	744.5	829.5
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.4	-0.3	2.5	3.8
Cooling Duty - EC Fans	1	kW	1117.3	1113	765.2	762.3
Nom Input -Cooling Only		kW	394.2	398.9	251.7	254.5
EER	2		2.83	2.79	3.04	3
ESEER	7		3.31	3.26	3.41	3.36
SEER	7		3.24	3.19	3.35	3.3
Nominal Output - Free Cooling	5	kW	798	911.7	765	854.5
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.8	0.4	3	4.3
Cooling Duty - High Airflow EC Fans	1	kW	1116.3	1111.8	765.6	762.7
Nom Input -Cooling Only		kW	394.3	399	252.2	254.9
EER	2		2.83	2.79	3.04	2.99
ESEER	7		3.3	3.24	3.38	3.33
SEER	7		3.23	3.18	3.32	3.27
Nominal Output - Free Cooling	5	kW	825.3	947	786	879.5
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.2	0.9	3.3	4.6
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 11850			
Machine Weight		kg	13910			
Operating Weight	3	kg	15890			
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	91.9	91.9	72.8	72.8
Total Min. Water Flow		l/s	22.8	22.8	18.1	18.1
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	39.6	39.6	43.6	43.6
Maximum Airflow - High Airflow EC Fans		m³/s	106.1	101.5	116.7	111.6
Maximum Airflow - EC Fans		m³/s	99	94.5	108.9	104
Maximum Airflow - AC Fans		m³/s	90.7	86.1	99.7	94.8
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			20	20	22	22
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	208 + 209	208 + 209	191 + 192	191 + 192
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1977	2125	1756	1919
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	59.8	59.4	41.9	41.7
Pressure Drop 20% Ethylene Glycol		kPa	177.6	141.5	106.6	85.8

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

	Notes	Units	17		18	
			OFC084R22-76MS2		OFC093R22-87HS4	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	833	829.2	923.1	918.8
Nom Input -Cooling Only		kW	285.1	287.4	324.7	327.5
EER	2		2.92	2.88	2.84	2.81
ESEER	7		2.92	2.88	2.93	2.89
SEER	7		2.91	2.86	2.9	2.86
Nominal Output - Free Cooling	5	kW	762	852.3	787.8	886.1
Ambient when Free Cooling = 100% Nominal DX	6	°C	1.9	3.3	0.9	2.6
Cooling Duty - EC Fans	1	kW	823	819.9	917	913.9
Nom Input -Cooling Only		kW	271	274	313.6	317.2
EER	2		3.04	2.99	2.92	2.88
ESEER	7		3.36	3.31	3.33	3.28
SEER	7		3.3	3.25	3.27	3.22
Nominal Output - Free Cooling	5	kW	785.3	881.7	815.3	921.8
Ambient when Free Cooling = 100% Nominal DX	6	°C	2.4	3.8	1.5	3.1
Cooling Duty - High Airflow EC Fans	1	kW	823.3	820.1	917	913.8
Nom Input -Cooling Only		kW	271.4	274.4	313.9	317.4
EER	2		3.03	2.99	2.92	2.88
ESEER	7		3.33	3.28	3.31	3.26
SEER	7		3.28	3.23	3.25	3.2
Nominal Output - Free Cooling	5	kW	807.8	909	840.2	952.7
Ambient when Free Cooling = 100% Nominal DX	6	°C	2.8	4.2	1.9	3.5
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 12850		2600 x 2200 x 12850	
Machine Weight		kg	13935	14020	14100	14185
Operating Weight	3	kg	15685	15930	15880	16125
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	72.8	72.8	79.2	79.2
Total Min. Water Flow		l/s	18.1	18.1	19.7	19.7
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	43.6	43.6	43.6	43.6
Maximum Airflow - High Airflow EC Fans		m³/s	116.7	111.6	116.7	111.6
Maximum Airflow - EC Fans		m³/s	108.9	104	108.9	104
Maximum Airflow - AC Fans		m³/s	99.7	94.8	99.7	94.8
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			22	22	22	22
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	193 + 194	193 + 194	205 + 197	205 + 197
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1744	1907	1778	1940
Max System Operating Pressure		Bar	4060	4214	4791	4945
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	44.8	44.6	49.7	49.4
			123.7	100.1	144	115.7

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data – Regular Quiet Continued

	Notes	Units	19		20	
			OFC097R22-88MS4		OFC109R22-99HL5	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	975.5	970.9	1121.7	1115.1
Nom Input -Cooling Only		kW	351.8	355	397.8	401.6
EER	2		2.77	2.73	2.82	2.78
ESEER	7		2.94	2.9	3.02	2.97
SEER	7		2.91	2.87	2.98	2.94
Nominal Output - Free Cooling	5	kW	801.3	903.8	833.7	945.4
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.4	2.1	-1.1	0.8
Cooling Duty - EC Fans	1	kW	969.5	966.3	1121.5	1117.3
Nom Input -Cooling Only		kW	341.5	345.5	390.4	394.9
EER	2		2.84	2.8	2.87	2.83
ESEER	7		3.32	3.27	3.36	3.31
SEER	7		3.25	3.21	3.29	3.24
Nominal Output - Free Cooling	5	kW	830.5	942	868	991.2
Ambient when Free Cooling = 100% Nominal DX	6	°C	1	2.7	-0.5	1.5
Cooling Duty - High Airflow EC Fans	1	kW	969.7	966.3	1121	1116.7
Nom Input -Cooling Only		kW	341.9	345.7	390.5	395.1
EER	2		2.84	2.79	2.87	2.83
ESEER	7		3.3	3.25	3.34	3.29
SEER	7		3.24	3.19	3.28	3.23
Nominal Output - Free Cooling	5	kW	856.7	974.8	897.2	1028.7
Ambient when Free Cooling = 100% Nominal DX	6	°C	1.4	3.1	0	2
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 12850			
Machine Weight		kg	14100	14190	14640	14735
Operating Weight	3	kg	15880	16130	16750	17005
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	79.2	79.2	73.3	73.3
Total Min. Water Flow		l/s	19.7	19.7	18.1	18.1
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	43.6	43.6	43.6	43.6
Maximum Airflow - High Airflow EC Fans		m³/s	116.7	111.6	116.7	111.6
Maximum Airflow - EC Fans		m³/s	108.9	104	108.9	104
Maximum Airflow - AC Fans		m³/s	99.7	94.8	99.7	94.8
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			22	22	22	22
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	1080	1080	1080	1080
Maximum Speed - EC Fans		RPM	980	980	980	980
Maximum Speed - AC Fans		RPM	900	900	900	900
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	205 + 207	205 + 207	217 + 218	217 + 218
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1778	1940	2114	2276
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	52.5	52.3	60.4	60
Pressure Drop 20% Ethylene Glycol		kPa	159.2	128	238.2	197.7

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient.

Mechanical Data - Extra Quiet

			21		22	
	Notes	Units	OFC073X16-66HS1		OFC074X16-66HL1	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	726.8	720.5	730.1	723.7
Nom Input -Cooling Only		kW	269.3	272.6	269.7	273
EER	2		2.7	2.64	2.71	2.65
ESEER	7		2.8	2.75	2.81	2.76
SEER	7		2.77	2.72	2.79	2.74
Nominal Output - Free Cooling	5	kW	498.9	548.9	499.5	549.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.5	-0.7	-2.5	-0.8
Cooling Duty - EC Fans	1	kW	722	715.3	725.3	718.6
Nom Input -Cooling Only		kW	258.6	262	259.1	262.5
EER	2		2.79	2.73	2.8	2.74
ESEER	7		3.13	3.07	3.14	3.08
SEER	7		3.07	3.02	3.09	3.03
Nominal Output - Free Cooling	5	kW	488.8	536.2	489.3	536.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.7	-1	-2.8	-1.1
Cooling Duty - High Airflow EC Fans	1	kW	720.5	713.5	723.7	716.7
Nom Input -Cooling Only		kW	259.4	262.9	259.8	263.3
EER	2		2.78	2.71	2.79	2.72
ESEER	7		3.11	3.05	3.12	3.06
SEER	7		3.05	3	3.07	3.01
Nominal Output - Free Cooling	5	kW	485.5	531.9	486	532.5
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.8	-1.1	-2.9	-1.1
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 9850			
Machine Weight		kg	11295	11360	11295	11360
Operating Weight	3	kg	12535	12710	12535	12710
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	72.8	72.8	58.1	58.1
Total Min. Water Flow		l/s	18.1	18.1	14.4	14.4
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	31.7	31.7	31.7	31.7
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	55.3	52.6	55.3	52.6
Maximum Airflow - AC Fans		m³/s	54.1	50.7	54.1	50.7
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			16	16	16	16
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	154 + 155	154 + 155	154 + 155	154 + 155
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN150	DN150	DN150	DN150
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1240	1358	1240	1358
Max System Operating Pressure		Bar	3464	3575	3478	3588
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	39.1	38.8	39.3	39
			111.5	97	141.5	126.4

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data - Extra Quiet Continued

			23		24	
	Notes	Units	OFC078X16-76HS2		OFC079X16-76HL2	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	770.9	763.9	774.9	767.6
Nom Input -Cooling Only		kW	291.5	295.1	291.9	295.6
EER	2		2.65	2.59	2.66	2.6
ESEER	7		2.75	2.71	2.77	2.72
SEER	7		2.73	2.68	2.74	2.69
Nominal Output - Free Cooling	5	kW	506.2	558.1	506.8	558.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	-3.3	-1.4	-3.3	-1.5
Cooling Duty - EC Fans	1	kW	765.6	758.2	769.4	761.7
Nom Input -Cooling Only		kW	281.1	284.8	281.6	285.3
EER	2		2.73	2.67	2.74	2.67
ESEER	7		3.05	3	3.06	3.01
SEER	7		3	2.95	3.01	2.96
Nominal Output - Free Cooling	5	kW	495.6	544.9	496.2	545.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	-3.5	-1.7	-3.6	-1.7
Cooling Duty - High Airflow EC Fans	1	kW	763.9	756.2	767.6	759.6
Nom Input -Cooling Only		kW	281.9	285.7	282.4	286.2
EER	2		2.71	2.65	2.72	2.66
ESEER	7		3.03	2.98	3.05	2.99
SEER	7		2.98	2.93	2.99	2.94
Nominal Output - Free Cooling	5	kW	492.2	540.4	492.7	541
Ambient when Free Cooling = 100% Nominal DX	6	°C	-3.6	-1.8	-3.7	-1.8
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 9850			
Machine Weight		kg	11315	11385	11315	11385
Operating Weight	3	kg	12545	12735	12545	12735
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	72.8	72.8	58.1	58.1
Total Min. Water Flow		l/s	18.1	18.1	14.4	14.4
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	31.7	31.7	31.7	31.7
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	55.3	52.6	55.3	52.6
Maximum Airflow - AC Fans		m³/s	54.1	50.7	54.1	50.7
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			16	16	16	16
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	156 + 157	156 + 157	156 + 157	156 + 157
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN150	DN150	DN150	DN150
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1228	1346	1228	1346
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	41.5	41.1	41.7	41.3
Pressure Drop 20% Ethylene Glycol		kPa	126.6	110.3	161.7	144.6

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data - Extra Quiet Continued

			25		26	
	Notes	Units	OFC083X16-77HL2		OFC075X18-66MS1	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	815.8	807.8	741.8	736.1
Nom Input -Cooling Only		kW	313.8	317.8	268.1	271.1
EER	2		2.6	2.54	2.77	2.71
ESEER	7		2.76	2.72	2.9	2.85
SEER	7		2.73	2.69	2.87	2.82
Nominal Output - Free Cooling	5	kW	513.1	567	556.7	612.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.1	-2.1	-1	0.6
Cooling Duty - EC Fans	1	kW	809.7	801.2	737.5	731.5
Nom Input -Cooling Only		kW	303.7	307.8	255.6	258.7
EER	2		2.67	2.6	2.89	2.83
ESEER	7		3.05	2.99	3.29	3.23
SEER	7		2.99	2.94	3.23	3.17
Nominal Output - Free Cooling	5	kW	502.2	553.2	545.6	599.1
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.3	-2.4	-1.2	0.4
Cooling Duty - High Airflow EC Fans	1	kW	807.7	798.9	736.1	729.8
Nom Input -Cooling Only		kW	304.6	308.8	256.3	259.4
EER	2		2.65	2.59	2.87	2.81
ESEER	7		3.03	2.98	3.27	3.21
SEER	7		2.98	2.92	3.21	3.15
Nominal Output - Free Cooling	5	kW	498.6	548.4	542	594.3
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.4	-2.5	-1.3	0.3
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 9850		2600 x 2200 x 10850	
Machine Weight		kg	11325	11395	12435	12510
Operating Weight	3	kg	12555	12745	13965	14170
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	58.1	58.1	72.8	72.8
Total Min. Water Flow		l/s	14.4	14.4	18.1	18.1
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	31.7	31.7	35.6	35.6
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	55.3	52.6	62.2	59.2
Maximum Airflow - AC Fans		m³/s	54.1	50.7	60.9	57.1
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			16	16	18	18
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	156 + 157	156 + 157	167 + 168	167 + 168
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN150	DN150	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1228	1346	1532	1665
Max System Operating Pressure		Bar	3469	3580	3834	3960
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	43.9	43.5	39.9	39.6
			177.7	158.8	91	74.8

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data - Extra Quiet Continued

	Notes	Units	27		28	
			OFC080X18-76ML2		OFC088X18-87HS4	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	795.9	789.2	875.4	867.7
Nom Input -Cooling Only		kW	287.4	290.7	331.9	336.1
EER	2		2.77	2.72	2.64	2.58
ESEER	7		2.89	2.84	2.89	2.84
SEER	7		2.87	2.82	2.85	2.8
Nominal Output - Free Cooling	5	kW	566.8	625.7	580.4	643.1
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.8	-0.1	-3.1	-1.2
Cooling Duty - EC Fans	1	kW	790.8	783.7	869.6	861.5
Nom Input -Cooling Only		kW	275.1	278.5	320.3	324.6
EER	2		2.88	2.82	2.72	2.66
ESEER	7		3.25	3.19	3.21	3.16
SEER	7		3.2	3.14	3.15	3.09
Nominal Output - Free Cooling	5	kW	555.1	611.1	568	627.4
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.1	-0.4	-3.4	-1.5
Cooling Duty - High Airflow EC Fans	1	kW	789.2	781.8	867.7	859.3
Nom Input -Cooling Only		kW	275.8	279.3	321.2	325.6
EER	2		2.86	2.8	2.7	2.64
ESEER	7		3.23	3.18	3.2	3.14
SEER	7		3.18	3.12	3.13	3.07
Nominal Output - Free Cooling	5	kW	551.3	606	563.9	622
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.2	-0.5	-3.5	-1.6
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 10850			
Machine Weight		kg	11620	11675	11770	11850
Operating Weight	3	kg	13980	14185	14175	14380
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	58.1	58.1	79.2	79.2
Total Min. Water Flow		l/s	14.4	14.4	19.7	19.7
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	35.6	35.6	35.6	35.6
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	62.2	59.2	62.2	59.2
Maximum Airflow - AC Fans		m³/s	60.9	57.1	60.9	57.1
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			18	18	18	18
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	169 + 170	169 + 170	180 + 173	180 + 173
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1520	1653	1554	1687
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	42.8	42.5	47.1	46.7
Pressure Drop 20% Ethylene Glycol		kPa	141.3	122.3	121.4	99.5

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data - Extra Quiet Continued

			29		30	
	Notes	Units	OFC095X18-88HS6		OFC102X18-99HL6	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	948.9	939.8	1048.5	1037
Nom Input -Cooling Only		kW	358.6	363.4	416.8	422.9
EER	2		2.65	2.59	2.52	2.45
ESEER	7		2.89	2.83	2.93	2.87
SEER	7		2.85	2.8	2.87	2.82
Nominal Output - Free Cooling	5	kW	591.6	657.3	605	673.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.2	-2.2	-5.8	-3.5
Cooling Duty - EC Fans	1	kW	942.1	932.4	1039.8	1027.6
Nom Input -Cooling Only		kW	347.4	352.4	406.6	412.9
EER	2		2.71	2.65	2.56	2.49
ESEER	7		3.18	3.12	3.2	3.13
SEER	7		3.12	3.06	3.12	3.05
Nominal Output - Free Cooling	5	kW	578.6	640.8	591.2	656.3
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.5	-2.5	-6.1	-3.8
Cooling Duty - High Airflow EC Fans	1	kW	939.8	929.7	1036.9	1024.2
Nom Input -Cooling Only		kW	348.5	353.6	408.1	414.5
EER	2		2.7	2.63	2.54	2.47
ESEER	7		3.16	3.1	3.18	3.12
SEER	7		3.1	3.04	3.1	3.04
Nominal Output - Free Cooling	5	kW	574.4	635.1	586.7	650.3
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.6	-2.6	-6.2	-3.9
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 10850		2600 x 2200 x 10850	
Machine Weight		kg	13130	13195	13200	13285
Operating Weight	3	kg	15020	15225	15070	15285
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	91.9	91.9	91.9	91.9
Total Min. Water Flow		l/s	22.8	22.8	22.8	22.8
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m ²	35.6	35.6	35.6	35.6
Maximum Airflow - High Airflow EC Fans		m ³ /s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m ³ /s	62.2	59.2	62.2	59.2
Maximum Airflow - AC Fans		m ³ /s	60.9	57.1	60.9	57.1
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			18	18	18	18
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	197 + 196	197 + 196	199 + 198	199 + 198
Water Connections			Grooved Terminations			
Type			DN200	DN200	DN200	DN200
Inlet / Outlet - Unit			0.5	0.5	0.5	0.5
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume			1889	2022	1874	2007
Minimum System Water Volume	4	l	4912	5035	5314	5437
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	51.1	50.6	56.4	55.8
Pressure Drop 20% Ethylene Glycol		kPa	125.7	100.5	153.5	123.1

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient.

Mechanical Data - Extra Quiet Continued

			31		32	
	Notes	Units	OFC076X20-66HS1		OFC081X20-76ML2	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	749.8	744.9	807.9	802
Nom Input -Cooling Only		kW	265.1	267.9	285.4	288.5
EER	2		2.83	2.78	2.83	2.78
ESEER	7		2.83	2.79	2.91	2.86
SEER	7		2.82	2.77	2.88	2.84
Nominal Output - Free Cooling	5	kW	612.1	674.1	624.4	689.7
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.3	1.7	-0.5	1
Cooling Duty - EC Fans	1	kW	746.1	740.9	803.5	797.2
Nom Input -Cooling Only		kW	250.8	253.6	271.3	274.4
EER	2		2.97	2.92	2.96	2.91
ESEER	7		3.25	3.2	3.31	3.26
SEER	7		3.2	3.15	3.26	3.2
Nominal Output - Free Cooling	5	kW	600.2	659.4	611.8	674
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.1	1.5	-0.8	0.8
Cooling Duty - High Airflow EC Fans	1	kW	744.9	739.5	802	795.5
Nom Input -Cooling Only		kW	251.4	254.2	272	275.1
EER	2		2.96	2.91	2.95	2.89
ESEER	7		3.23	3.18	3.29	3.24
SEER	7		3.18	3.13	3.24	3.18
Nominal Output - Free Cooling	5	kW	596.4	654.3	607.7	668.5
Ambient when Free Cooling = 100% Nominal DX	6	°C	0	1.4	-0.8	0.7
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 11850			
Machine Weight		kg	13210	13290	13185	13265
Operating Weight	3	kg	14850	15080	14805	15035
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	72.8	72.8	58.1	58.1
Total Min. Water Flow		l/s	18.1	18.1	14.4	14.4
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	39.6	39.6	39.6	39.6
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	69.1	65.7	69.1	65.7
Maximum Airflow - AC Fans		m³/s	67.7	63.4	67.7	63.4
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			20	20	20	20
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	180 + 181	180 + 181	182 + 183	182 + 183
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1635	1783	1624	1771
Max System Operating Pressure		Bar	3858	3998	3953	4092
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	40.4	40.1	43.5	43.2
			96.3	78.2	149.2	127.9

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data - Extra Quiet Continued

			33		34	
	Notes	Units	OFC092X20-87HS6		OFC097X20-88HL5	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	913.8	906.4	969.7	961.6
Nom Input -Cooling Only		kW	331.6	335.4	354.6	358.9
EER	2		2.76	2.7	2.73	2.68
ESEER	7		2.84	2.79	3.01	2.96
SEER	7		2.81	2.77	2.96	2.91
Nominal Output - Free Cooling	5	kW	644.5	715.2	653.9	727.1
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2	-0.2	-2.8	-0.9
Cooling Duty - EC Fans	1	kW	908.3	900.4	963.6	954.9
Nom Input -Cooling Only		kW	318.1	322	341.5	345.9
EER	2		2.86	2.8	2.82	2.76
ESEER	7		3.18	3.12	3.37	3.31
SEER	7		3.13	3.07	3.3	3.24
Nominal Output - Free Cooling	5	kW	630.8	697.9	639.8	709.2
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.3	-0.5	-3.1	-1.2
Cooling Duty - High Airflow EC Fans	1	kW	906.4	898.2	961.5	952.5
Nom Input -Cooling Only		kW	318.9	322.9	342.5	347
EER	2		2.84	2.78	2.81	2.75
ESEER	7		3.16	3.1	3.35	3.29
SEER	7		3.11	3.06	3.28	3.22
Nominal Output - Free Cooling	5	kW	626.4	692	635.2	703
Ambient when Free Cooling = 100% Nominal DX	6	°C	-2.4	-0.6	-3.2	-1.3
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 11850		2600 x 2200 x 11850	
Machine Weight		kg	13780	13870	13850	13935
Operating Weight	3	kg	15780	16010	15840	16075
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	91.9	91.9	73.3	73.3
Total Min. Water Flow		l/s	22.8	22.8	18.1	18.1
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	39.6	39.6	39.6	39.6
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	69.1	65.7	69.1	65.7
Maximum Airflow - AC Fans		m³/s	67.7	63.4	67.7	63.4
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			20	20	20	20
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	205 + 198	205 + 198	205 + 207	205 + 207
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1992	2140	1992	2140
Max System Operating Pressure		Bar	5013	5152	5026	5164
Flow Rate 20% Ethylene Glycol		l/s	10	10	10	10
Pressure Drop 20% Ethylene Glycol		kPa	49.2	48.8	52.2	51.8
			122.4	96.6	177.9	148.6

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient.

Mechanical Data - Extra Quiet Continued

			35		36	
	Notes	Units	OFC104X20-99HL6		OFC076X22-66HS1	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	1069.3	1059.1	757.4	753.1
Nom Input -Cooling Only		kW	410	415.5	264.9	267.4
EER	2		2.61	2.55	2.86	2.82
ESEER	7		2.96	2.91	2.84	2.8
SEER	7		2.91	2.86	2.82	2.78
Nominal Output - Free Cooling	5	kW	668.7	745.6	666.3	734
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.2	-2	1.4	2.7
Cooling Duty - EC Fans	1	kW	1061.6	1050.7	754.2	749.5
Nom Input -Cooling Only		kW	397.7	403.3	248.7	251.3
EER	2		2.67	2.6	3.03	2.98
ESEER	7		3.27	3.21	3.3	3.25
SEER	7		3.19	3.13	3.25	3.2
Nominal Output - Free Cooling	5	kW	653.7	726.4	653.7	718.4
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.5	-2.3	1.2	2.5
Cooling Duty - High Airflow EC Fans	1	kW	1059	1047.7	753.1	748.3
Nom Input -Cooling Only		kW	399	404.7	249.3	251.8
EER	2		2.65	2.59	3.02	2.97
ESEER	7		3.25	3.19	3.27	3.22
SEER	7		3.18	3.12	3.22	3.17
Nominal Output - Free Cooling	5	kW	648.9	719.8	649.6	712.9
Ambient when Free Cooling = 100% Nominal DX	6	°C	-4.6	-2.5	1.1	2.4
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 11850			
Machine Weight		kg	13910	13985	13960	14055
Operating Weight	3	kg	15890	16115	15720	15975
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	91.9	91.9	72.8	72.8
Total Min. Water Flow		l/s	22.8	22.8	18.1	18.1
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	39.6	39.6	43.6	43.6
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	69.1	65.7	76	72.3
Maximum Airflow - AC Fans		m³/s	67.7	63.4	74.4	69.8
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			20	20	22	22
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	208 + 209	208 + 209	191 + 192	191 + 192
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1977	2125	1756	1919
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	57.5	57	40.8	40.5
Pressure Drop 20% Ethylene Glycol		kPa	165.7	131.3	101.7	81.6

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Mechanical Data - Extra Quiet Continued

			37		38	
	Notes	Units	OFC082X22-76ML2		OFC091X22-87HS4	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	817.1	811.9	899.6	893.6
Nom Input -Cooling Only		kW	284.7	287.5	326.6	330
EER	2		2.87	2.82	2.76	2.71
ESEER	7		2.91	2.87	2.91	2.86
SEER	7		2.89	2.85	2.88	2.83
Nominal Output - Free Cooling	5	kW	680.5	752	698.3	774.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.6	2	-0.5	1.2
Cooling Duty - EC Fans	1	kW	813.2	807.6	895.1	888.7
Nom Input -Cooling Only		kW	268.8	271.6	311.1	314.6
EER	2		3.03	2.97	2.88	2.83
ESEER	7		3.36	3.31	3.32	3.27
SEER	7		3.31	3.25	3.25	3.2
Nominal Output - Free Cooling	5	kW	667.1	735.2	684	756.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.4	1.8	-0.7	0.9
Cooling Duty - High Airflow EC Fans	1	kW	811.9	806.1	893.6	887
Nom Input -Cooling Only		kW	269.4	272.2	311.9	315.4
EER	2		3.01	2.96	2.87	2.81
ESEER	7		3.33	3.28	3.3	3.24
SEER	7		3.28	3.23	3.23	3.18
Nominal Output - Free Cooling	5	kW	662.7	729.4	679.3	750.3
Ambient when Free Cooling = 100% Nominal DX	6	°C	0.3	1.7	-0.8	0.8
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 12850		2600 x 2200 x 12850	
Machine Weight		kg	13935	14020	14100	14185
Operating Weight	3	kg	15685	15930	15880	16125
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	58.1	58.1	79.2	79.2
Total Min. Water Flow		l/s	14.4	14.4	19.7	19.7
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	43.6	43.6	43.6	43.6
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	76	72.3	76	72.3
Maximum Airflow - AC Fans		m³/s	74.4	69.8	74.4	69.8
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			22	22	22	22
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	193 + 194	193 + 194	205 + 197	205 + 197
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	1744	1907	1778	1940
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	44	43.7	48.4	48.1
Pressure Drop 20% Ethylene Glycol		kPa	156.5	132.9	137.4	110

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient.

Mechanical Data - Extra Quiet Continued

			39		40	
	Notes	Units	OFC093X22-87ML5		OFC105X22-99HL6	
			2 Row Free Cool	3 Row Free Cool	2 Row Free Cool	3 Row Free Cool
Cooling Duty - AC Fans	1	kW	935.7	928.8	1085.4	1076.2
Nom Input -Cooling Only		kW	332.8	336.4	405.5	410.5
EER	2		2.82	2.77	2.68	2.62
ESEER	7		2.95	2.91	2.98	2.93
SEER	7		2.93	2.88	2.93	2.89
Nominal Output - Free Cooling	5	kW	705.5	783.6	731.1	815.6
Ambient when Free Cooling = 100% Nominal DX	6	°C	-0.9	0.8	-2.8	-0.8
Cooling Duty - EC Fans	1	kW	930.5	923.2	1078.5	1068.8
Nom Input -Cooling Only		kW	317.5	321	391.2	396.3
EER	2		2.94	2.88	2.76	2.7
ESEER	7		3.36	3.3	3.33	3.27
SEER	7		3.3	3.24	3.25	3.2
Nominal Output - Free Cooling	5	kW	690.7	764.9	715.1	795.1
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.2	0.5	-3.1	-1.1
Cooling Duty - High Airflow EC Fans	1	kW	928.8	921.2	1076.2	1066.1
Nom Input -Cooling Only		kW	318.2	321.9	392.3	397.5
EER	2		2.93	2.87	2.74	2.68
ESEER	7		3.33	3.28	3.31	3.25
SEER	7		3.27	3.22	3.23	3.18
Nominal Output - Free Cooling	5	kW	685.9	758.4	709.8	788
Ambient when Free Cooling = 100% Nominal DX	6	°C	-1.2	0.4	-3.2	-1.2
Capacity Steps		%	20, 30, 40, 55, 65, 80, 90, 100			
Dimensions (H x W x L)		mm	2600 x 2200 x 12850			
Machine Weight		kg	14465	14560	14660	14755
Operating Weight	3	kg	16585	16840	16760	17015
Construction Material			Base: Plain Galvanised Steel, Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint, Light Grey (RAL 7035)			
Evaporator - Type			Shell and Tube			
Insulation			Class O / UV Stable			
Total Max. Water Flow		l/s	73.3	73.3	91.9	91.9
Total Min. Water Flow		l/s	18.1	18.1	22.8	22.8
Condenser - Type			Rifled Copper Tube / Aluminium Fin			
Face Area Total		m²	43.6	43.6	43.6	43.6
Maximum Airflow - High Airflow EC Fans		m³/s	N/A	N/A	N/A	N/A
Maximum Airflow - EC Fans		m³/s	76	72.3	76	72.3
Maximum Airflow - AC Fans		m³/s	74.4	69.8	74.4	69.8
Condenser Fan & Motor			Sickle Bladed Axial Fan			
Quantity			22	22	22	22
Diameter		mm	800	800	800	800
Maximum Speed - High Airflow EC Fans		RPM	N/A	N/A	N/A	N/A
Maximum Speed - EC Fans		RPM	700	700	700	700
Maximum Speed - AC Fans		RPM	700	700	700	700
Compressor - Type			Semi-Hermetic Twin Screw Compressor			
Quantity			2	2	2	2
Oil Charge Volume (Total)		l	35 + 35	35 + 35	35 + 35	35 + 35
Oil Type			BSE 170 Polyol Ester Oil			
Refrigerant - Control			Electronic Expansion Valve			
Refrigerant Pre-charged			R134a			
Charge (Total) CCT1 + CCT2		kg	217 + 210	217 + 210	219 + 220	219 + 220
Water Connections			Grooved Terminations			
Type						
Inlet / Outlet - Unit			DN200	DN200	DN200	DN200
Water Drain / Bleed - Evap		inch	0.5	0.5	0.5	0.5
Water System - Volume						
Minimum System Water Volume	4	l	2114	2276	2099	2261
Max System Operating Pressure		Bar	10	10	10	10
Flow Rate 20% Ethylene Glycol		l/s	50.4	50	58.4	57.9
Pressure Drop 20% Ethylene Glycol		kPa	172.1	142.3	177.2	138.8

(1) Based on units performance at 15/10°C return/supply temperatures, 35°C ambient, 20% Ethylene Glycol.

All performance data is supplied in accordance with BS EN 14511-1:2013

(2) EER = DX Cooling Output / (Compressor Input Power + Fan Input Power)

(3) Based on standard unit without options, operating weight includes refrigerant charge and water volume.

For unit weights with waterside options fitted please refer to Airedale.

(4) For minimum system water volume calculation, refer to Design Features & Information - Minimum System Water Volume Calculations.

(5) Nominal Free Cooling Output at 15/10°C return/supply temperatures, 3°C ambient, 20% Ethylene Glycol.

(6) Ambient temperature that Maximum Nominal DX Duty can be achieved using Free Cooling only.

(7) ESEER / SEER based upon unit operating at 12 / 7 °C return / supply temperature, 35°C ambient,

Electrical Data Regular Quiet

			1	2	3
	Notes	Units	OFC076R16-66HS1	OFC076R16-66MS1	OFC081R16-76MS2
Unit Data					
Nominal Run Amps (1)		A	447	429	454
Maximum Start Amps		A	844	685	714
Recommended Mains Fuse Size		A	560	560	560
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			16	16	16
Full Load Amps		A	4.3	4.3	4.3
Locked Rotor Amps		A	15	15	15
Motor Rating		kW	2	2	2
Condenser Fan - Per Fan (EC)					
Quantity			16	16	16
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			16	16	16
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	188.9 / 188.9	179.9 / 179.9	205.5 / 179.9
Motor Rating		kW	105.0 / 105.0	105.0 / 105.0	122.5 / 105.0
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	586 / 586	436 / 436	465 / 436
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	388	388	414
Maximum Start Amps		A	814	664	693
Compressor Nominal Run Amps		A	159.5 / 159.5	159.5 / 159.5	186.1 / 159.5
Recommended Mains Fuse Size		A	560	560	560
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	468	457	483
Recommended Mains Fuse Size		A	560	560	630
Pump Full Load Amps		A	21.2	28.5	28.5
Motor Rating		kW	11	15	15
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	475	464	489
Recommended Mains Fuse Size		A	560	560	630
Pump Full Load Amps		A	28.5	35	35
Motor Rating		kW	15	18.5	18.5
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	468	457	483
Recommended Mains Fuse Size		A	560	560	630
Pump Full Load Amps		A	21.2	28.5	28.5
Motor Rating		kW	11	15	15
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	475	464	489
Recommended Mains Fuse Size		A	560	560	630
Pump Full Load Amps		A	28.5	35	35
Motor Rating		kW	15	18.5	18.5

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Regular Quiet Continued

			4	5	6
	Notes	Units	OFC081R16-76ML2	OFC087R16-77ML2	OFC077R18-66HS1
Unit Data					
Nominal Run Amps (1)		A	454	480	455
Maximum Start Amps		A	714	739	852
Recommended Mains Fuse Size		A	560	630	560
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			16	16	18
Full Load Amps		A	4.3	4.3	4.3
Locked Rotor Amps		A	15	15	15
Motor Rating		kW	2	2	2
Condenser Fan - Per Fan (EC)					
Quantity			16	16	18
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			16	16	18
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	205.5 / 179.9	205.5 / 205.5	188.9 / 188.9
Motor Rating		kW	122.5 / 105.0	122.5 / 122.5	105.0 / 105.0
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	465 / 436	465 / 465	586 / 586
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	414	441	396
Maximum Start Amps		A	693	720	823
Compressor Nominal Run Amps		A	186.1 / 159.5	186.1 / 186.1	159.5 / 159.5
Recommended Mains Fuse Size		A	560	630	560
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	469	495	476
Recommended Mains Fuse Size		A	630	630	630
Pump Full Load Amps		A	14.8	14.8	21.2
Motor Rating		kW	7.5	7.5	11
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	483	508	484
Recommended Mains Fuse Size		A	630	630	630
Pump Full Load Amps		A	28.5	28.5	28.5
Motor Rating		kW	15	15	15
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	469	495	476
Recommended Mains Fuse Size		A	630	630	630
Pump Full Load Amps		A	14.8	14.8	21.2
Motor Rating		kW	7.5	7.5	11
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	483	508	484
Recommended Mains Fuse Size		A	630	630	630
Pump Full Load Amps		A	28.5	28.5	28.5
Motor Rating		kW	15	15	15

- (1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.
 (2) Starting amps refers to the Star (Y) connection only.

Electrical Data Regular Quiet Continued

			7	8	9
	Notes	Units	OFC083R18-76ML2	OFC091R18-87HS4	OFC095R18-88MS4
Unit Data					
Nominal Run Amps (1)		A	463	539	560
Maximum Start Amps		A	722	1099	905
Recommended Mains Fuse Size		A	560	670	670
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			18	18	18
Full Load Amps		A	4.3	4.3	4.3
Locked Rotor Amps		A	15	15	15
Motor Rating		kW	2	2	2
Condenser Fan - Per Fan (EC)					
Quantity			18	18	18
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			18	18	18
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	205.5 / 179.9	245.4 / 216.3	241.3 / 241.3
Motor Rating		kW	122.5 / 105.0	138.8 / 122.5	139.5 / 139.5
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	465 / 436	805 / 650	586 / 586
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	423	474	501
Maximum Start Amps		A	702	1069	875
Compressor Nominal Run Amps		A	186.1 / 159.5	210.9 / 186.1	211.9 / 211.9
Recommended Mains Fuse Size		A	560	670	670
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	478	568	595
Recommended Mains Fuse Size		A	630	710	710
Pump Full Load Amps		A	14.8	28.5	35
Motor Rating		kW	7.5	15	18.5
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	491	574	601
Recommended Mains Fuse Size		A	630	710	710
Pump Full Load Amps		A	28.5	35	41.5
Motor Rating		kW	15	18.5	22
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	478	568	595
Recommended Mains Fuse Size		A	630	710	710
Pump Full Load Amps		A	14.8	28.5	35
Motor Rating		kW	7.5	15	18.5
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	491	574	601
Recommended Mains Fuse Size		A	630	710	710
Pump Full Load Amps		A	28.5	35	41.5
Motor Rating		kW	15	18.5	22

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Regular Quiet Continued

			10	11	12
	Notes	Units	OFC107R18-99HL5	OFC078R20-66ML1	OFC084R20-76HL2
Unit Data					
Nominal Run Amps (1)		A	610	446	491
Maximum Start Amps		A	1149	702	925
Recommended Mains Fuse Size		A	750	560	630
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			18	20	20
Full Load Amps		A	4.3	4.3	4.3
Locked Rotor Amps		A	15	15	15
Motor Rating		kW	2	2	2
Condenser Fan - Per Fan (EC)					
Quantity			18	20	20
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			18	20	20
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	266.2 / 266.2	179.9 / 179.9	216.3 / 188.9
Motor Rating		kW	152.7 / 152.7	105.0 / 105.0	122.5 / 105.0
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	805 / 805	436 / 436	650 / 586
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	541	405	432
Maximum Start Amps		A	1114	682	896
Compressor Nominal Run Amps		A	232.0 / 232.0	159.5 / 159.5	186.1 / 159.5
Recommended Mains Fuse Size		A	750	560	630
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	631	461	506
Recommended Mains Fuse Size		A	800	560	630
Pump Full Load Amps		A	21.2	14.8	14.8
Motor Rating		kW	11	7.5	7.5
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	638	461	506
Recommended Mains Fuse Size		A	800	560	630
Pump Full Load Amps		A	28.5	14.8	14.8
Motor Rating		kW	15	7.5	7.5
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	631	461	506
Recommended Mains Fuse Size		A	800	560	630
Pump Full Load Amps		A	21.2	14.8	14.8
Motor Rating		kW	11	7.5	7.5
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	638	461	506
Recommended Mains Fuse Size		A	800	560	630
Pump Full Load Amps		A	28.5	14.8	14.8
Motor Rating		kW	15	7.5	7.5

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Regular Quiet Continued

			13	14	15
	Notes	Units	OFC092R20-87MS4	OFC099R20-88HS6	OFC108R20-99HL6
Unit Data					
Nominal Run Amps (1)		A	533	577	618
Maximum Start Amps		A	878	1136	1157
Recommended Mains Fuse Size		A	670	710	750
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			20	20	20
Full Load Amps		A	4.3	4.3	4.3
Locked Rotor Amps		A	15	15	15
Motor Rating		kW	2	2	2
Condenser Fan - Per Fan (EC)					
Quantity			20	20	20
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			20	20	20
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	241.3 / 205.5	245.4 / 245.4	266.2 / 266.2
Motor Rating		kW	139.5 / 122.5	138.8 / 138.8	152.7 / 152.7
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	586 / 465	805 / 805	805 / 805
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	484	508	550
Maximum Start Amps		A	858	1102	1123
Compressor Nominal Run Amps		A	211.9 / 186.1	210.9 / 210.9	232.0 / 232.0
Recommended Mains Fuse Size		A	670	710	750
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	568	605	640
Recommended Mains Fuse Size		A	710	750	800
Pump Full Load Amps		A	35	28.5	21.2
Motor Rating		kW	18.5	15	11
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	574	612	647
Recommended Mains Fuse Size		A	710	750	800
Pump Full Load Amps		A	41.5	35	28.5
Motor Rating		kW	22	18.5	15
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	568	605	640
Recommended Mains Fuse Size		A	710	750	800
Pump Full Load Amps		A	35	28.5	21.2
Motor Rating		kW	18.5	15	11
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	574	612	647
Recommended Mains Fuse Size		A	710	750	800
Pump Full Load Amps		A	41.5	35	28.5
Motor Rating		kW	22	18.5	15

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Regular Quiet Continued

			16	17	18
	Notes	Units	OFC078R22-66MS1	OFC084R22-76MS2	OFC093R22-87HS4
Unit Data					
Nominal Run Amps (1)		A	454	480	556
Maximum Start Amps		A	711	740	1116
Recommended Mains Fuse Size		A	560	630	670
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			22	22	22
Full Load Amps		A	4.3	4.3	4.3
Locked Rotor Amps		A	15	15	15
Motor Rating		kW	2	2	2
Condenser Fan - Per Fan (EC)					
Quantity			22	22	22
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			22	22	22
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	179.9 / 179.9	205.5 / 179.9	245.4 / 216.3
Motor Rating		kW	105.0 / 105.0	122.5 / 105.0	138.8 / 122.5
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	436 / 436	465 / 436	805 / 650
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	414	440	492
Maximum Start Amps		A	690	719	1086
Compressor Nominal Run Amps		A	159.5 / 159.5	186.1 / 159.5	210.9 / 186.1
Recommended Mains Fuse Size		A	560	630	670
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	483	509	585
Recommended Mains Fuse Size		A	630	630	710
Pump Full Load Amps		A	28.5	28.5	28.5
Motor Rating		kW	15	15	15
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	489	515	591
Recommended Mains Fuse Size		A	630	630	710
Pump Full Load Amps		A	35	35	35
Motor Rating		kW	18.5	18.5	18.5
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	483	509	585
Recommended Mains Fuse Size		A	630	630	710
Pump Full Load Amps		A	28.5	28.5	28.5
Motor Rating		kW	15	15	15
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	489	515	591
Recommended Mains Fuse Size		A	630	630	710
Pump Full Load Amps		A	35	35	35
Motor Rating		kW	18.5	18.5	18.5

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Regular Quiet Continued

			19	20
	Notes	Units	OFC097R22-88MS4	OFC109R22-99HL5
Unit Data				
Nominal Run Amps (1)		A	577	627
Maximum Start Amps		A	922	1166
Recommended Mains Fuse Size		A	710	750
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC
Evaporator				
Trace Heater Rating		W	250	250
External Trace Heating				
Available (fitted by others)		W	500	500
Condenser Fan - Per Fan (AC)				
Quantity			22	22
Full Load Amps		A	4.3	4.3
Locked Rotor Amps		A	15	15
Motor Rating		kW	2	2
Condenser Fan - Per Fan (EC)				
Quantity			22	22
Full Load Amps		A	3.9	3.9
Locked Rotor Amps		A	N/A	N/A
Motor Rating		kW	2.56	2.56
Condenser Fan - Per Fan (HAEC)				
Quantity			22	22
Full Load Amps		A	4.5	4.5
Locked Rotor Amps		A	N/A	N/A
Motor Rating		kW	2.86	2.86
Compressor - Per Compressor				
Quantity			1 + 1	1 + 1
Nominal Run Amps		A	241.3 / 241.3	266.2 / 266.2
Motor Rating		kW	139.5 / 139.5	152.7 / 152.7
Sump Heater Rating		W	300	300
Start Amps (2)		A	586 / 586	805 / 805
Type Of Start			Star - Delta	Star - Delta
OPTIONAL EXTRAS				
Low Ambient Kit				
Recommended Permanent Fuse Size		A	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals
Power Factor Correction				
Unit Nominal Run Amps (1)		A	518	559
Maximum Start Amps		A	893	1132
Compressor Nominal Run Amps		A	211.9 / 211.9	232.0 / 232.0
Recommended Mains Fuse Size		A	710	750
Standard Head Pump (Single or Run/Standby)				
Unit Nominal Run Amps		A	612	648
Recommended Mains Fuse Size		A	750	800
Pump Full Load Amps		A	35	21.2
Motor Rating		kW	18.5	11
Larger Head Pump (Single or Run/Standby)				
Unit Nominal Run Amps		A	629	656
Recommended Mains Fuse Size		A	750	800
Pump Full Load Amps		A	52	28.5
Motor Rating		kW	30	15
Standard Head Inverter Pump (Single or Run/Standby)				
Unit Nominal Run Amps		A	612	648
Recommended Mains Fuse Size		A	750	800
Pump Full Load Amps		A	35	21.2
Motor Rating		kW	18.5	11
Larger Head Inverter Pump (Single or Run/Standby)				
Unit Nominal Run Amps		A	629	656
Recommended Mains Fuse Size		A	750	800
Pump Full Load Amps		A	52	28.5
Motor Rating		kW	30	15

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Extra Quiet

			21	22	23
	Notes	Units	OFC073X16-66HS1	OFC074X16-66HL1	OFC078X16-76HS2
Unit Data					
Nominal Run Amps (1)		A	418	418	445
Maximum Start Amps		A	815	815	879
Recommended Mains Fuse Size		A	500	500	560
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			16	16	16
Full Load Amps		A	2.5	2.5	2.5
Locked Rotor Amps		A	8.8	8.8	8.8
Motor Rating		kW	1.27	1.27	1.27
Condenser Fan - Per Fan (EC)					
Quantity			16	16	16
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			16	16	16
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	188.9 / 188.9	188.9 / 188.9	216.3 / 188.9
Motor Rating		kW	105.0 / 105.0	105.0 / 105.0	122.5 / 105.0
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	586 / 586	586 / 586	650 / 586
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	359	359	386
Maximum Start Amps		A	786	786	850
Compressor Nominal Run Amps		A	159.5 / 159.5	159.5 / 159.5	186.1 / 159.5
Recommended Mains Fuse Size		A	500	500	560
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	439	433	466
Recommended Mains Fuse Size		A	560	560	560
Pump Full Load Amps		A	21.2	14.8	21.2
Motor Rating		kW	11	7.5	11
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	446	433	474
Recommended Mains Fuse Size		A	560	560	630
Pump Full Load Amps		A	28.5	14.8	28.5
Motor Rating		kW	15	7.5	15
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	439	433	466
Recommended Mains Fuse Size		A	560	560	560
Pump Full Load Amps		A	21.2	14.8	21.2
Motor Rating		kW	11	7.5	11
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	446	433	474
Recommended Mains Fuse Size		A	560	560	630
Pump Full Load Amps		A	28.5	14.8	28.5
Motor Rating		kW	15	7.5	15

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Extra Quiet Continued

			24	25	26
	Notes	Units	OFC079X16-76HL2	OFC083X16-77HL2	OFC075X18-66MS1
Unit Data					
Nominal Run Amps (1)		A	445	473	405
Maximum Start Amps		A	879	906	661
Recommended Mains Fuse Size		A	560	630	500
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			16	16	18
Full Load Amps		A	2.5	2.5	2.5
Locked Rotor Amps		A	8.8	8.8	8.8
Motor Rating		kW	1.27	1.27	1.27
Condenser Fan - Per Fan (EC)					
Quantity			16	16	18
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			16	16	18
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	216.3 / 188.9	216.3 / 216.3	179.9 / 179.9
Motor Rating		kW	122.5 / 105.0	122.5 / 122.5	105.0 / 105.0
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	650 / 586	650 / 650	436 / 436
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	386	412	364
Maximum Start Amps		A	850	876	641
Compressor Nominal Run Amps		A	186.1 / 159.5	186.1 / 186.1	159.5 / 159.5
Recommended Mains Fuse Size		A	560	630	500
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	460	487	440
Recommended Mains Fuse Size		A	560	630	560
Pump Full Load Amps		A	14.8	14.8	35
Motor Rating		kW	7.5	7.5	18.5
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	460	494	433
Recommended Mains Fuse Size		A	560	630	560
Pump Full Load Amps		A	14.8	21.2	28.5
Motor Rating		kW	7.5	11	15
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	460	487	440
Recommended Mains Fuse Size		A	560	630	560
Pump Full Load Amps		A	14.8	14.8	35
Motor Rating		kW	7.5	7.5	18.5
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	460	494	433
Recommended Mains Fuse Size		A	560	630	560
Pump Full Load Amps		A	14.8	21.2	28.5
Motor Rating		kW	7.5	11	15

- (1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.
 (2) Starting amps refers to the Star (Y) connection only.

Electrical Data Extra Quiet Continued

			27	28	29
	Notes	Units	OFC080X18-76ML2	OFC088X18-87HS4	OFC095X18-88HS6
Unit Data					
Nominal Run Amps (1)		A	430	507	536
Maximum Start Amps		A	690	1066	1095
Recommended Mains Fuse Size		A	560	630	670
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			18	18	18
Full Load Amps		A	2.5	2.5	2.5
Locked Rotor Amps		A	8.8	8.8	8.8
Motor Rating		kW	1.27	1.27	1.27
Condenser Fan - Per Fan (EC)					
Quantity			18	18	18
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			18	18	18
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	205.5 / 179.9	245.4 / 216.3	245.4 / 245.4
Motor Rating		kW	122.5 / 105.0	138.8 / 122.5	138.8 / 138.8
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	465 / 436	805 / 650	805 / 805
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	391	442	467
Maximum Start Amps		A	670	1036	1061
Compressor Nominal Run Amps		A	186.1 / 159.5	210.9 / 186.1	210.9 / 210.9
Recommended Mains Fuse Size		A	560	630	670
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	445	535	564
Recommended Mains Fuse Size		A	560	670	710
Pump Full Load Amps		A	14.8	28.5	28.5
Motor Rating		kW	7.5	15	15
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	459	542	571
Recommended Mains Fuse Size		A	560	670	710
Pump Full Load Amps		A	28.5	35	35
Motor Rating		kW	15	18.5	18.5
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	445	535	564
Recommended Mains Fuse Size		A	560	670	710
Pump Full Load Amps		A	14.8	28.5	28.5
Motor Rating		kW	7.5	15	15
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	459	542	571
Recommended Mains Fuse Size		A	560	670	710
Pump Full Load Amps		A	28.5	35	35
Motor Rating		kW	15	18.5	18.5

- (1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.
 (2) Starting amps refers to the Star (Y) connection only.

Electrical Data Extra Quiet Continued

			30	31	32
	Notes	Units	OFC102X18-99HL6	OFC076X20-66HS1	OFC081X20-76ML2
Unit Data					
Nominal Run Amps (1)		A	577	428	435
Maximum Start Amps		A	1116	825	695
Recommended Mains Fuse Size		A	710	560	560
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			18	20	20
Full Load Amps		A	2.5	2.5	2.5
Locked Rotor Amps		A	8.8	8.8	8.8
Motor Rating		kW	1.27	1.27	1.27
Condenser Fan - Per Fan (EC)					
Quantity			18	20	20
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			18	20	20
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	266.2 / 266.2	188.9 / 188.9	205.5 / 179.9
Motor Rating		kW	152.7 / 152.7	105.0 / 105.0	122.5 / 105.0
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	805 / 805	586 / 586	465 / 436
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	509	369	396
Maximum Start Amps		A	1082	796	675
Compressor Nominal Run Amps		A	232.0 / 232.0	159.5 / 159.5	186.1 / 159.5
Recommended Mains Fuse Size		A	710	560	560
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	599	449	450
Recommended Mains Fuse Size		A	750	560	560
Pump Full Load Amps		A	21.2	21.2	14.8
Motor Rating		kW	11	11	7.5
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	599	456	464
Recommended Mains Fuse Size		A	800	560	560
Pump Full Load Amps		A	21.2	28.5	28.5
Motor Rating		kW	11	15	15
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	599	449	450
Recommended Mains Fuse Size		A	750	560	560
Pump Full Load Amps		A	21.2	21.2	14.8
Motor Rating		kW	11	11	7.5
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	599	456	464
Recommended Mains Fuse Size		A	800	560	560
Pump Full Load Amps		A	21.2	28.5	28.5
Motor Rating		kW	11	15	15

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Extra Quiet Continued

			33	34	35
	Notes	Units	OFC092X20-87HS6	OFC097X20-88HL5	OFC104X20-99HL6
Unit Data					
Nominal Run Amps (1)		A	512	541	582
Maximum Start Amps		A	1071	1100	1121
Recommended Mains Fuse Size		A	630	670	710
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			20	20	20
Full Load Amps		A	2.5	2.5	2.5
Locked Rotor Amps		A	8.8	8.8	8.8
Motor Rating		kW	1.27	1.27	1.27
Condenser Fan - Per Fan (EC)					
Quantity			20	20	20
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			20	20	20
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	245.4 / 216.3	245.4 / 245.4	266.2 / 266.2
Motor Rating		kW	138.8 / 122.5	138.8 / 138.8	152.7 / 152.7
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	805 / 650	805 / 805	805 / 805
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	447	472	514
Maximum Start Amps		A	1041	1066	1087
Compressor Nominal Run Amps		A	210.9 / 186.1	210.9 / 210.9	232.0 / 232.0
Recommended Mains Fuse Size		A	630	670	710
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	540	562	597
Recommended Mains Fuse Size		A	670	670	750
Pump Full Load Amps		A	28.5	21.2	14.8
Motor Rating		kW	15	11	7.5
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	547	569	611
Recommended Mains Fuse Size		A	670	710	750
Pump Full Load Amps		A	35	28.5	28.5
Motor Rating		kW	18.5	15	15
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	540	562	597
Recommended Mains Fuse Size		A	670	670	750
Pump Full Load Amps		A	28.5	21.2	14.8
Motor Rating		kW	15	11	7.5
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	547	569	611
Recommended Mains Fuse Size		A	670	710	750
Pump Full Load Amps		A	35	28.5	28.5
Motor Rating		kW	18.5	15	15

- (1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.
 (2) Starting amps refers to the Star (Y) connection only.

Electrical Data Extra Quiet Continued

			36	37	38
	Notes	Units	OFC076X22-66HS1	OFC082X22-76ML2	OFC091X22-87HS4
Unit Data					
Nominal Run Amps (1)		A	433	440	517
Maximum Start Amps		A	830	700	1076
Recommended Mains Fuse Size		A	560	560	630
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC	24V/230VAC
Evaporator					
Trace Heater Rating		W	250	250	250
External Trace Heating					
Available (fitted by others)		W	500	500	500
Condenser Fan - Per Fan (AC)					
Quantity			22	22	22
Full Load Amps		A	2.5	2.5	2.5
Locked Rotor Amps		A	8.8	8.8	8.8
Motor Rating		kW	1.27	1.27	1.27
Condenser Fan - Per Fan (EC)					
Quantity			22	22	22
Full Load Amps		A	3.9	3.9	3.9
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.56	2.56	2.56
Condenser Fan - Per Fan (HAEC)					
Quantity			22	22	22
Full Load Amps		A	4.5	4.5	4.5
Locked Rotor Amps		A	N/A	N/A	N/A
Motor Rating		kW	2.86	2.86	2.86
Compressor - Per Compressor					
Quantity			1 + 1	1 + 1	1 + 1
Nominal Run Amps		A	188.9 / 188.9	205.5 / 179.9	245.4 / 216.3
Motor Rating		kW	105.0 / 105.0	122.5 / 105.0	138.8 / 122.5
Sump Heater Rating		W	300	300	300
Start Amps (2)		A	586 / 586	465 / 436	805 / 650
Type Of Start			Star - Delta	Star - Delta	Star - Delta
OPTIONAL EXTRAS					
Low Ambient Kit					
Recommended Permanent Fuse Size		A	32	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals	4 mm ² terminals
Power Factor Correction					
Unit Nominal Run Amps (1)		A	374	401	452
Maximum Start Amps		A	801	680	1046
Compressor Nominal Run Amps		A	159.5 / 159.5	186.1 / 159.5	210.9 / 186.1
Recommended Mains Fuse Size		A	560	560	630
Standard Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	454	455	545
Recommended Mains Fuse Size		A	560	560	670
Pump Full Load Amps		A	21.2	14.8	28.5
Motor Rating		kW	11	7.5	15
Larger Head Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	461	469	552
Recommended Mains Fuse Size		A	560	630	670
Pump Full Load Amps		A	28.5	28.5	35
Motor Rating		kW	15	15	18.5
Standard Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	454	455	545
Recommended Mains Fuse Size		A	560	560	670
Pump Full Load Amps		A	21.2	14.8	28.5
Motor Rating		kW	11	7.5	15
Larger Head Inverter Pump (Single or Run/Standby)					
Unit Nominal Run Amps		A	461	469	552
Recommended Mains Fuse Size		A	560	630	670
Pump Full Load Amps		A	28.5	28.5	35
Motor Rating		kW	15	15	18.5

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

(2) Starting amps refers to the Star (Y) connection only.

Electrical Data Extra Quiet Continued

			39	40
	Notes	Units	OFC093X22-87ML5	OFC105X22-99HL6
Unit Data				
Nominal Run Amps (1)		A	502	587
Maximum Start Amps		A	847	1126
Recommended Mains Fuse Size		A	630	710
Mains Supply		VAC	400 V 3 PH 50 Hz	400 V 3 PH 50 Hz
Max Mains Incoming Cable Size		mm ²	Direct to Bus Bar	Direct to Bus Bar
Recommended Permanent Fuse Size		A	16	16
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals
Control Circuit		VAC	24V/230VAC	24V/230VAC
Evaporator				
Trace Heater Rating		W	250	250
External Trace Heating				
Available (fitted by others)		W	500	500
Condenser Fan - Per Fan (AC)				
Quantity			22	22
Full Load Amps		A	2.5	2.5
Locked Rotor Amps		A	8.8	8.8
Motor Rating		kW	1.27	1.27
Condenser Fan - Per Fan (EC)				
Quantity			22	22
Full Load Amps		A	3.9	3.9
Locked Rotor Amps		A	N/A	N/A
Motor Rating		kW	2.56	2.56
Condenser Fan - Per Fan (HAEC)				
Quantity			22	22
Full Load Amps		A	4.5	4.5
Locked Rotor Amps		A	N/A	N/A
Motor Rating		kW	2.86	2.86
Compressor - Per Compressor				
Quantity			1 + 1	1 + 1
Nominal Run Amps		A	241.3 / 205.5	266.2 / 266.2
Motor Rating		kW	139.5 / 122.5	152.7 / 152.7
Sump Heater Rating		W	300	300
Start Amps (2)		A	586 / 465	805 / 805
Type Of Start			Star - Delta	Star - Delta
OPTIONAL EXTRAS				
Low Ambient Kit				
Recommended Permanent Fuse Size		A	32	32
Permanent Supply		VAC	230 V 1 PH 50 Hz	230 V 1 PH 50 Hz
Max Permanent Incoming Cable Size		mm ²	4 mm ² terminals	4 mm ² terminals
Power Factor Correction				
Unit Nominal Run Amps (1)		A	453	519
Maximum Start Amps		A	827	1092
Compressor Nominal Run Amps		A	211.9 / 186.1	232.0 / 232.0
Recommended Mains Fuse Size		A	630	710
Standard Head Pump (Single or Run/Standby)				
Unit Nominal Run Amps		A	523	609
Recommended Mains Fuse Size		A	630	750
Pump Full Load Amps		A	21.2	21.2
Motor Rating		kW	11	11
Larger Head Pump (Single or Run/Standby)				
Unit Nominal Run Amps		A	530	616
Recommended Mains Fuse Size		A	670	750
Pump Full Load Amps		A	28.5	28.5
Motor Rating		kW	15	15
Standard Head Inverter Pump (Single or Run/Standby)				
Unit Nominal Run Amps		A	523	609
Recommended Mains Fuse Size		A	630	750
Pump Full Load Amps		A	21.2	21.2
Motor Rating		kW	11	11
Larger Head Inverter Pump (Single or Run/Standby)				
Unit Nominal Run Amps		A	530	616
Recommended Mains Fuse Size		A	670	750
Pump Full Load Amps		A	28.5	28.5
Motor Rating		kW	15	15

(1) Based at 5.0 Evaporating, 50 Condensing, AC Standard Fans.

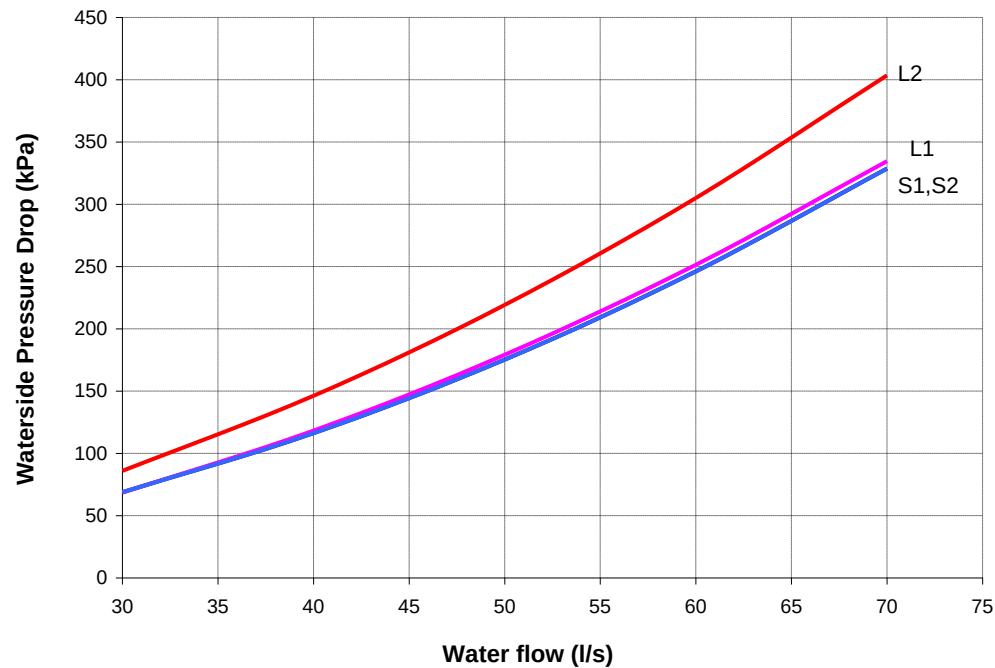
(2) Starting amps refers to the Star (Y) connection only.

Performance Data

Waterside Pressure Drop (kPa) (Unit) 16 Fan 2 Row Coil

CAUTION

Full design water flow **MUST** be maintained at all times. Variable water volume is NOT recommended and will invalidate warranty.



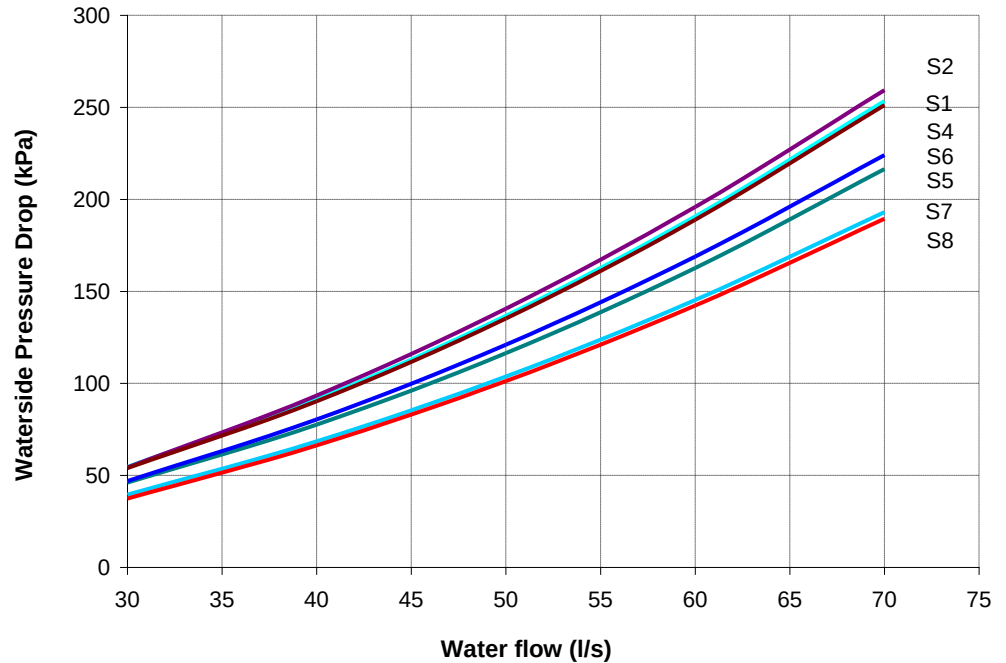
- (1) Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2) For glycol solutions, please refer to *Glycol Data*, on page 53.
- (3) Curves depict evaporator type

Waterside Pressure Drop (Unit) (kPa) 18 Fan 2 Row Coil

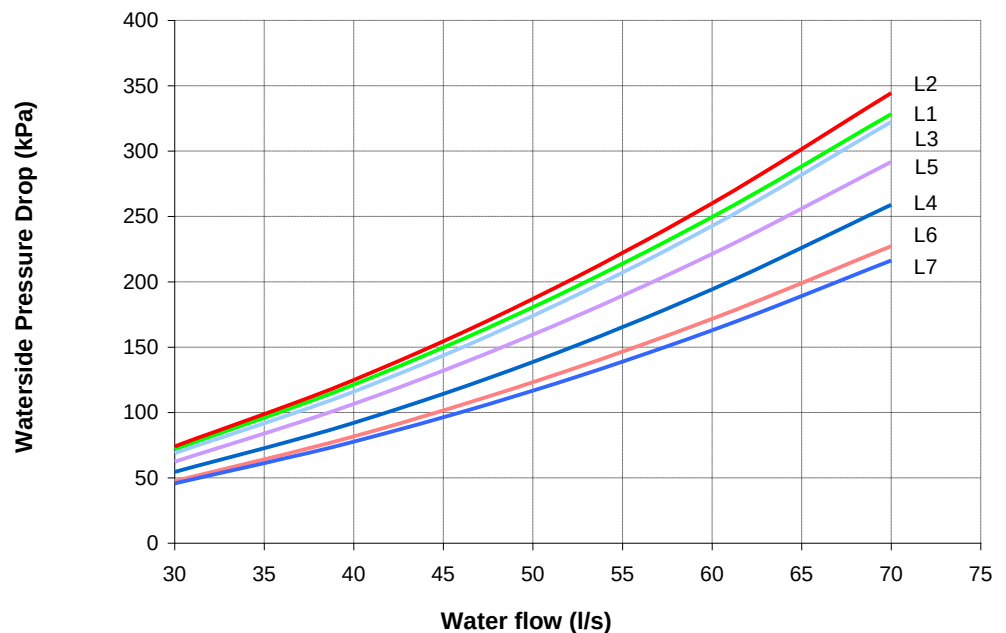
CAUTION



Full design water flow **MUST** be maintained at all times. Variable water volume is **NOT** recommended and will invalidate warranty.



Waterside Pressure Drop (Unit) (kPa) 18 Fan 2 Row Coil

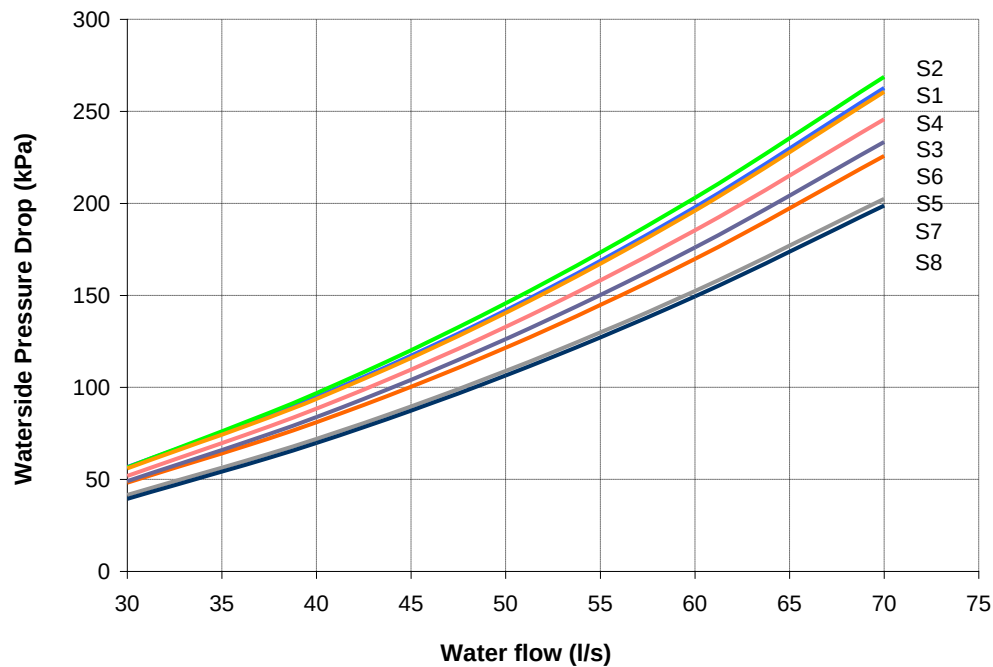


- (1) Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2) For glycol solutions, please refer to [Glycol Data](#), on page 53.
- (3) Curves depict evaporator type

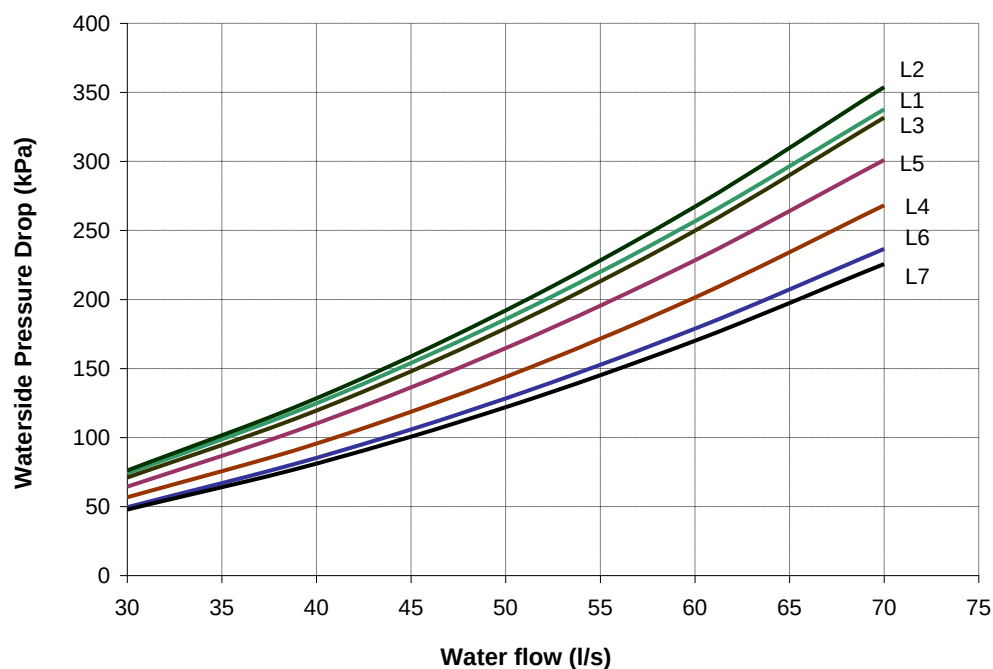
Waterside Pressure Drop (Unit) (kPa) 20 Fan 2 Row Coil

CAUTION

 Full design water flow MUST be maintained at all times. Variable water volume is NOT recommended and will invalidate warranty.



Waterside Pressure Drop (Unit) (kPa) 20 Fan 2 Row Coil



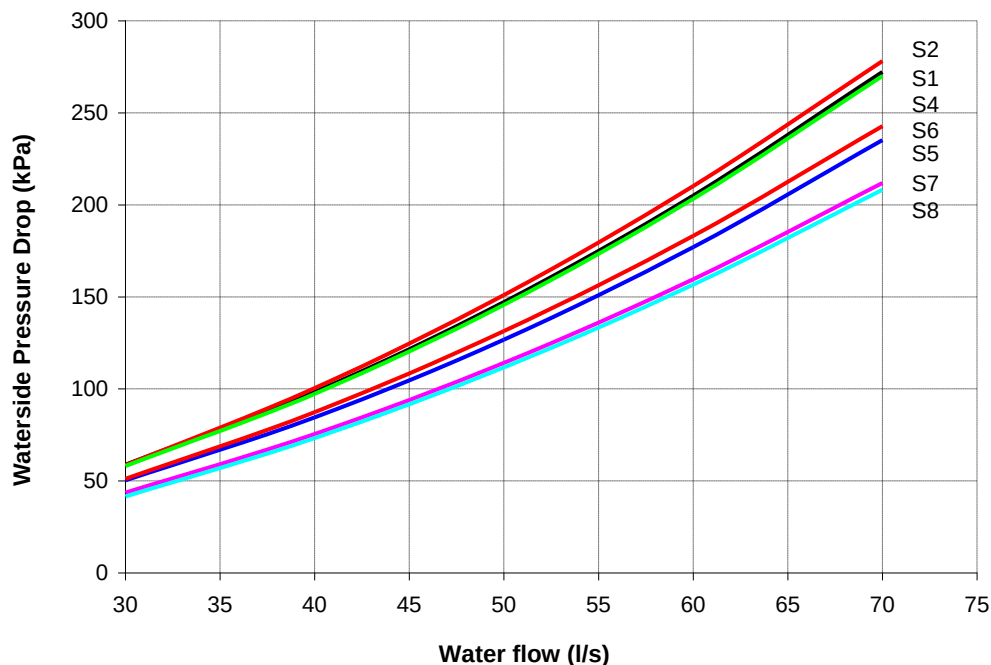
- (1)
- Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2)
- For glycol solutions, please refer to *Glycol Data*, on page 53.
- (3)
- Curves depict evaporator type

Waterside Pressure Drop (Unit) (kPa) 22 Fan 2 Row Coil

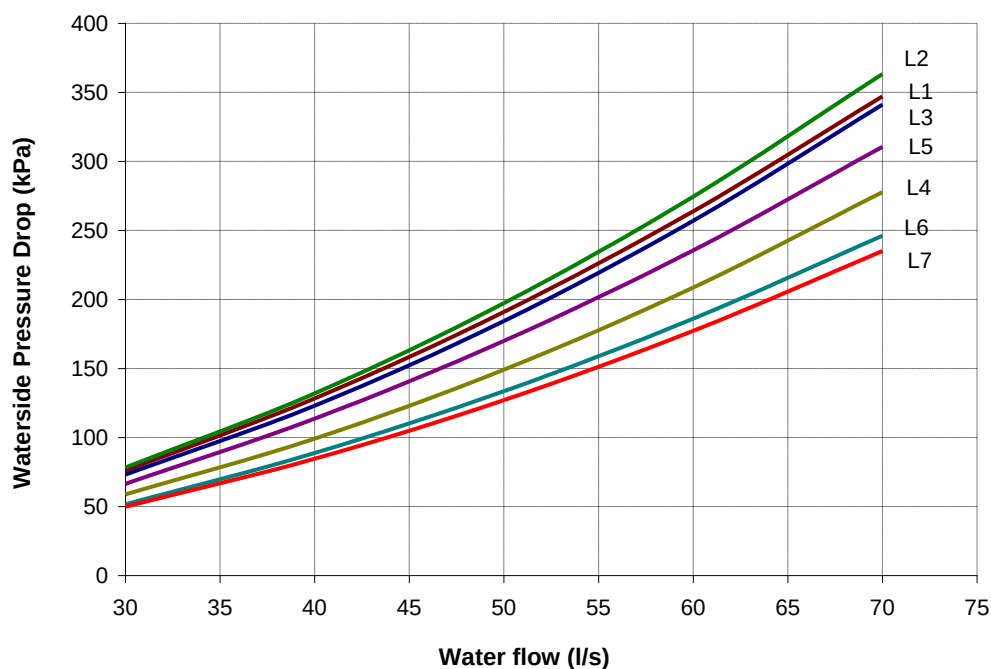
CAUTION



Full design water flow **MUST** be maintained at all times. Variable water volume is **NOT** recommended and will invalidate warranty.



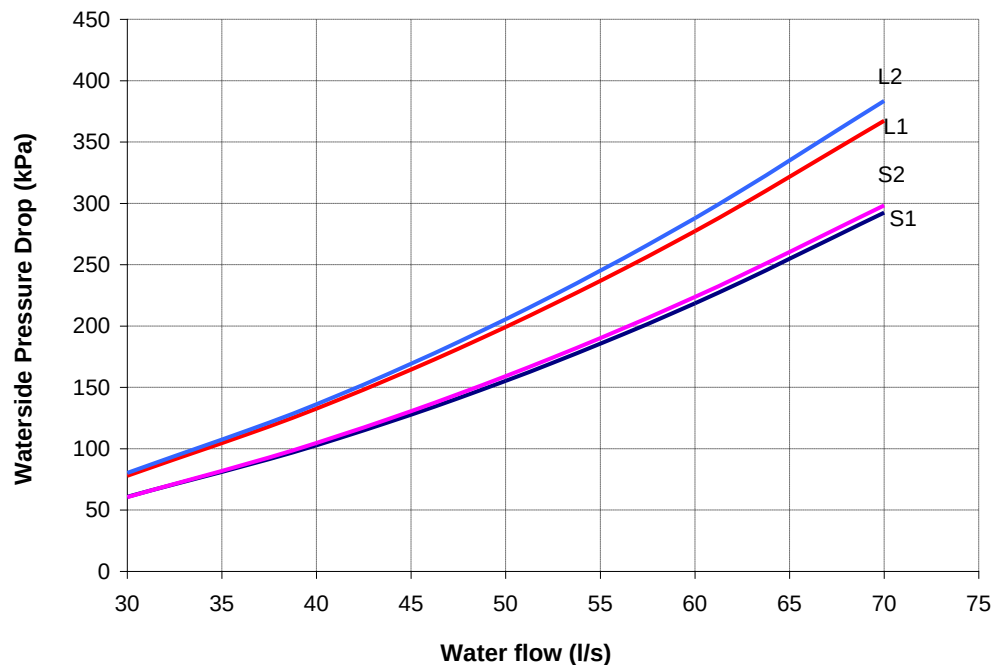
Waterside Pressure Drop (Unit) (kPa) 22 Fan 2 Row Coil



- (1) Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2) For glycol solutions, please refer to [Glycol Data](#), on page 53.
- (3) Curves depict evaporator type

Waterside Pressure Drop (Unit) (kPa) 16 Fan 3 Row Coil

CAUTION  Full design water flow **MUST** be maintained at all times. Variable water volume is NOT recommended and will invalidate warranty.



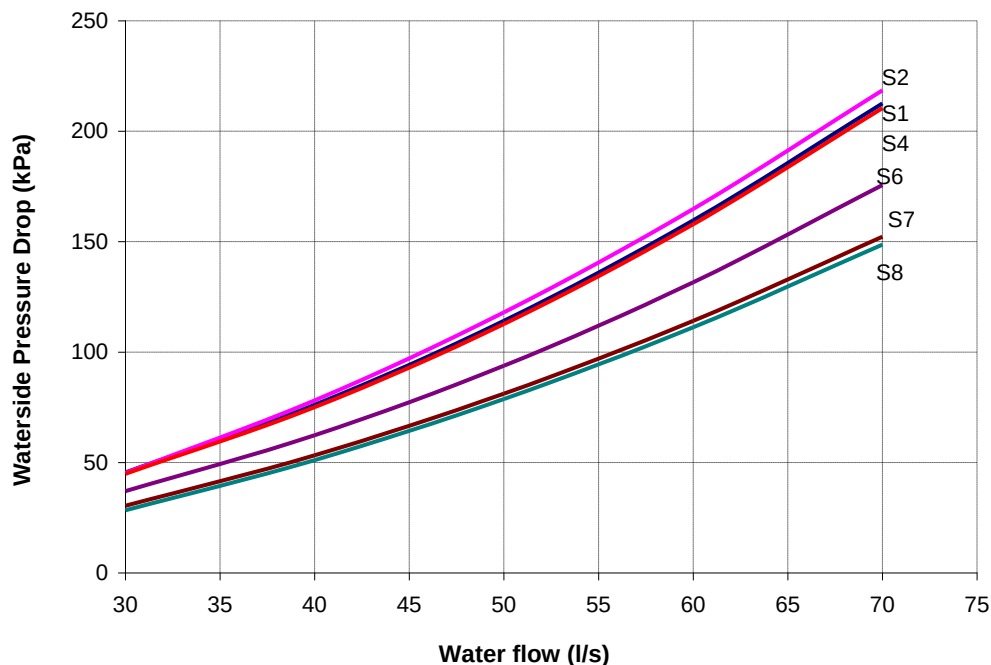
- (1) Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2) For glycol solutions, please refer to *Glycol Data*, on page 53.
- (3) Curves depict evaporator type

Waterside Pressure Drop (Unit) (kPa) 18 Fan 3 Row Coil

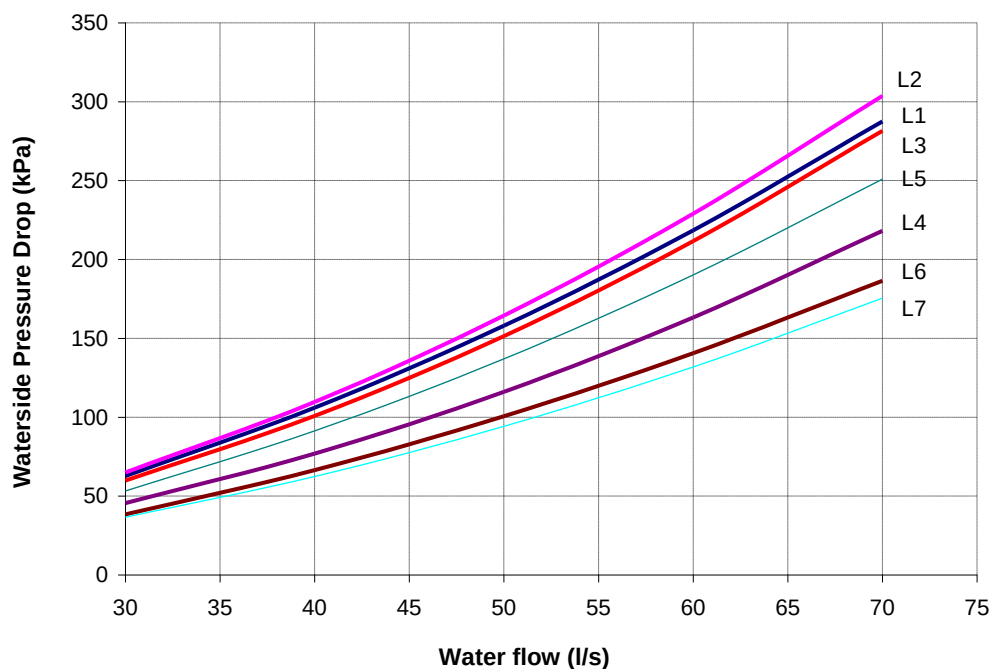
CAUTION



Full design water flow **MUST** be maintained at all times. Variable water volume is **NOT** recommended and will invalidate warranty.



Waterside Pressure Drop (Unit) (kPa) 18 Fan 3 Row Coil

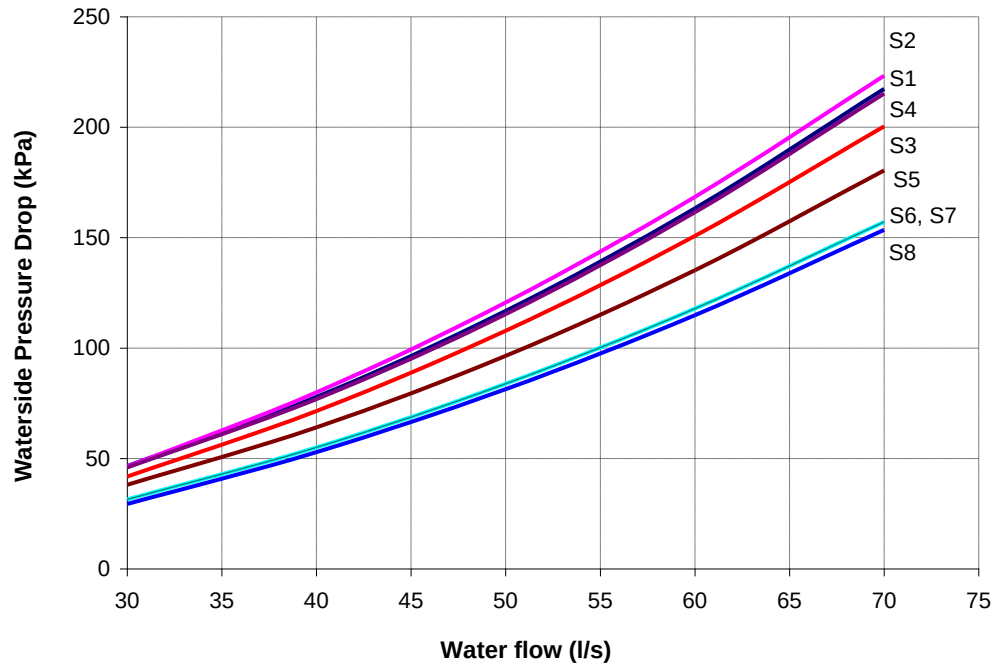


- (1) Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2) For glycol solutions, please refer to *Glycol Data*, on page 53.
- (3) Curves depict evaporator type

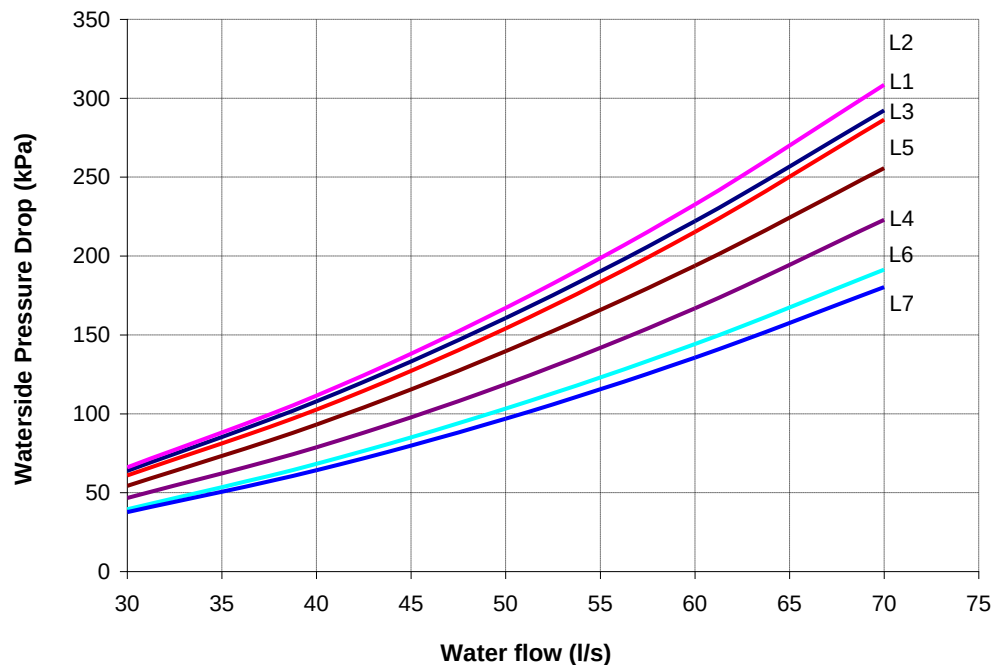
Waterside Pressure Drop (Unit) (kPa) 20 Fan 3 Row Coil

CAUTION

Full design water flow MUST be maintained at all times. Variable water volume is NOT recommended and will invalidate warranty.



Waterside Pressure Drop (Unit) (kPa) 20 Fan 3 Row Coil



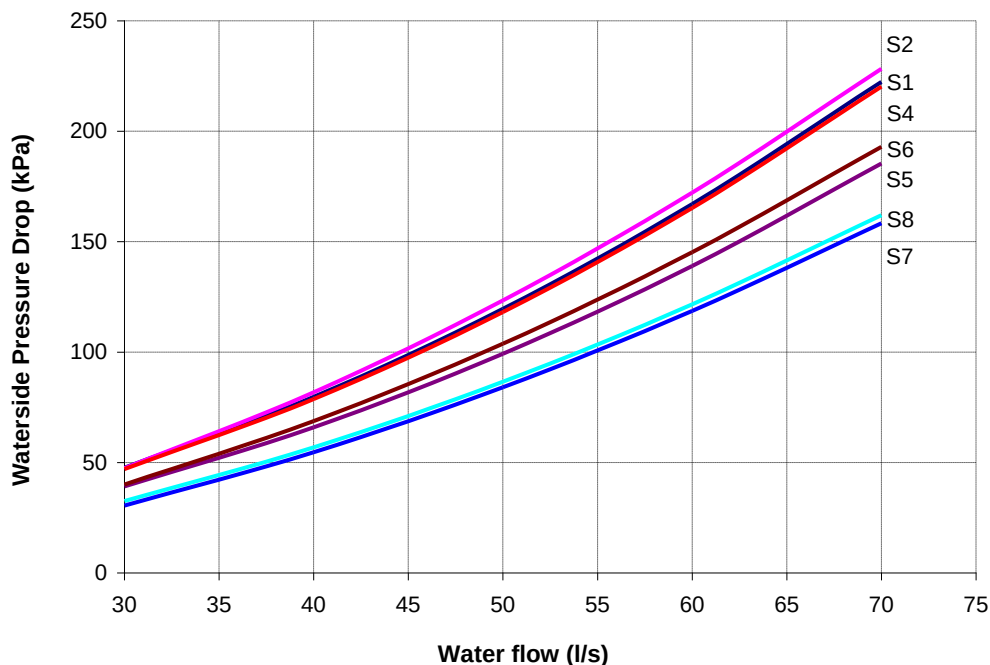
- (1) Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2) For glycol solutions, please refer to *Glycol Data*, on page 53.
- (3) Curves depict evaporator type

Waterside Pressure Drop (Unit) (kPa) 22 Fan 3 Row Coil

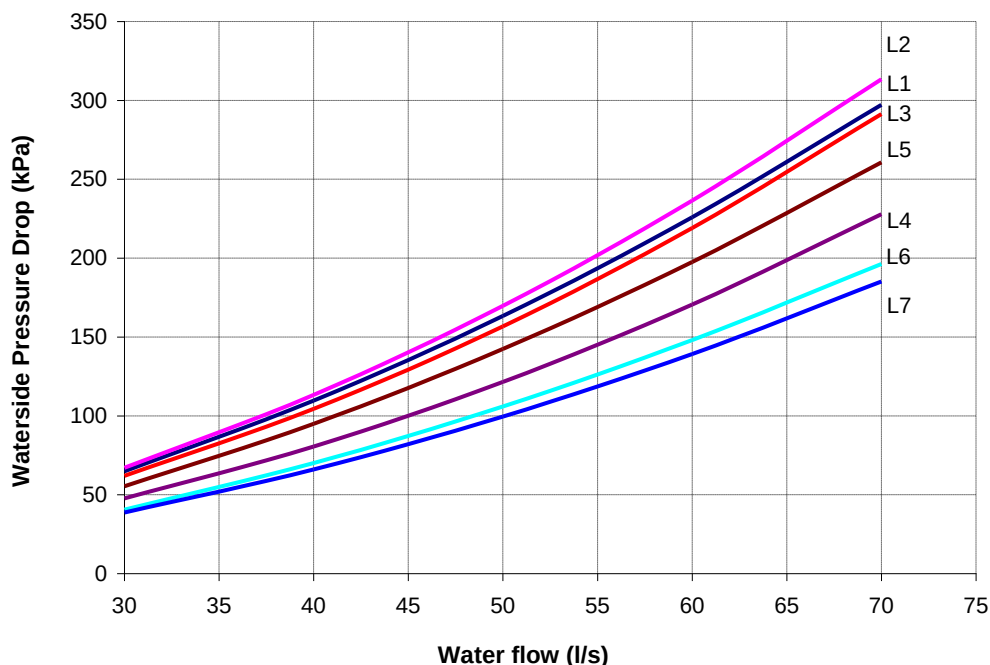
CAUTION



Full design water flow **MUST** be maintained at all times. Variable water volume is **NOT** recommended and will invalidate warranty.

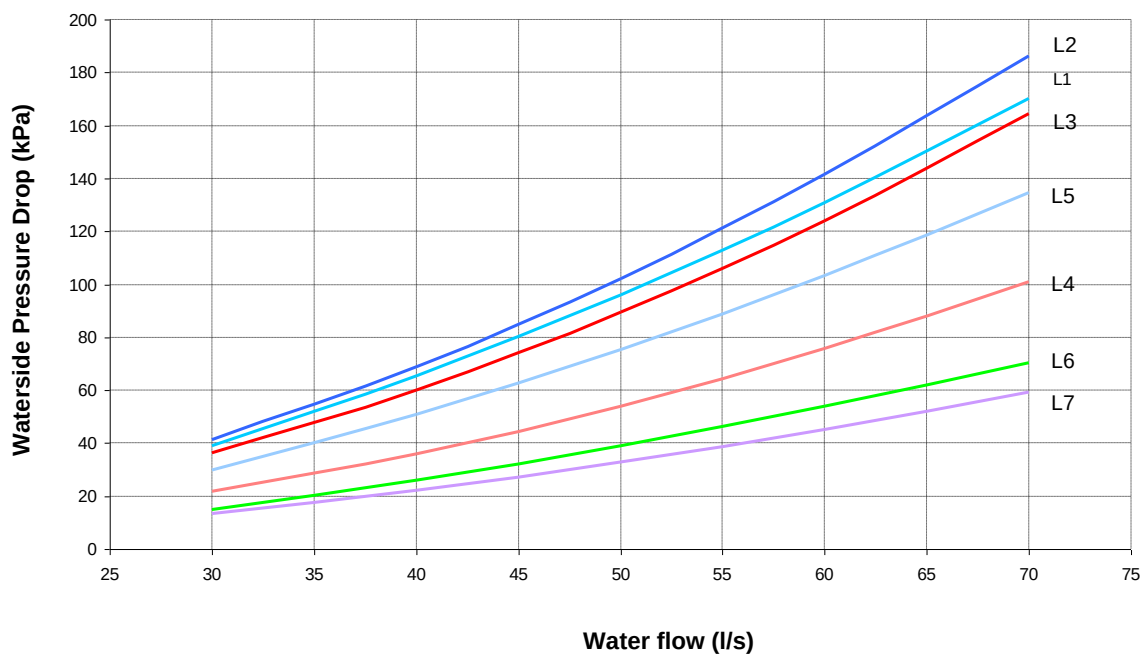
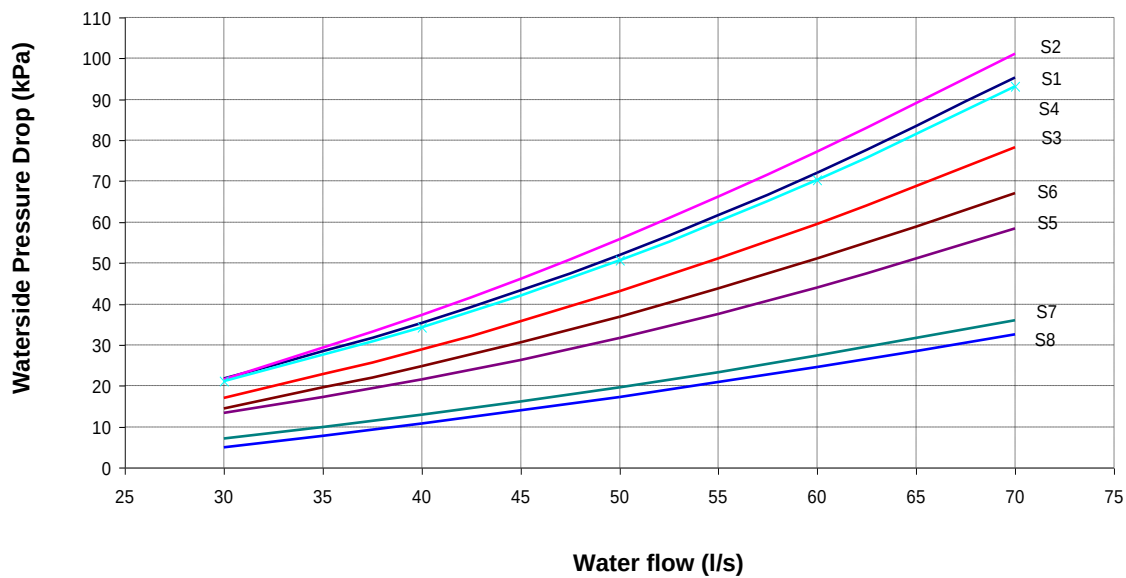


Waterside Pressure Drop (Unit) (kPa) 22 Fan 3 Row Coil



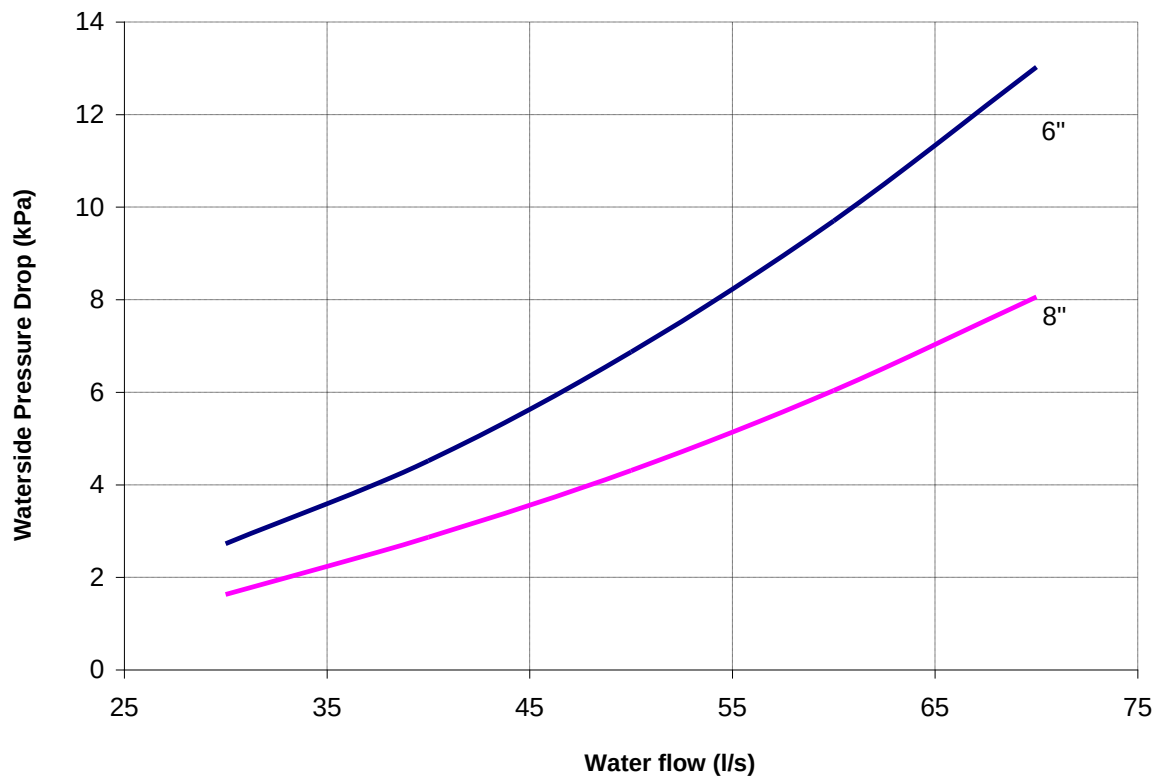
- (1) Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2) For glycol solutions, please refer to *Glycol Data*, on page 53.
- (3) Curves depict evaporator type

Evaporator Pressure Drops



- (1) Chiller pressure drop refers to standard unit only. For optional extras and pipework, please contact Airedale.
- (2) For glycol solutions, please refer to *Glycol Data*, on page 53.
- (3) Curves depict evaporator type

Water Strainer Pressure Drops



The above curves relate to the strainer size (inches). Data based upon the filters being clean.

Performance Data

Pump packages (optional extras)

CAUTION



Full design water flow **MUST** be maintained at all times. Variable water volume is **NOT** recommended and will invalidate warranty.

Use the formula below and the graphs provided to calculate the External Head Available:

Example

Model Ref. = **OFC084R20-76HL2**
 Ambient: = 35°C
 Fluid = 100% Water
 Inlet Fluid Temp. = 15°C
 Outlet Fluid Temp. = 10°C (**5°K ΔT**)
 Pump Selection = Single Standard Head - Standard ac Motor - Fixed Speed Option
 Fluid Flow l/s = 42.3 l/s

EHA (kPa) = **External Head Available**

EHA (kPa) = $\left\{ \begin{array}{c} \text{Total Pump Head Available} \\ - \\ \text{Unit Waterside Pressure Drop} \end{array} \right\}$

EHA (kPa) = $\left\{ \begin{array}{c} 123 - 33 \end{array} \right\}$

EHA (kPa) = **90 kPa**

Regular Quiet		Pump Curve	
		50 kPa	100 kPa
1	OFC076R16-66HS1	65-4	80-2
2	OFC076R16-66MS1	80-2	80-3
3	OFC081R16-76MS2	80-2	80-3
4	OFC081R16-76ML2	65-5	80-2
5	OFC087R16-77ML2	65-5	80-2
6	OFC077R18-66HS1	65-4	80-2
7	OFC083R18-76ML2	65-5	80-2
8	OFC091R18-87HS4	80-2	80-3
9	OFC095R18-88MS4	80-3	80-4
10	OFC107R18-99HL5	65-4	80-2
11	OFC078R20-66ML1	65-5	65-5
12	OFC084R20-76HL2	65-5	65-5
13	OFC092R20-87MS4	80-3	80-4
14	OFC099R20-88HS6	80-2	80-3
15	OFC108R20-99HL6	65-4	80-2
16	OFC078R22-66MS1	80-2	80-3
17	OFC084R22-76MS2	80-2	80-3
18	OFC093R22-87HS4	80-2	80-3
19	OFC097R22-88MS4	80-3	80-5
20	OFC109R22-99HL5	65-4	80-2

Extra Quiet		Pump Curve	
		50 kPa	100 kPa
21	OFC073X16-66HS1	65-6	80-2
22	OFC074X16-66HL1	65-5	65-5
23	OFC078X16-76HS2	65-4	80-2
24	OFC079X16-76HL2	65-5	65-5
25	OFC083X16-77HL2	65-5	65-6
26	OFC075X18-66MS1	65-8	80-2
27	OFC080X18-76ML2	65-5	80-2
28	OFC088X18-87HS4	80-2	80-3
29	OFC095X18-88HS6	80-2	80-3
30	OFC102X18-99HL6	65-6	65-6
31	OFC076X20-66HS1	65-4	80-2
32	OFC081X20-76ML2	65-5	80-2
33	OFC092X20-87HS6	80-2	80-3
34	OFC097X20-88HL5	65-6	80-2
35	OFC104X20-99HL6	65-3	80-2
36	OFC076X22-66HS1	65-4	80-2
37	OFC082X22-76ML2	65-5	80-2
38	OFC091X22-87HS4	80-2	80-3
39	OFC093X22-87ML5	65-6	80-2
40	OFC105X22-99HL6	65-4	80-2

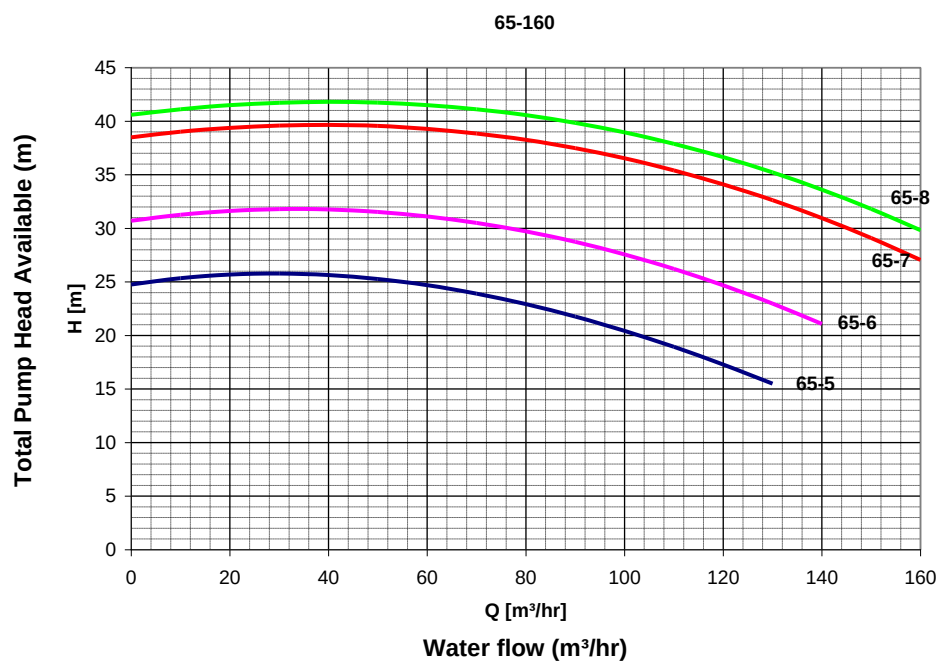
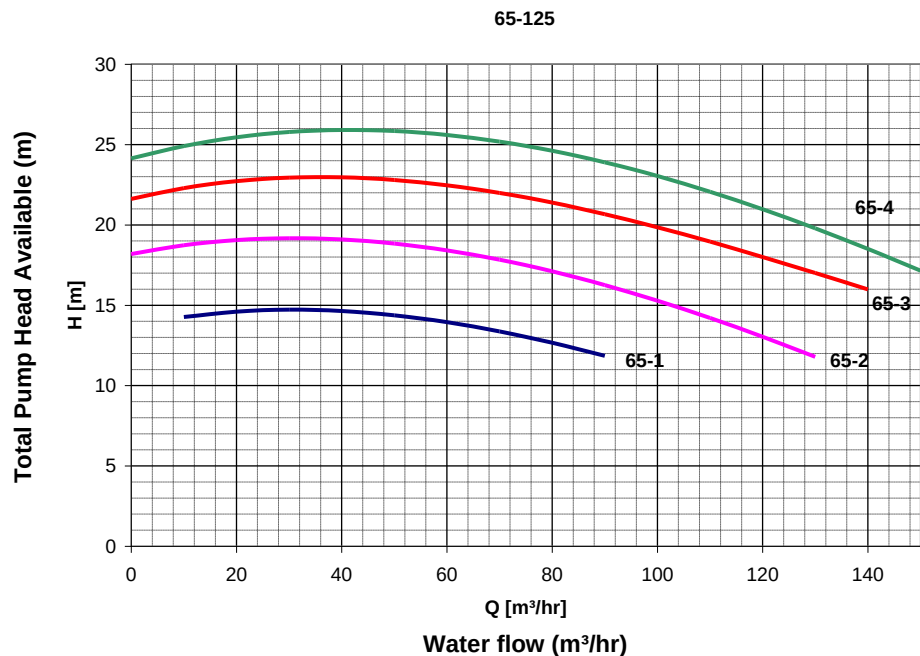
(1) Pump curves correspond to available external head available.

Pump Code	Airedale Code
65-125/120-110-2-50	65- 1
65-125/127-2-50	65- 2
65-125/137-2-50	65- 3
65-125/144-2-50	65- 4
65-160/143-2-50	65- 5
65-160/157-2-50	65- 6
65-160/173-2-50	65- 7
65-160/177-2-50	65- 8
80-160/147-127-2-50	80-1
80-160/151-2-50	80- 2
80-160/161-2-50	80- 3
80-160/167-2-50	80- 4
80-160/177-2-50	80- 5

Performance Data

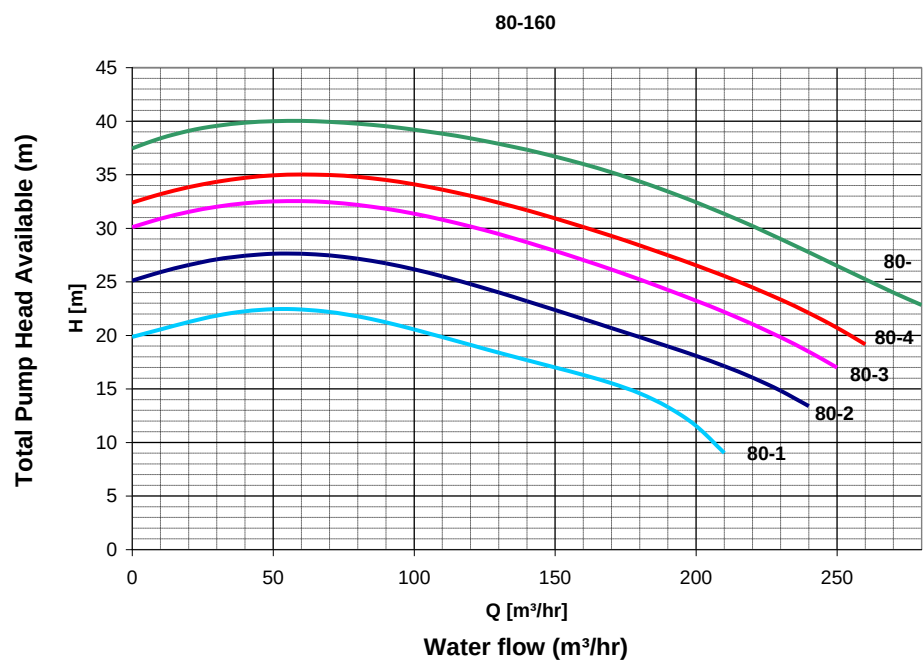
Pump Packages (Optional Extras)

AC Motor - Fixed Speed Option



Performance Data

Pump Packages (Optional Extras)



Sound Data

Measurement of sound data

All sound data quoted has been measured in the third-octave band limited values, using a Real Time Analyser calibrated sound intensity meter in accordance with BS EN ISO9614 Part 1: 2009. **The Global sound data quoted is valid for noise emitted in the horizontal plane in all directions.**

All Sound Power Levels quoted are calculated from measured sound intensity according to BS EN ISO9614 Part 1: 2009.

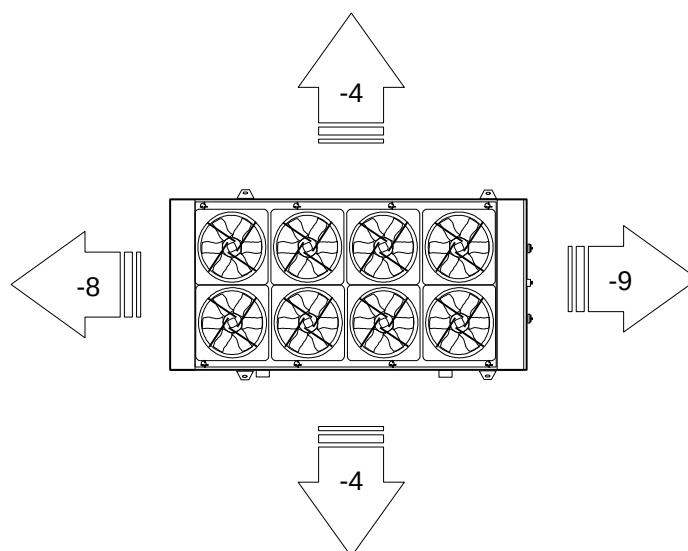
Sound Pressure Levels are calculated from **sound power using the expanded parallelepiped method** according to BS EN ISO11203: 2009.

Sound Directivity

The **Global** sound measurements quoted in the following tables **do not** incorporate any directivity or denote any sound level heard at any given position surrounding the unit, rather they represent the total sound level emanated from the unit in **all directions in the horizontal plane** from source.

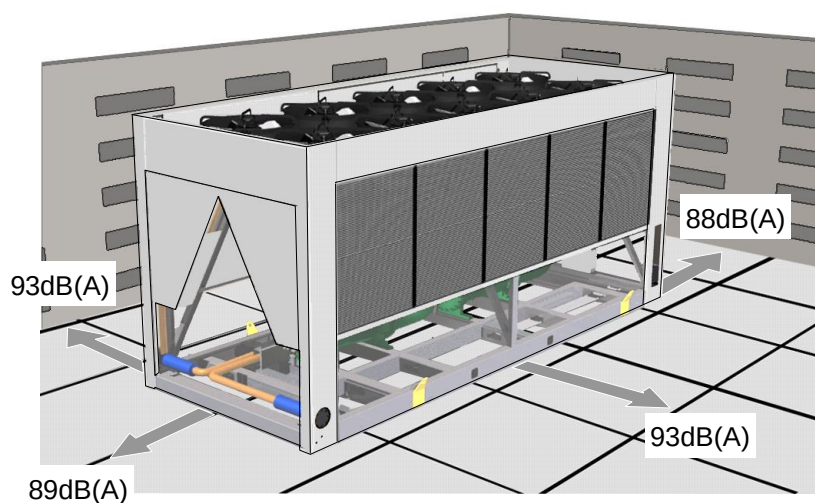
Using the adjustment factors from the map below, specific directional sound power levels can be derived from the global sound power data.

Base Correction Values - Global dB



EXAMPLE:

OFC091X22-87ML5
Overall Sound Power
= 97 dB(A) ie:



Sound Data

Regular Quiet (R) Models 2 Row Coil

	Sound Measurement	Overall dB(A)	Frequency (Hz) dB							
			63	125	250	500	1000	2000	4000	8000
OFC076R16-66HS1	Power	102	98	93	96	102	98	86	78	67
	Pressure @ 10m	68	64	60	63	69	64	52	45	34
OFC076R16-66MS1	Power	102	98	93	96	102	98	86	78	67
	Pressure @ 10m	68	64	60	63	69	64	52	45	34
OFC081R16-76MS2	Power	102	98	93	97	103	98	86	78	67
	Pressure @ 10m	69	64	59	63	69	64	52	44	34
OFC081R16-76ML2	Power	102	98	93	97	103	98	86	78	67
	Pressure @ 10m	69	64	59	63	69	64	52	44	34
OFC087R16-77ML2	Power	103	98	93	97	104	98	86	78	67
	Pressure @ 10m	69	64	59	63	70	64	53	44	34
OFC077R18-66HS1	Power	102	98	94	96	102	98	86	78	68
	Pressure @ 10m	68	65	60	63	69	64	52	45	34
OFC083R18-76ML2	Power	102	98	94	97	103	98	86	78	68
	Pressure @ 10m	69	65	60	63	69	64	53	44	34
OFC091R18-87HS4	Power	103	98	93	98	105	97	87	77	68
	Pressure @ 10m	70	65	60	65	71	63	53	44	34
OFC095R18-88MS4	Power	104	98	93	99	106	96	87	77	68
	Pressure @ 10m	70	65	59	65	72	63	53	43	34
OFC107R18-99HL5	Power	103	98	93	98	104	98	87	78	68
	Pressure @ 10m	69	65	60	65	70	64	53	44	34
OFC078R20-66ML1	Power	102	99	94	97	103	98	87	79	68
	Pressure @ 10m	68	65	60	63	69	64	53	45	34
OFC084R20-76HL2	Power	103	99	94	97	103	98	87	78	68
	Pressure @ 10m	69	65	60	63	69	64	53	45	34
OFC092R20-87MS4	Power	103	99	94	99	105	97	87	78	68
	Pressure @ 10m	70	65	60	65	71	63	53	44	34
OFC099R20-88HS6	Power	104	99	94	99	106	97	87	77	68
	Pressure @ 10m	70	65	60	65	72	63	53	43	34
OFC108R20-99HL6	Power	103	99	94	99	104	98	87	78	68
	Pressure @ 10m	69	65	60	65	70	64	53	44	34
OFC078R22-66MS1	Power	102	99	94	97	103	98	87	79	69
	Pressure @ 10m	68	65	60	63	69	64	53	45	34
OFC084R22-76MS2	Power	103	99	94	97	103	98	87	79	69
	Pressure @ 10m	69	65	60	63	69	64	53	45	34
OFC093R22-87HS4	Power	104	99	94	99	105	97	87	78	68
	Pressure @ 10m	69	65	60	65	71	63	53	44	34
OFC097R22-88MS4	Power	104	99	94	100	106	97	88	77	68
	Pressure @ 10m	70	65	60	65	72	63	53	43	34
OFC081R16-76ML2	Power	103	99	94	99	104	98	88	79	68
	Pressure @ 10m	69	65	60	65	70	64	53	45	34

- 1 dB(A) is the overall sound level, measured on the A scale.
- 2 All sound data measured at nominal conditions: Water in/out 15/10°C at 35°C ambient.
- 3 Based on standard unit, for units fitted with optional extras, please contact Airedale.



The Sound Pressure data quoted is only valid in free field conditions, where the unit is installed on a reflective base. If the equipment is placed adjacent to a reflective wall, values may vary to those stated, typically increasing by 3dB for each side added.

Extra Quiet (X) Models 2 Row Coil

	Sound Measurement	Overall dB(A)	Frequency (Hz) dB							
			63	125	250	500	1000	2000	4000	8000
	Power	98	89	89	89	90	97	79	73	60
	Pressure @ 10m	64	55	55	55	56	63	46	40	26
OFC073X16-66HS1	Power	98	89	89	89	90	97	79	73	60
	Pressure @ 10m	64	55	55	55	56	63	46	40	26
OFC074X16-66HL1	Power	97	89	88	89	90	97	79	73	59
	Pressure @ 10m	64	55	55	55	56	63	46	39	26
OFC078X16-76HS2	Power	97	89	88	89	90	97	79	73	59
	Pressure @ 10m	64	55	55	55	56	63	46	39	26
OFC079X16-76HL2	Power	97	89	88	89	90	97	79	72	59
	Pressure @ 10m	64	55	54	55	56	63	46	39	26
OFC083X16-77HL2	Power	98	89	89	89	90	97	79	73	60
	Pressure @ 10m	64	55	55	56	56	63	46	40	26
OFC075X18-66MS1	Power	97	89	89	89	90	97	80	73	60
	Pressure @ 10m	64	55	55	56	56	63	46	39	26
OFC080X18-76ML2	Power	97	89	88	90	90	96	80	72	60
	Pressure @ 10m	63	55	54	56	57	62	46	38	26
OFC088X18-87HS4	Power	96	89	88	90	91	95	80	71	60
	Pressure @ 10m	62	55	54	56	57	61	46	37	26
OFC095X18-88HS6	Power	97	89	88	90	91	97	80	73	60
	Pressure @ 10m	64	55	54	56	57	63	46	39	26
OFC102X18-99HL6	Power	98	90	89	90	90	97	80	74	60
	Pressure @ 10m	64	56	55	56	56	63	46	40	26
OFC076X20-66HS1	Power	98	90	89	90	90	97	80	73	60
	Pressure @ 10m	64	56	55	56	56	63	46	39	26
OFC081X20-76ML2	Power	97	90	88	90	91	96	80	72	60
	Pressure @ 10m	63	56	54	56	57	62	46	38	26
OFC092X20-87HS6	Power	96	90	88	90	91	95	80	71	60
	Pressure @ 10m	62	56	54	56	57	61	47	37	26
OFC097X20-88HL5	Power	98	90	88	90	91	97	80	73	60
	Pressure @ 10m	64	56	54	56	57	63	47	39	26
OFC104X20-99HL6	Power	98	90	90	90	91	97	80	74	61
	Pressure @ 10m	64	56	56	56	57	63	46	40	27
OFC076X22-66HS1	Power	98	90	89	90	91	97	80	74	61
	Pressure @ 10m	64	56	55	56	57	63	46	39	27
OFC082X22-76ML2	Power	97	90	89	91	91	96	81	72	61
	Pressure @ 10m	63	56	55	56	57	62	47	38	27
OFC091X22-87HS4	Power	97	90	89	91	91	96	81	72	61
	Pressure @ 10m	63	56	55	56	57	62	47	38	27
OFC093X22-87ML5	Power	98	90	89	91	91	97	81	73	61
	Pressure @ 10m	64	56	55	57	57	63	47	39	27
OFC105X22-99HL6	Power	98	89	89	89	90	97	79	73	60
	Pressure @ 10m	64	55	55	55	56	63	46	40	26

- 1 dB(A) is the overall sound level, measured on the A scale.
- 2 All sound data measured at nominal conditions: Water in/out 15/10°C at 35°C ambient.
- 3 Based on standard unit, for units fitted with optional extras, please contact Airedale.



The Sound Pressure data quoted is only valid in free field conditions, where the unit is installed on a reflective base. If the equipment is placed adjacent to a reflective wall, values may vary to those stated, typically increasing by 3dB for each side added.

Regular Quiet (R) Models 3 Row Coil

	Sound Measurement	Overall dB(A)	Frequency (Hz) dB							
			63	125	250	500	1000	2000	4000	8000
OFC076R16-66HS1	Power	102	98	93	96	102	98	86	78	67
	Pressure @ 10m	68	64	60	63	69	64	52	45	34
OFC076R16-66MS1	Power	102	98	93	96	102	98	86	78	67
	Pressure @ 10m	68	64	60	63	69	64	52	45	34
OFC081R16-76MS2	Power	102	98	93	97	103	98	86	78	67
	Pressure @ 10m	69	64	59	63	69	64	52	44	34
OFC081R16-76ML2	Power	102	98	93	97	103	98	86	78	67
	Pressure @ 10m	69	64	59	63	69	64	52	44	34
OFC087R16-77ML2	Power	103	98	93	97	104	98	86	78	67
	Pressure @ 10m	69	64	59	63	70	64	52	44	34
OFC077R18-66HS1	Power	102	98	94	96	102	98	86	78	68
	Pressure @ 10m	68	65	60	63	69	64	52	45	34
OFC083R18-76ML2	Power	102	98	93	97	103	98	86	78	68
	Pressure @ 10m	69	65	60	63	69	64	53	44	34
OFC091R18-87HS4	Power	103	98	93	98	105	97	87	77	68
	Pressure @ 10m	70	65	60	65	71	63	53	44	34
OFC095R18-88MS4	Power	104	98	93	99	106	96	87	77	67
	Pressure @ 10m	70	65	59	65	72	63	53	43	34
OFC107R18-99HL5	Power	103	98	93	98	104	98	87	78	68
	Pressure @ 10m	69	65	59	65	70	64	53	44	34
OFC078R20-66ML1	Power	102	99	94	97	103	98	87	79	68
	Pressure @ 10m	68	65	60	63	69	64	53	45	34
OFC084R20-76HL2	Power	103	99	94	97	103	98	87	78	68
	Pressure @ 10m	69	65	60	63	69	64	53	45	34
OFC092R20-87MS4	Power	103	99	94	99	105	97	87	78	68
	Pressure @ 10m	70	65	60	65	71	63	53	44	34
OFC099R20-88HS6	Power	104	99	94	99	106	97	87	77	68
	Pressure @ 10m	70	65	60	65	72	63	53	43	34
OFC108R20-99HL6	Power	103	99	94	99	104	98	87	78	68
	Pressure @ 10m	69	65	60	65	70	64	53	44	34
OFC078R22-66MS1	Power	102	99	94	97	103	98	87	79	68
	Pressure @ 10m	68	65	60	63	69	64	53	45	34
OFC084R22-76MS2	Power	103	99	94	97	103	98	87	79	68
	Pressure @ 10m	69	65	60	63	69	64	53	45	34
OFC093R22-87HS4	Power	104	99	94	99	105	97	87	78	68
	Pressure @ 10m	69	65	60	65	71	63	53	44	34
OFC097R22-88MS4	Power	104	99	94	100	106	97	87	77	68
	Pressure @ 10m	70	65	60	65	72	63	53	43	34
OFC081R16-76ML2	Power	103	99	94	99	104	98	88	79	68
	Pressure @ 10m	69	65	60	65	70	64	53	45	34

- 1 dB(A) is the overall sound level, measured on the A scale.
2 All sound data measured at nominal conditions: Water in/out 15/10°C at 35°C ambient.
3 Based on standard unit, for units fitted with optional extras, please contact Airedale.



The Sound Pressure data quoted is only valid in free field conditions, where the unit is installed on a reflective base. If the equipment is placed adjacent to a reflective wall, values may vary to those stated, typically increasing by 3dB for each side added.

Extra Quiet (X) Models 3 Row Coil

	Sound Measurement	Overall dB(A)	Frequency (Hz) dB							
			63	125	250	500	1000	2000	4000	8000
	Power	98	89	89	89	90	97	79	73	60
	Pressure @ 10m	64	55	55	55	56	63	46	40	26
OFC073X16-66HS1	Power	98	89	89	89	90	97	79	73	60
	Pressure @ 10m	64	55	55	55	56	63	46	40	26
OFC074X16-66HL1	Power	97	89	88	89	90	97	79	73	59
	Pressure @ 10m	64	55	55	55	56	63	46	39	26
OFC078X16-76HS2	Power	97	89	88	89	90	97	79	73	59
	Pressure @ 10m	64	55	55	55	56	63	46	39	26
OFC079X16-76HL2	Power	97	89	88	89	90	97	79	72	59
	Pressure @ 10m	64	55	54	55	56	63	46	39	26
OFC083X16-77HL2	Power	98	89	89	89	90	97	79	73	60
	Pressure @ 10m	64	55	55	56	56	63	46	40	26
OFC075X18-66MS1	Power	97	89	89	89	90	97	80	73	60
	Pressure @ 10m	64	55	55	56	56	63	46	39	26
OFC080X18-76ML2	Power	97	89	88	90	90	96	80	72	60
	Pressure @ 10m	63	55	54	56	57	62	46	38	26
OFC088X18-87HS4	Power	96	89	88	90	91	95	80	71	60
	Pressure @ 10m	62	55	54	56	57	61	46	37	26
OFC095X18-88HS6	Power	97	89	88	90	91	97	80	73	60
	Pressure @ 10m	64	55	54	56	57	63	46	39	26
OFC102X18-99HL6	Power	98	90	89	90	90	97	80	74	60
	Pressure @ 10m	64	56	55	56	56	63	46	40	26
OFC076X20-66HS1	Power	98	90	89	90	90	97	80	73	60
	Pressure @ 10m	64	56	55	56	56	63	46	39	26
OFC081X20-76ML2	Power	97	90	88	90	91	96	80	72	60
	Pressure @ 10m	63	56	54	56	57	62	46	38	26
OFC092X20-87HS6	Power	96	90	88	90	91	95	80	71	60
	Pressure @ 10m	62	56	54	56	57	61	47	37	26
OFC097X20-88HL5	Power	98	90	88	90	91	97	80	73	60
	Pressure @ 10m	64	56	54	56	57	63	47	39	26
OFC104X20-99HL6	Power	98	90	90	90	91	97	80	74	61
	Pressure @ 10m	64	56	56	56	57	63	46	40	27
OFC076X22-66HS1	Power	98	90	89	90	91	97	80	74	61
	Pressure @ 10m	64	56	55	56	57	63	46	39	27
OFC082X22-76ML2	Power	97	90	89	91	91	96	81	72	61
	Pressure @ 10m	63	56	55	56	57	62	47	38	27
OFC091X22-87HS4	Power	97	90	89	91	91	96	81	72	61
	Pressure @ 10m	63	56	55	56	57	62	47	38	27
OFC093X22-87ML5	Power	98	90	89	91	91	97	81	73	61
	Pressure @ 10m	64	56	55	57	57	63	47	39	27
OFC105X22-99HL6	Power	98	89	89	89	90	97	79	73	60
	Pressure @ 10m	64	55	55	55	56	63	46	40	26

- 1 dB(A) is the overall sound level, measured on the A scale.
- 2 All sound data measured at nominal conditions: Water in/out 15/10°C at 35°C ambient.
- 3 Based on standard unit, for units fitted with optional extras, please contact Airedale.

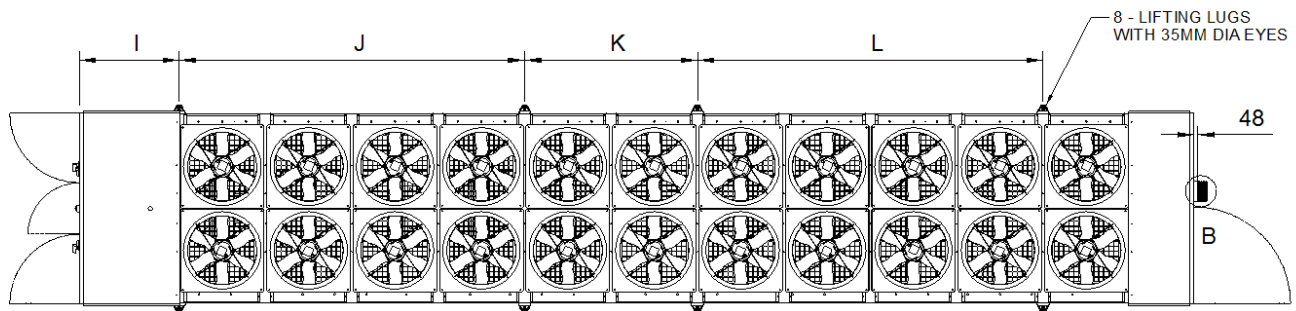


The Sound Pressure data quoted is only valid in free field conditions, where the unit is installed on a reflective base. If the equipment is placed adjacent to a reflective wall, values may vary to those stated, typically increasing by 3dB for each side added.

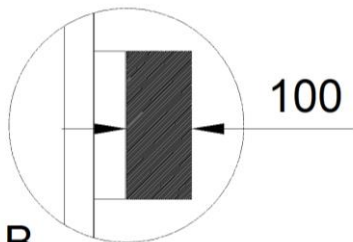
Installation Data

Dimensional Data

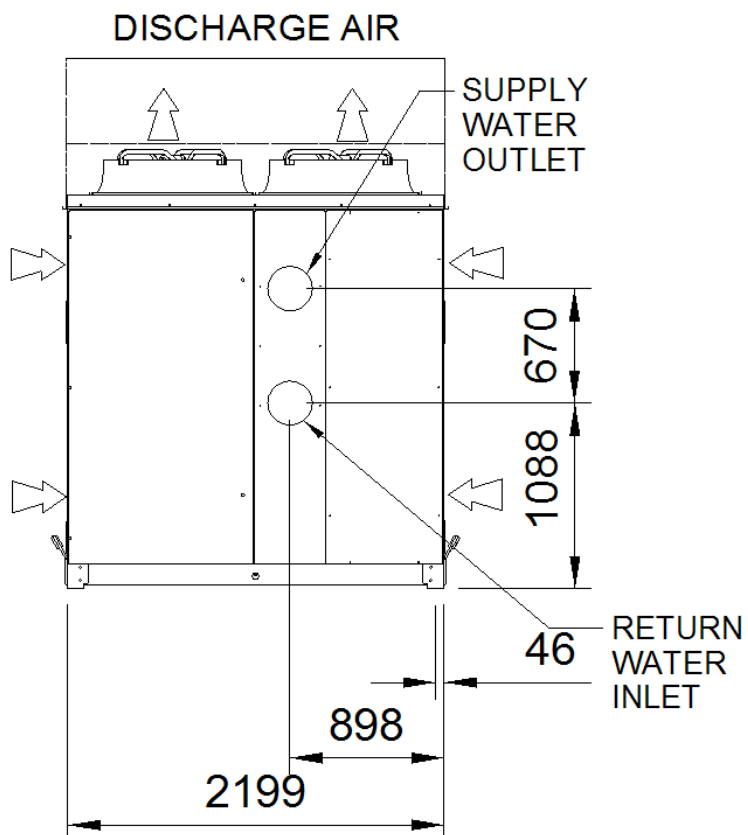
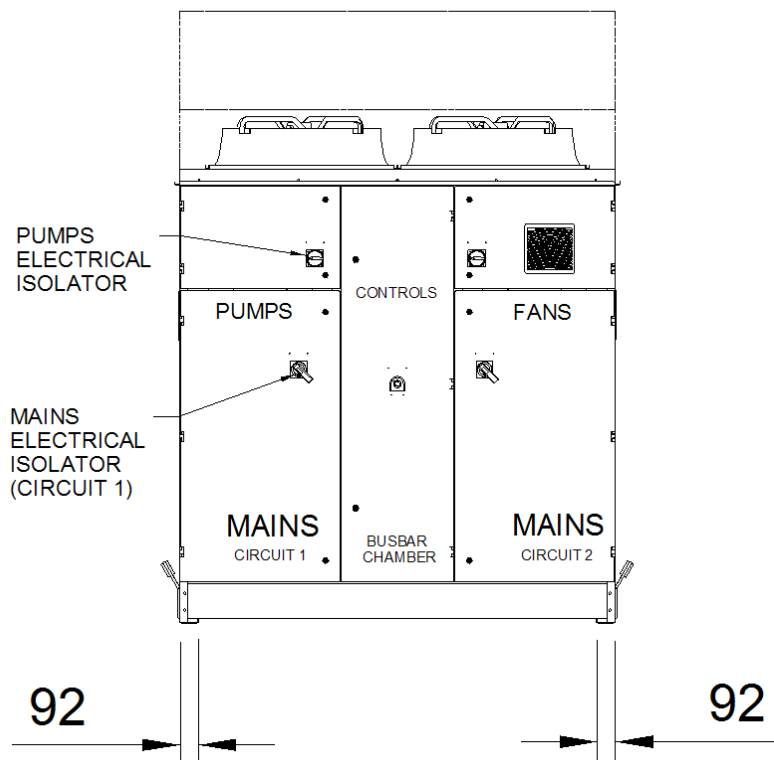
Unit diagrams can be supplied on request, please contact Airedale.

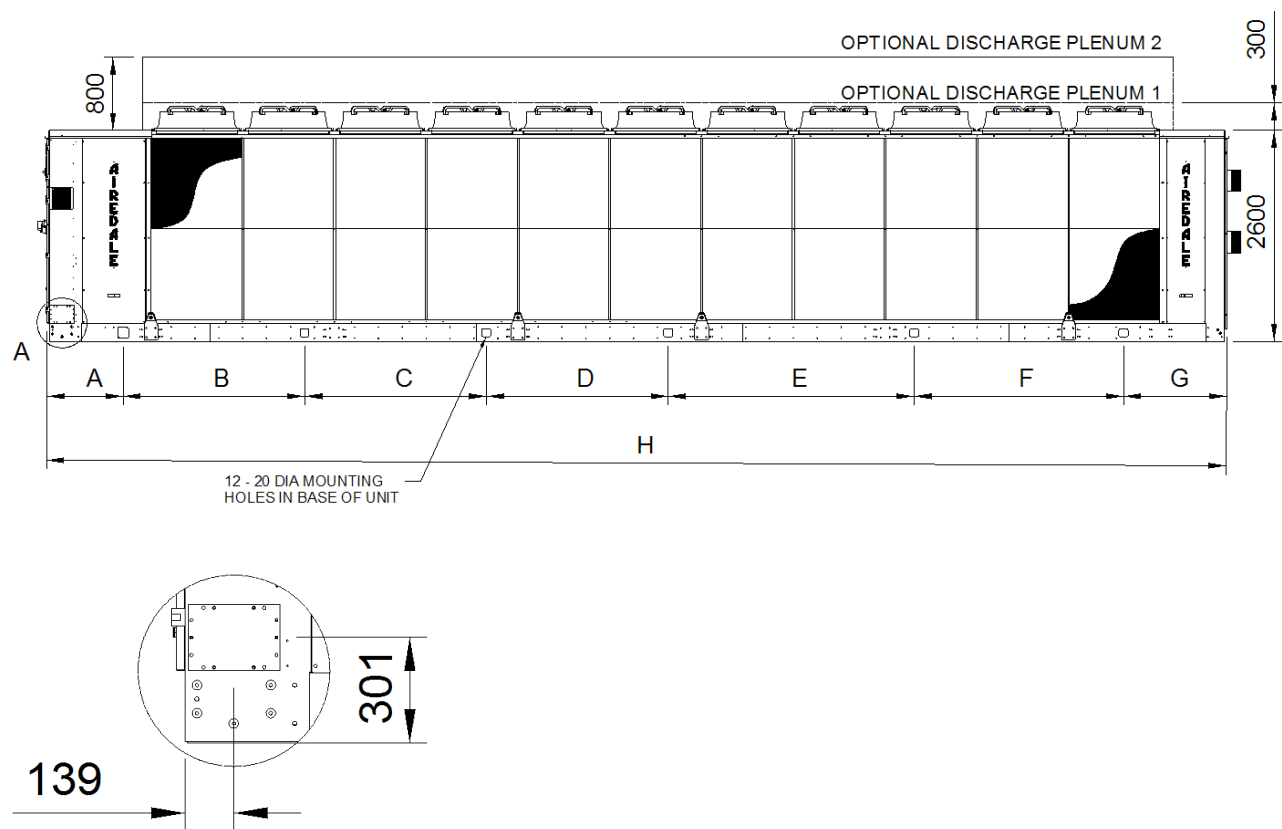


INLET AND OUTLET WATER
'VICTAULIC' TYPE CONNECTIONS
DN200 PN16



DETAIL B



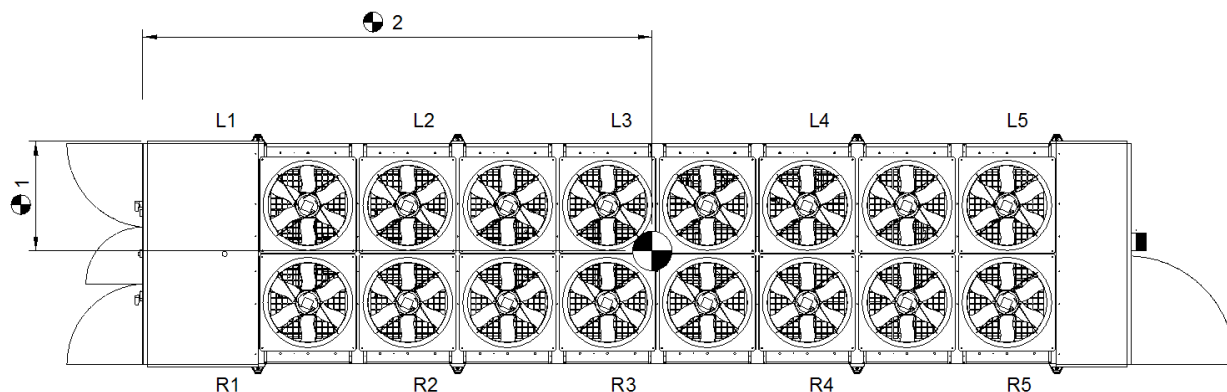


DETAIL A

	Dimensions (mm)											
Case Size	A	B	C	D	E	F	G	H	I	J	K	L
16 Fan	825	1980	1980	1980	1980	N/A	1105	9850	1155	2000	4000	2000
18 Fan	825	1980	1980	1980	1980	980	1125	10850	1155	2000	4000	2000
20 Fan	825	1980	1980	1980	1980	1980	1125	11850	1155	2000	4000	2000
22 Fan	825	1980	1980	1980	2680	2280	1125	12850	1155	2000	4000	2000

Weights, Point Loadings & Centre of Gravity (C of G) - No Pumps

R Type units



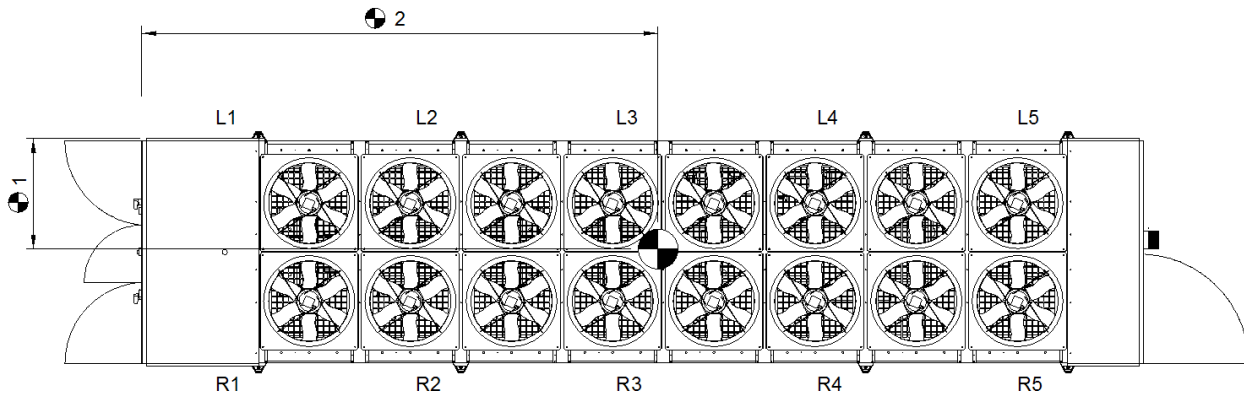
● = (C of G)

	Point Loadings (kg)												Operating Weight (kg)	C of G (mm)	
	L1	L2	L3	L4	L5	L6	R1	R2	R3	R4	R5	R6		● 2	● 1
OFC076R16-66HS1	1285	1280	1450	1320	1120	N/A	1255	1220	1365	1205	1035	N/A	12535	4640	1070
OFC076R16-66MS1	1280	1265	1440	1315	1120	N/A	1250	1210	1355	1200	1035	N/A	12470	4650	1070
OFC081R16-76MS2	1280	1270	1440	1315	1120	N/A	1255	1215	1355	1205	1035	N/A	12490	4650	1070
OFC081R16-76ML2	1280	1270	1440	1315	1120	N/A	1255	1215	1355	1205	1035	N/A	12490	4650	1070
OFC087R16-77ML2	1280	1270	1445	1320	1120	N/A	1255	1215	1360	1205	1035	N/A	12505	4650	1070
OFC077R18-66HS1	1205	1225	1405	1370	1160	890	1170	1165	1320	1255	1055	805	14025	5350	1060
OFC083R18-76ML2	1200	1215	1395	1370	1160	890	1170	1155	1310	1255	1055	805	13980	5350	1060
OFC091R18-87HS4	1215	1240	1385	1380	1205	900	1185	1180	1300	1270	1100	815	14175	5360	1060
OFC095R18-88MS4	1210	1235	1390	1385	1205	900	1175	1175	1305	1275	1100	815	14170	5370	1060
OFC107R18-99HL5	1230	1270	1510	1575	1335	940	1185	1190	1395	1420	1190	820	15060	5440	1050
OFC078R20-66ML1	1320	1310	1400	1355	1300	965	1280	1250	1310	1240	1185	880	14795	5470	1060
OFC084R20-76HL2	1330	1325	1410	1355	1300	965	1290	1265	1320	1240	1185	880	14865	5460	1060
OFC092R20-87MS4	1330	1330	1380	1365	1340	975	1295	1265	1295	1250	1230	885	14940	5490	1060
OFC099R20-88HS6	1350	1360	1470	1540	1490	1015	1300	1285	1365	1400	1355	910	15840	5570	1060
OFC108R20-99HL6	1355	1370	1480	1540	1495	1015	1305	1295	1370	1400	1355	910	15890	5560	1060
OFC078R22-66MS1	1390	1385	1475	1445	1280	1140	1345	1315	1375	1320	1150	1040	15660	5770	1060
OFC084R22-76MS2	1390	1390	1475	1450	1285	1140	1345	1315	1375	1325	1155	1040	15685	5770	1060
OFC093R22-87HS4	1410	1415	1465	1460	1305	1165	1365	1340	1370	1340	1180	1065	15880	5780	1060
OFC097R22-88MS4	1405	1410	1475	1465	1305	1165	1355	1340	1375	1340	1180	1065	15880	5780	1060
OFC109R22-99HL5	1425	1445	1555	1645	1410	1240	1370	1355	1435	1495	1255	1120	16750	5860	1060

- (1) Based on standard unit, for units fitted with options, please contact Airedale.
 (2) Operating weight includes refrigerant charge and system water volume.

Weights, Point Loadings & Centre of Gravity (C of G) - No Pumps

X Type units



● = C of G

	Point Loadings (kg)												Operating Weight (kg)	C of G (mm)	
	L1	L2	L3	L4	L5	L6	R1	R2	R3	R4	R5	R6		2	1
OFC073X16-66HS1	1285	1280	1450	1320	1120	N/A	1255	1220	1365	1205	1035	N/A	12535	4640	1070
OFC074X16-66HL1	1285	1280	1450	1320	1120	N/A	1255	1220	1365	1205	1035	N/A	12535	4640	1070
OFC078X16-76HS2	1285	1280	1450	1320	1120	N/A	1260	1225	1365	1205	1035	N/A	12545	4640	1070
OFC079X16-76HL2	1285	1280	1450	1320	1120	N/A	1260	1225	1365	1205	1035	N/A	12545	4640	1070
OFC083X16-77HL2	1285	1280	1455	1320	1120	N/A	1260	1225	1370	1205	1035	N/A	12555	4640	1070
OFC075X18-66MS1	1200	1210	1395	1365	1160	890	1165	1155	1310	1255	1055	805	13965	5350	1060
OFC080X18-76ML2	1200	1215	1395	1370	1160	890	1170	1155	1310	1255	1055	805	13980	5350	1060
OFC088X18-87HS4	1215	1240	1385	1380	1205	900	1185	1180	1300	1270	1100	815	14175	5360	1060
OFC095X18-88HS6	1225	1265	1505	1575	1335	940	1180	1185	1385	1415	1190	820	15020	5440	1050
OFC102X18-99HL6	1230	1270	1515	1575	1335	940	1185	1190	1395	1420	1190	825	15070	5440	1050
OFC076X20-66HS1	1325	1325	1410	1355	1300	965	1285	1260	1320	1240	1185	880	14850	5470	1060
OFC081X20-76ML2	1320	1315	1400	1355	1300	965	1285	1250	1310	1240	1185	880	14805	5470	1060
OFC092X20-87HS6	1350	1355	1455	1535	1490	1015	1300	1275	1345	1395	1355	910	15780	5570	1060
OFC097X20-88HL5	1350	1360	1470	1540	1490	1015	1300	1285	1365	1400	1355	910	15840	5570	1060
OFC104X20-99HL6	1355	1370	1480	1540	1495	1015	1305	1295	1370	1400	1355	910	15890	5560	1060
OFC076X22-66HS1	1395	1395	1485	1450	1280	1140	1350	1325	1385	1325	1150	1040	15720	5760	1060
OFC082X22-76ML2	1390	1390	1475	1450	1285	1140	1345	1315	1375	1325	1155	1040	15685	5770	1060
OFC091X22-87HS4	1410	1415	1465	1460	1305	1165	1365	1340	1370	1340	1180	1065	15880	5780	1060
OFC093X22-87ML5	1415	1415	1520	1635	1410	1240	1360	1330	1400	1485	1255	1120	16585	5880	1060
OFC105X22-99HL6	1425	1445	1555	1645	1410	1240	1370	1355	1440	1495	1255	1125	16760	5860	1060

- (1) Based on standard unit, for units fitted with options, please contact Airedale.
- (2) Operating weight includes refrigerant charge and system water volume.

Installation Data

Unit Lifting

- **Employ lifting specialists**
- Local codes and regulations relating to the lifting of this type of equipment should be observed
- Use the appropriate spreader bars/lifting slings (provided by others) with the holes/lugs provided
- Attach individual lifting chains to each of the lifting eye bolts/lifting lugs provided; each individual chain must be capable of lifting the whole unit

IMPORTANT

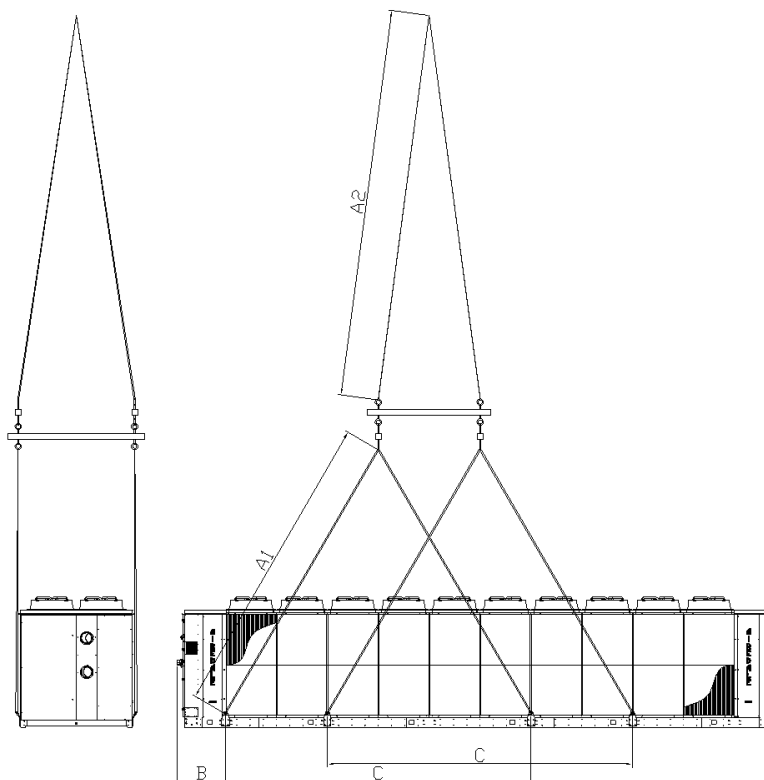
Do not use 1 chain between 2 lifting points to avoid load shift.
Only use lifting points provided.

- Lifting hole/lug dimension: 40mm
- Chains/slugs **MUST NOT** interfere with the casing or fan assembly to avoid damage
- Lift the unit slowly and evenly

IMPORTANT

If the unit is dropped, it should immediately be checked for damage and reported to Airedale.

Lifting Dimensions



		A1 (Min)	A2 (Min)	B	C
16 FAN	mm	5000	5000	520	5000
18 FAN	mm	6000	5000	520	5650
20 FAN	mm	7000	5000	520	6650
22 FAN	mm	7000	5000	520	6650

IMPORTANT

For models with optional pumps fitted, a separate instruction will be provided.

Installation Data

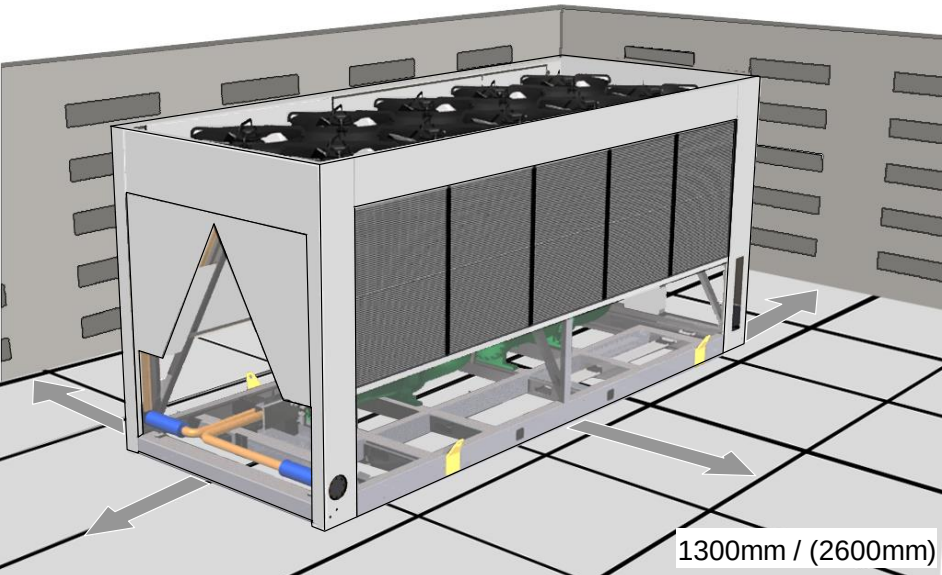
Positioning

- The installation position should be selected with the following points in mind:
- Position on a stable and even base, levelled to ensure that the compressor operates correctly
 - Levelling should be to +/- 5mm
 - Where vibration transmission to the building structure is possible, fit spring anti-vibration mounts and flexible water connections
 - Observe airflow and maintenance clearances
 - Pipework and electrical connections are readily accessible
 - Where multiple units are installed, due care should be taken to avoid the discharge air from each unit adversely affecting other units in the vicinity
 - Within a side enclosed installation, the fan MUST be higher than the enclosing structure
 - Increase airflow and maintenance clearances for side-enclosed or multiple unit applications
 - Ensure there are no obstructions directly above the fans
 - Allow free space above the fans to prevent air recirculation

CAUTION

 Prior to connecting services, ensure that the equipment is installed and completely level.

Airflow & Maintenance Clearances



Application	Distance from Overall Base Dimension
Single unit	1300mm
Side-enclosed or multiple units	2600mm

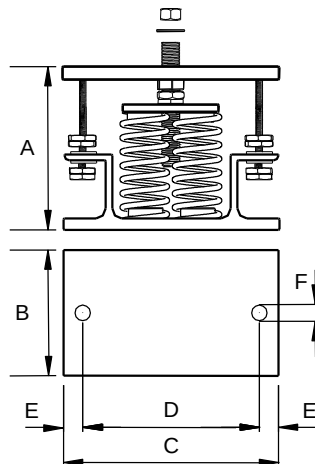
Installation Data

Anti vibration mounting (optional)

Spring Type

Each mount is coloured to indicate the different loads, refer to AV selection sheet supplied separately for correct allocation.

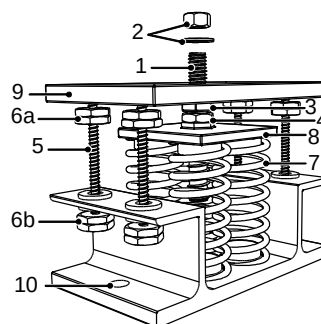
Dimensions



	A(1)	B	C	D	E	FØ
mm	162	130	225	186	20	16

- (1) Unloaded dimension.
(2) For models with optional pumps fitted, please consult Airedale.

Components



- 1 Locating Screw
- 2 Retaining Nut & Washer
- 3 Levelling Screw
- 4 Levelling Lock Nut
- 5 Retaining Studs
- 6a Upper Retaining Nuts
- 6b Lower Retaining Nuts
- 7 Spring assembly
- 8 Pressure Plate
- 9 Top Plate
- 10 Bolting-down holes

Installation

- 1 Locate and secure mount using bolting down holes (10) in base plate.
- 2 Ensure mounts are located in line with the unit base.
- 3 If applicable, remove compressor enclosure covers to allow access to mount fixing holes in the unit base.
- 4 Lock the upper retaining nuts (6a) to the underside of the top plate (9) before a load is applied.
- 5 Slacken levelling lock nut (4). (the levelling screw will not move if this is not slackened)
- 6 Remove retaining nut and washer (2), lower the unit onto the mounts and replace retaining nut and washer.
- 7 Beginning with the mount with the largest deflection adjust the height of each mount using the levelling screw (3).

CAUTION

Mountings must be adjusted incrementally in turn. Do not fully adjust 1 mount at a time as this may overload and damage springs.

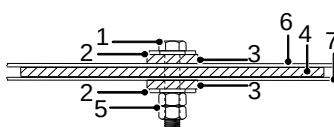
- 7 When all mounts are level, lock each into place using the levelling lock nut (4).
- 8 Lock all retaining nuts (6a and 6b) to the extreme ends of the retaining studs (5).

CAUTION

Do not connect any services until all anti vibration mounts have been fully adjusted.

Pad Type

Components/Installation



- 1 M16 Bolt (Not Supplied)
- 2 Washer (Not Supplied)
- 3 Fixing Pad 506-063
- 4 A V Pad 506-062
- 5 2 x M16 Nut (Not Supplied)
- 6 Unit Base
- 7 Unit Mounting Plinth

Installation Data

Water system

Chilled water pipework and ancillary components must be installed in accordance with:

- National and Local Water supply company standards
- The manufacturer's instructions are followed when fitting ancillary components
- The system liquid is treated to prevent corrosion and algae forming
- In ambients of 0°C and below, where static water can be expected, or when water supply temperatures of +5°C or below is required, the necessary concentration of Glycol or use of an electrical trace heater must be included
- The schematic is referred to as a guide to ancillary recommendations

CAUTION



The unit water connections are NOT designed to support external pipework, pipework MUST be supported separately.

Standard recommended installation

(Parts Supplied by Others)

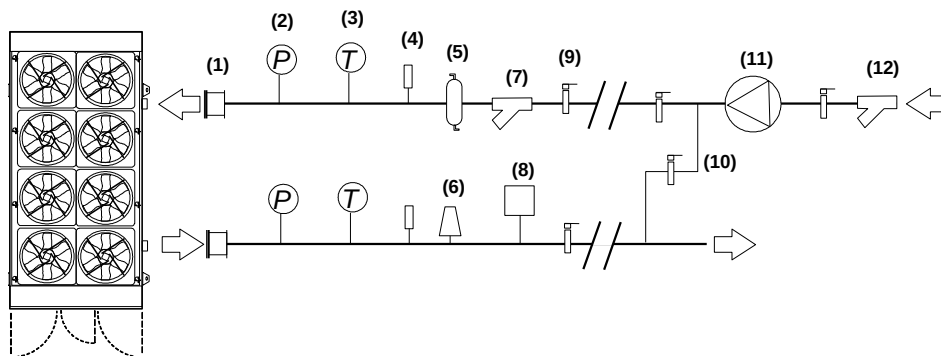
General

The following diagram illustrates the minimum component installation requirements. A wide range of optional extras are available to suit various applications.

CAUTION



The following installation recommendations should be adhered to. Failure to do this may invalidate the chiller warranty.



- | | |
|--------------------------------------|------------------------------------|
| (1) Flexible connections | (7) Strainer (optional extra) |
| (2) Pressure gauges | (8) Flow switch |
| (3) Temperature gauges | (9) Shut off valves |
| (4) Binder points | (10) Bypass circuit (for flushing) |
| (5) De-aerator (optional extra) | (11) Pump |
| (6) Auto air vent (at highest point) | (12) Pump strainer |

CAUTION



Full design water flow MUST be maintained at all times. Variable water volume is NOT recommended and will invalidate warranty

CAUTION



The correct operation of the flow proving device is critical if the chiller warranty is to be valid.

CAUTION



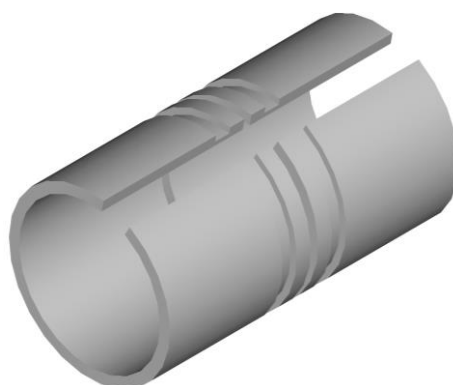
Following components are fitted within the chiller unit as standard:

- Temperature Sensors
- Drain Point
- Auto Air Vent

Grooved & Clamped Type Connection

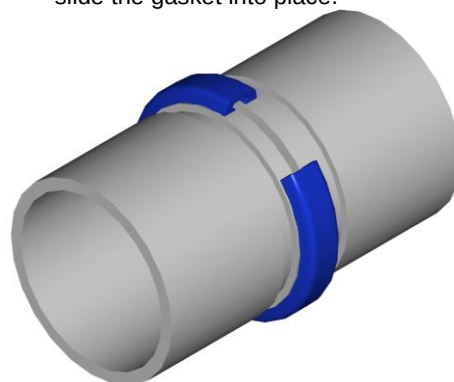
1 Place Grooved Ends Together

- Note that an expansion gap of 5mm is shown here



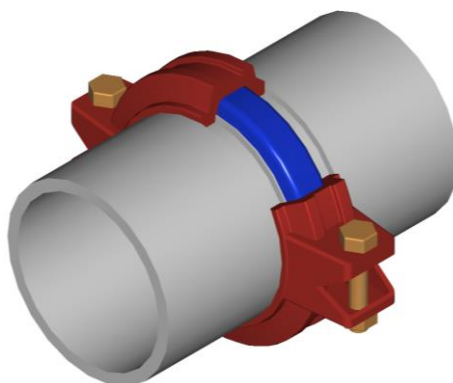
2 Locate Rubber Gasket

- The gasket should be checked for compatibility and damage prior to installation.
- A thin coat of sealing lubricant should be applied to both the inside and outside mating surfaces.
- Slip the gasket fully onto one of the pipe ends, align the second pipe and slide the gasket into place.



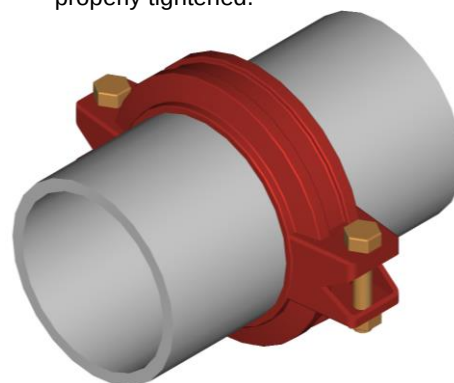
3 Place Clamp over Gasket

- Wrap the 2-halves of the clamp over the gasket.
- Ensure the gasket fits snugly within the grooved recess inside the clamp and that the clamp seats correctly.



4 Secure Clamp

- Tighten the bolts incrementally and evenly at both sides until a leak free seal is formed.
- The gasket should not be visible beneath the clamp when the bolts are properly tightened.



Installation Data

Water System

Component Recommended Requirements

The recommended requirements to allow commissioning to be carried out correctly are:

- The inclusion of Binder Points adjacent to the flow and return connections, to allow temperature and pressure readings.
- A flow switch or equivalent, fitted adjacent to the water outlet side of the unit Chiller
- A 20 mesh strainer fitted prior to the evaporator inlet.
- A water-flow commissioning valve set fitted to the system.
- In multiple chiller installations, 1 commissioning valve set is required per chiller.
- Isolating valves should be installed adjacent to all major items of equipment for ease of maintenance.
- Balancing valves can be installed if required to aid correct system balancing.
- All chilled water pipework must be insulated and vapour sealed to avoid condensation.
- If several units are installed in parallel adjacent to each other, reverse return should be applied to avoid unnecessary balancing valves.

Pump Statement

When installing circulating water pumps or equipment containing them, the following rules should be applied:

- Ensure the system is filled with liquid then vented and the pump primed with water before running the pump, this is required because the pumped liquid cools the pump bearings and mechanical seal faces
- To avoid cavitation the NPSH (Net Positive Suction Head) incorporating a safety margin of 0.5m head must be available at the pump inlet during operation

Interlocks & Protection

Always electrically interlock the operation of the chiller with the pump controls and flow proving device for safety reasons.

CAUTION



Failure to install safety devices will invalidate the chiller warranty.

CAUTION



Do not rely solely on the BMS to protect the chiller against low flow conditions.

An evaporator pump interlock and flow proving device MUST be directly wired to the chiller, to *Interconnecting Wiring* diagram.

Installation Data

General

- As standard the equipment is designed for 400V, 3 phase, 3 wire 50Hz direct to busbar and a separate permanent 230V, 1 phase, 50Hz supply, to all relevant IEE regulations, British standards and IEC requirements
- The control voltage to the interlocks is 24V, always size the low voltage interlock and protection cabling for a maximum voltage drop of 2V
- Avoid large voltage drops on cable runs, particularly low voltage wiring



The equipment contains live electrical and moving parts, ISOLATE prior to maintenance or repair work.

A fused and isolated electrical supply of the appropriate phase, frequency and voltage should be installed.

The unit isolators DO NOT isolate the incoming mains supply through busbars, but isolate the individual electrical panels. Isolate REMOTELY the mains incoming supply to the BUSBAR chamber prior to maintenance or repair work.

A separately fused, locally isolated, permanent single phase and neutral supply MUST BE FITTED for the compressor oil heater, evaporator trace heating and control circuits, FAILURE to do so will INVALIDATE WARRANTY.

CAUTION



ALL work MUST be carried out by technically trained competent personnel.

The Emergency Stop MUST NOT be used to stop the chiller other than in the event of an emergency.

Wires should be capable of carrying the maximum load current under non-fault conditions at the stipulated voltage.

To reduce down time, if possible support the above supply with a UPS.

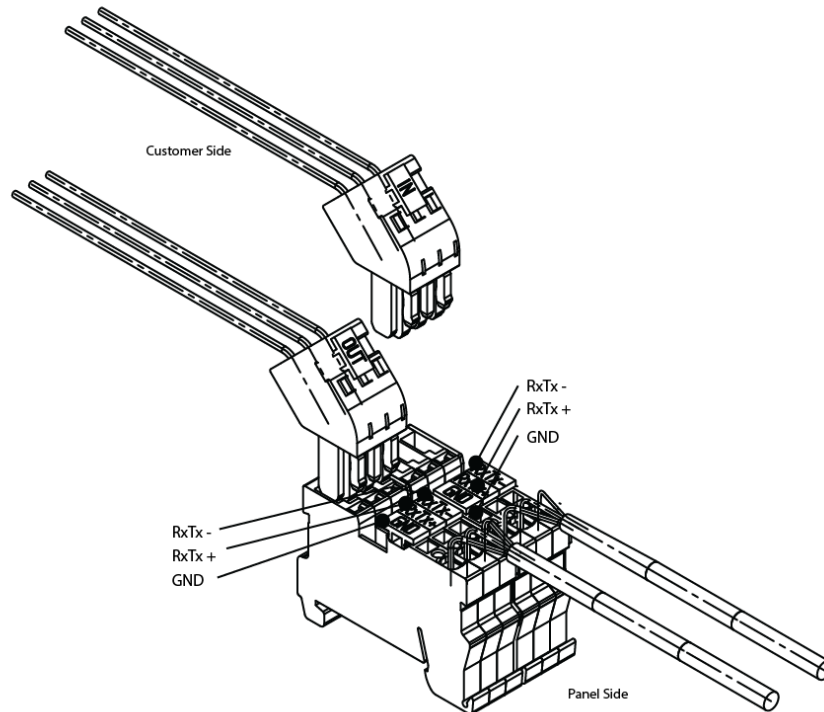
Ensure correct phase rotation.

Interconnecting Wiring



- (1) A separate permanent supply ensures that essential items such as crankcase heaters / trace heating are energised at all times. Failure to do may cause unit malfunction.
- (2) MUST be directly wired to the chiller to validate warranty.

pLAN Termination



IMPORTANT: The plugged termination ensures that the connections are made simultaneously. Failure to attach the cables this way may cause damage to the controller.

Storage Recommendations

Airedale recommends that equipment should be stored in an ambient protected warehouse facility.

- The unit should be stored within a heated warehouse ensuring that the temperature does not fall below 0°C.
- All water should be drained from the unit
- Refrigerant line shut off valves are closed.
- All electronic expansion valves should be driven closed.

Pre Start following storage

Before turning the unit on after extended periods of storage the following procedures and checks must be carried out over and above any commissioning checks.

All low temperature protection devices must be turned on for a minimum of 8 hours.

Procedures

These include

- Compressor crankcase heaters.
- Panel heaters.
- Electric trace heating.

Checks

Waterside

- Check that the 3 way valve operates correctly.
- Check that flow switches operate correctly.
- Check that differential pressure sensor operates.

Electrical

- Condenser fans operate satisfactory (Minimum speed to maximum speed).
- Electrical seals and glands are satisfactory and have not cracked
- All electrical terminal boxes are free from moisture.
- All cable insulation is satisfactory and does not have any signs of damage.

Refrigeration

- Ensure all Manual ball valves are open
- Carry out an F-gas inspection ensuring no refrigerant leaks.

The unit should be regularly visually inspected during storage to ensure that no condensation has formed on or within the unit.



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