NDQ - N2DQ Condensing Unit

engineering for a better world



N D Q 30 - 3 M X - C

Range	N
Comp Technology	D = Single Digital Scroll, 2D =Twin Digital Scroll
Unit Type	Q = Quiet (6)
Compressor	eg. 30, 45, 60
Phase	3 = 3 Phase
Temperature	M = Medium, L = Low,
Oil Separator	S = Oil separator, X = No oil separator, V = EVI
Coil/Case	C, D, E



NDQ - N2DQ Condensing unit

GEA Searle NDQ and N2DQ Digital condensing units are the latest addition to the Searle range. They feature the new scroll digital compressor which precisely matches the refrigeration load to provide significant energy savings. The N2DQ is the twin compressor choice, with 1 digital scroll and 1 normal scroll compressor.

The NDQ comprises three models and N2DQ range comprises five models using refrigerants R404A/R507 and R407C. The low temperature models (-40 °C to -10°C) cover a capacity range of 6.22 kW to 12.22 kW while the medium temperature units (-20°C to +10°C) range from 7.19 kW to 20.7 kW.

N2CQ Standard Features

CE Marked Unit, weatherproof housing with separate acoustically lined compressor compartment, Concealed, low noise condenser fans, Copper tube coil with vinyl-coated aluminium fins, Capacity control 100-10-0% for NDQ, 100-5-0% for N2DQ, Fully-wired control panel with mains isolator, Electronic step controller, Low ambient fan speed control, MCB protected crankcase heaters.

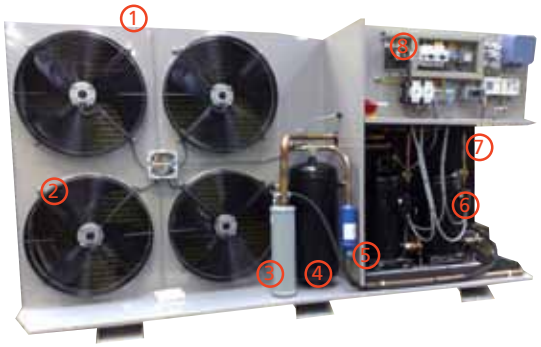
Twin scroll compressors (with liquid injection and oil management system on low temperature 'LS' models), Compressor motor starter with short circuit and overload protection, Compressor contactors, Compressor start delay and anti-recycle timer integrated into step control, Volt-free contact for alarm signal, HP/LP switch auto reset, Sight glass and filter drier, Liquid receiver with fitted pressure relief valve, Rotalock service valves on compressors and receiver, Oil level sight glass.



1. Vinyl coated condenser coil
2. Condenser fanset
3. Control panel
4. Liquid receiver with fitted PRV
5. Compressor
6. Acoustic insulation



1. Main controller with compressor anti-cycle protection
2. Main isolation
3. Overload/manual motor starter
4. Alarm terminals
5. Compressor contactor



1. Vinyl coated condenser coil
2. Condenser fanset
3. Oil separator
4. Liquid receiver with fitted PRV
5. Filter drier/sightglass
6. Compressor
7. Acoustic insulation
8. Control panel

NDQ - N2DQ Single & Twin condensing unit

NDQ 'L' Range Low noise digital EVI Low Temperature

R404A

Case C



(H) 1078 x (W) 1128 x (D) 505

Model	Ambient	Saturated Suction Temperature (°C)						
	(°C)	-40	-35	-30	-25	-20	-15	-10
NDQ18-3LV-C	27	5146	6311	7476	8968	10459	12388	14316
	32	5119	6225	7331	8765	10198	12078	13959
	35	5103	6174	7245	8643	10041	11893	13744
	43	5060	6037	7014	8318	9623	11398	-

N2DQ 'L' Range Low noise digital twin EVI compressor Low Temperature

Case E



(H) 1192 x (W) 2260 x (D) 600

Model	Ambient	Saturated Suction Temperature (°C)						
	(°C)	-40	-35	-30	-25	-20	-15	-10
N2DQ36-3LV-E	27	10108	12400	14692	17625	20559	24327	28096
	32	10044	12225	14405	17221	20036	23708	27380
	35	10006	12120	14234	16978	19722	23337	26951
	43	9904	11840	13776	16331	18886	22346	25806

NDQ 'M' Range Low noise single digital Medium Temperature

Case C



(H) 1078 x (W) 1128 x (D) 505

Case E



(H) 1192 x (W) 2260 x (D) 600

Model	Ambient	Saturated Suction Temperature (°C)						
	(°C)	-20	-15	-10	-5	0	5	-10
NDQ30-3MX/S-C	27	5454	6556	7654	8987	10320	14466	16341
	32	5077	6098	7119	8364	9609	13439	15181
	35	4851	5824	6798	7990	9182	12822	14486
	43	4247	5095	5942	6993	8045	11179	12630
NDQ38-3MX/S-C	27	6644	7968	9293	10942	12591	17577	20182
	32	6183	7410	8637	10167	11696	16813	19318
	35	5907	7075	8244	9702	11159	16355	18800
	43	5170	6183	7195	8461	9728	-	-
NDQ45-3MX/S-C	27	7188	8914	10640	12806	14972	17577	20182
	32	6812	8472	10133	12220	14308	16813	19318
	35	6587	8208	9828	11869	13909	16355	18800
	43	5986	7501	9016	10932	-	-	-
NDQ58-3MX/S-E	27	12889	12889	15438	18361	21284	24779	28273
	32	11765	11765	14337	17085	19833	23075	26317
	35	11090	11090	13677	16320	18962	22053	25144
	43	9291	9291	11916	14278	16641	19327	22014
NDQ76-3MX/S-E	27	13304	16439	19574	23118	26663	30732	34801
	32	11948	15064	18480	21488	24797	28573	32349
	35	11135	14239	17343	20510	23677	27277	30878
	43	8967	12040	15113	17902	20691	23823	26954

N2DQ 'M' Range Low noise digital twin compressor Medium Temperature

Case D



(H) 1192 x (W) 1560 x (D) 600

Case E



(H) 1192 x (W) 2260 x (D) 600

Model	Ambient	Saturated Suction Temperature (°C)						
	(°C)	-20	-15	-10	-5	0	5	-10
N2DQ60-3MX-D	27	10537	12640	14743	17284	19825	22745	25666
	32	9734	11684	13633	16002	18371	21122	23872
	35	9253	11110	12966	15233	17499	20148	22796
	43	7969	9579	11190	13182	15173	-	-
N2DQ60-3MX-E	27	11154	13511	15868	18803	21737	25212	28686
	32	10343	12536	14728	17472	20217	23489	26762
	35	9856	11950	14044	16674	19304	22456	25608
	43	8558	10389	12220	14546	16871	19700	22530
N2DQ76-3MS-E	27	13385	16141	18897	22303	25708	29663	33618
	32	12408	14964	17519	20690	23860	27545	31230
	35	11822	14258	16693	19722	22751	26274	29797
	43	10260	12374	14488	17141	19793	22885	25976
N2DQ90-3MX-E	27	15216	18654	22091	26344	30597	35660	40723
	32	14237	17477	20716	24743	28770	33557	38343
	35	13650	16771	19891	23783	27674	32295	36915
	43	12084	14888	17691	21221	24751	28929	-
N2DQ90-3MX-E	27	18097	23019	27942	32879	37817	43263	48709
	32	16011	20900	25789	30432	35075	40116	45157
	35	14760	19629	24497	28964	33430	38228	43025
	43	11424	16238	21053	25048	29044	-	-

Performance data in Watts rated at 20°C Return Gas Temperature, 0K Sub Cooling

NDQ - N2DQ Technical Data

Compressor		Case Size Drawing	Fansets (230V/1ph/50Hz)			Connection Sizes		Liquid Receiver	Dry Weight	Sound Levels	
FLC	LRA		Number of Fans and Diameter	FLC	LRA	Suction	Liquid			dB(A)*	
(A)	(A)			(A)	(A)	inches	inches	(L)	(kg)	Max*	Min*
13.8	74.0	C	2 x 400 6pl	1.4	2.8	7/8"	1/2"	6.2	167	42	36

Compressor		Case Size Drawing	Fansets (230V/1ph/50Hz)			Connection Sizes		Liquid Receiver	Dry Weight	Sound Levels	
FLC	LRA		Number of Fans and Diameter	FLC	LRA	Suction	Liquid			dB(A)*	
(A)	(A)			(A)	(A)	inches	inches	(L)	(kg)	Max*	Min*
13.8 12.0	74.0 74.0	E	4 x 450 6pl	4.0	7.2	1 5/8"	7/8"	18.0	305	45	41

Compressor		Case Size Drawing	Fansets (230V/1ph/50Hz)			Connection Sizes		Liquid Receiver	Dry Weight	Sound Levels	
FLC	LRA		Number of Fans and Diameter	FLC	LRA	Suction	Liquid			dB(A)*	
(A)	(A)			(A)	(A)	inches	inches	(L)	(kg)	Max*	Min*
7.9	51.5	C	2 x 400 6pl	1.4	2.8	7/8"	1/2"	6.2	159	41	34
11.3	65.5	C	2 x 400 6pl	1.4	2.8	7/8"	1/2"	6.2	159	41	34
11.4	74.0	C	2 x 400 6pl	1.4	2.8	7/8"	1/2"	6.2	170	41	32
16.4	95.0	E	4 x 450 6pl	4	7.2	1 3/8"	5/8"	18	276	45	36
20.4	118	E	4 x 450 6pl	4	7.2	1 3/8"	5/8"	18	289	45	39

Compressor		Case Size Drawing	Fansets (230V/1ph/50Hz)			Connection Sizes		Liquid Receiver	Dry Weight	Sound Levels	
FLC	LRA		Number of Fans and Diameter	FLC	LRA	Suction	Liquid			dB(A)*	
(A)	(A)			(A)	(A)	inches	inches	(L)	(kg)	Max*	Min*
7.9 10.0	51.5 51.5	D	2 x 450 6pl	2.0	3.6	1 3/8"	5/8"	18.0	240	44	38
7.9 10.0	51.5 1.5	E	4 x 450 6pl	4.0	7.2	1 3/8"	5/8"	18.0	295	44	38
11.3 12.8	65.5 65.5	E	4 x 450 6pl	4.0	7.2	1 3/8"	7/8"	18.0	300	44	35
13.0 11.4	74.0 74.0	E	4 x 450 6pl	4.0	7.4	1 3/8"	5/8"	18.0	295	44	35
16.4 15.0	95.0 95.0	E	4 x 450 6pl	4.0	7.2	1 3/8"	7/8"	18.0	335	45	41

* Noise levels in dB(A) at 10m from the front face of the unit, min. noise levels with fan speed control at minimum speed

Correction factors

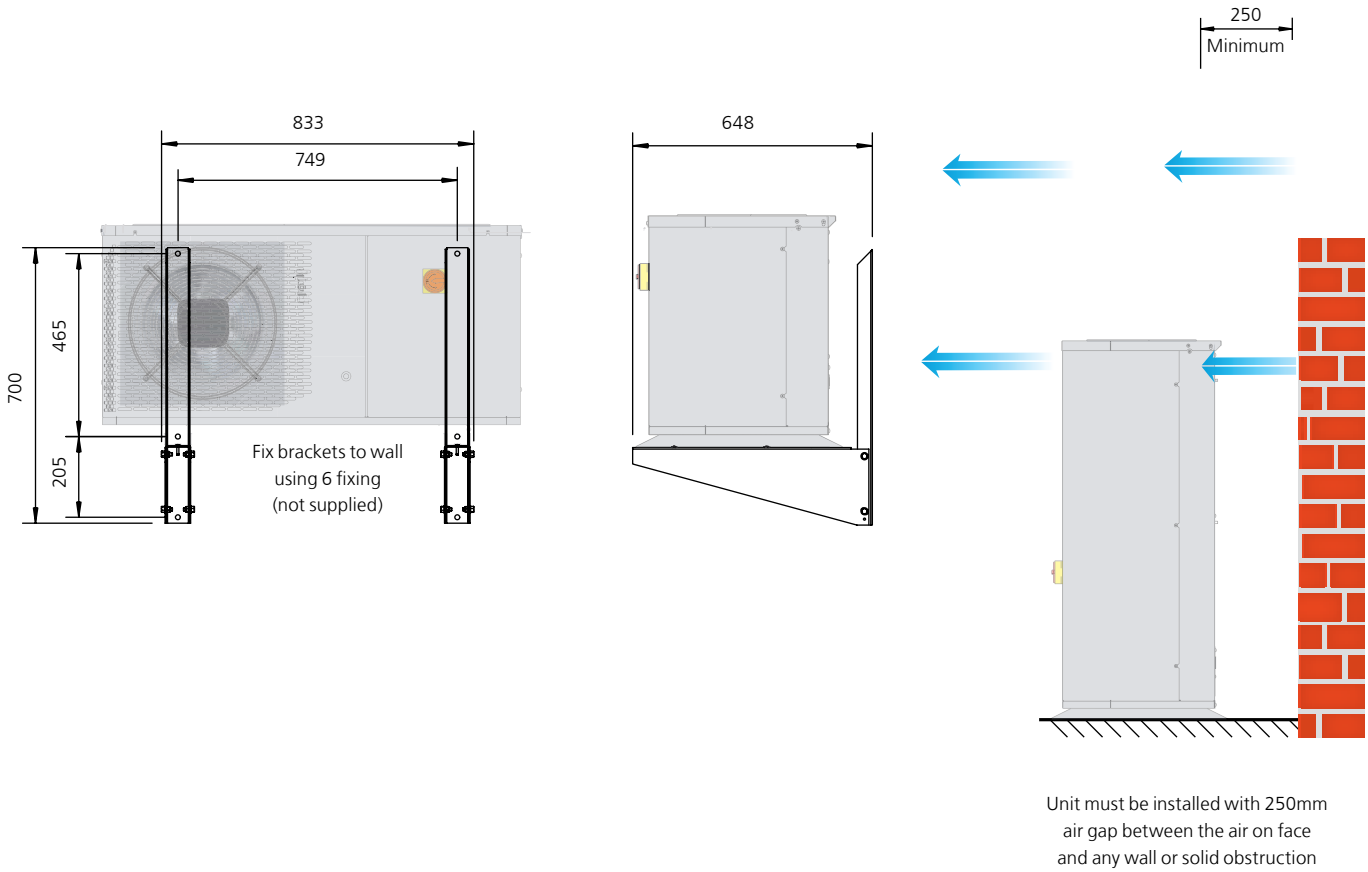
R407C Capacities

The following units can be used with R407C refrigerant : NDQ - N2DQ 'M' units, NSQ-NCQ 'M' units and N2CQ 'M' units. Multiply the relevant R404A capacity by the factor below.

Model average	Ambient	Saturated Suction Temperature (°C)						
	(°C)	-20	-15	-10	-5	0	5	-10
R407C from R404A correction factor	27	0.809	0.848	0.876	0.914	0.942	0.966	0.984
	32	0.807	0.852	0.883	0.926	0.957	0.982	1.001
	35	-	0.854	0.888	0.933	0.967	0.992	1.012
	38	-	-	0.893	0.942	0.978	1.004	-
	43	-	-	-	0.959	-	-	-

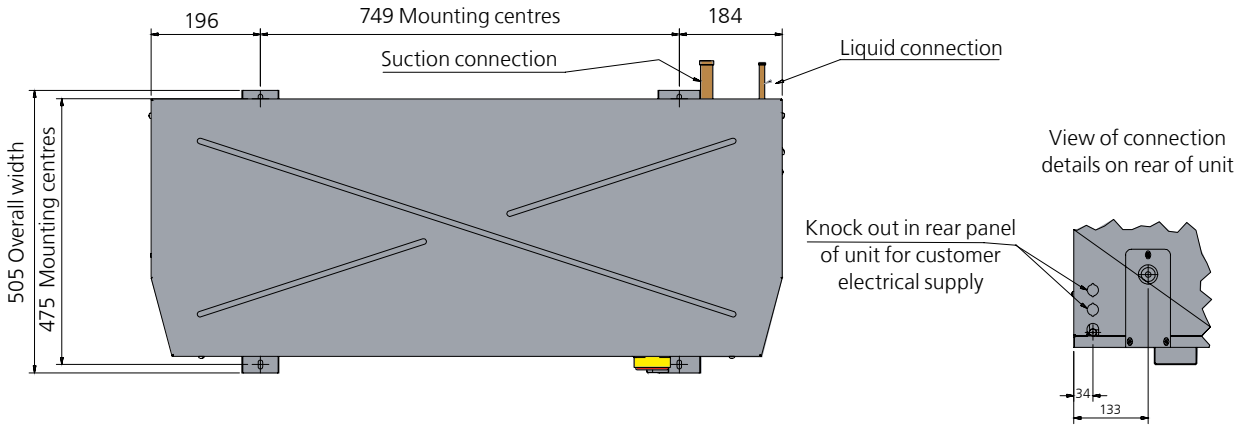
Correction factors are for guidance only, and are subject to a +/-8% Tolerance -20 to -15 SST, and +/-5% Tolerance -10 to +10 SST. Contact GEA Searle for a detailed unit selection if required.

Wall and floor mounting instructions - Case A, B & C

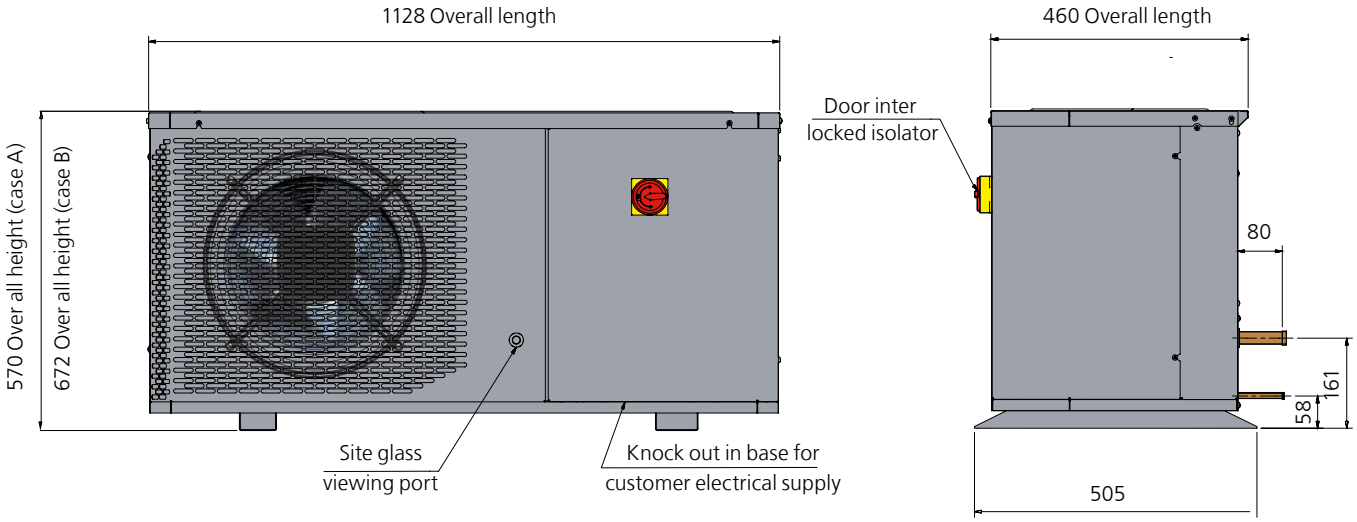


Unit must be installed with 250mm air gap between the air on face and any wall or solid obstruction

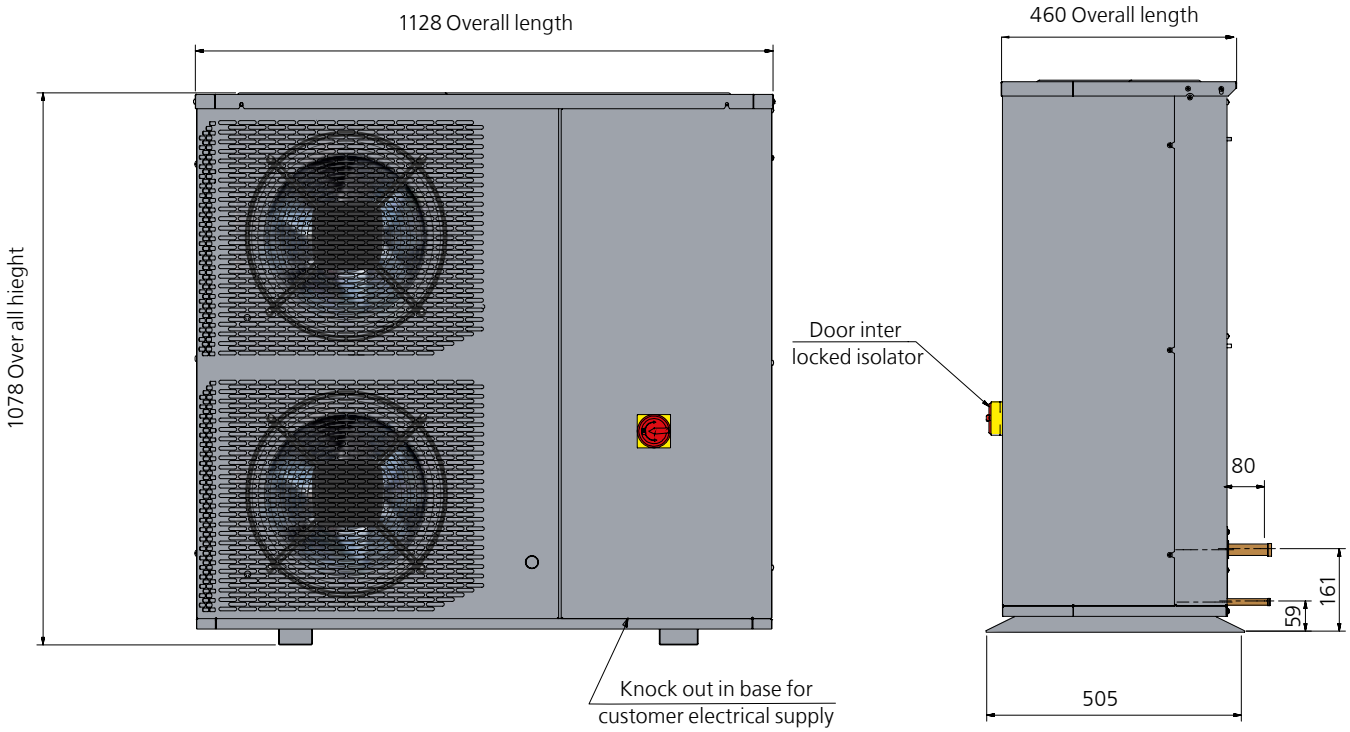
Case A,B & C



Case A and B Front View and End view

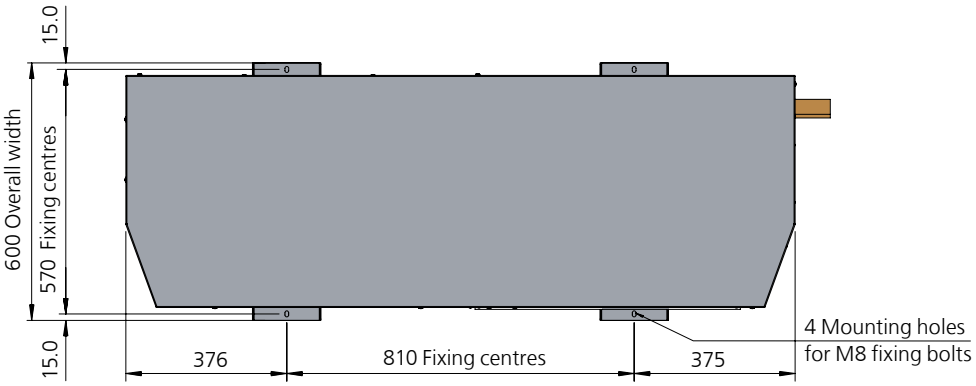


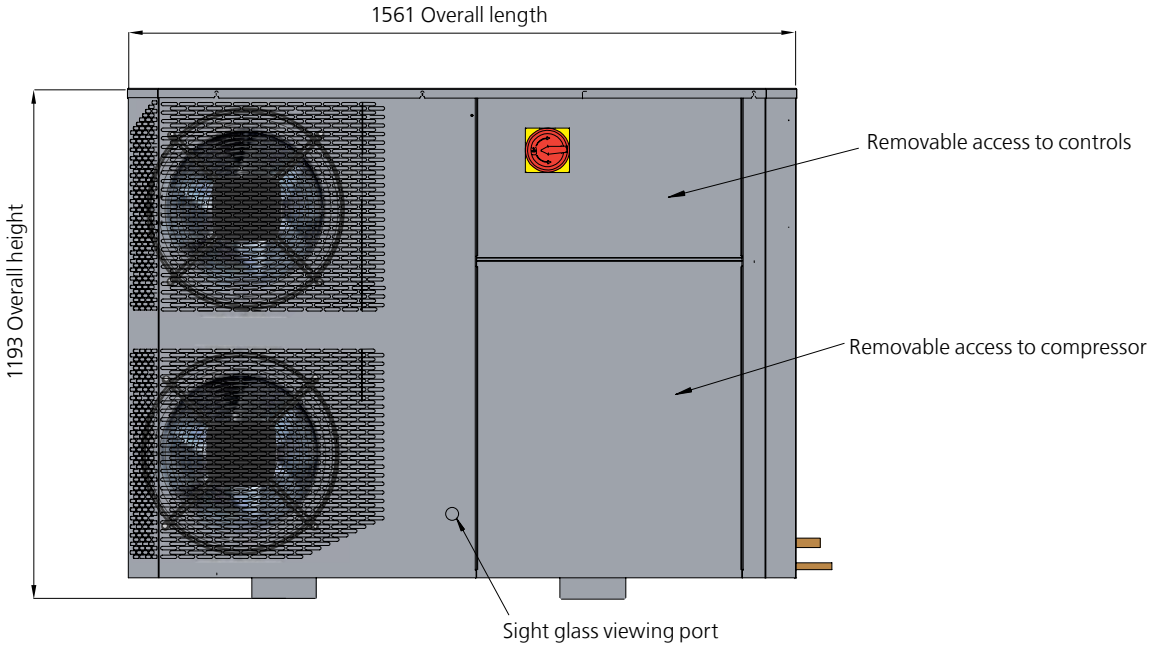
Case C Front View and End view

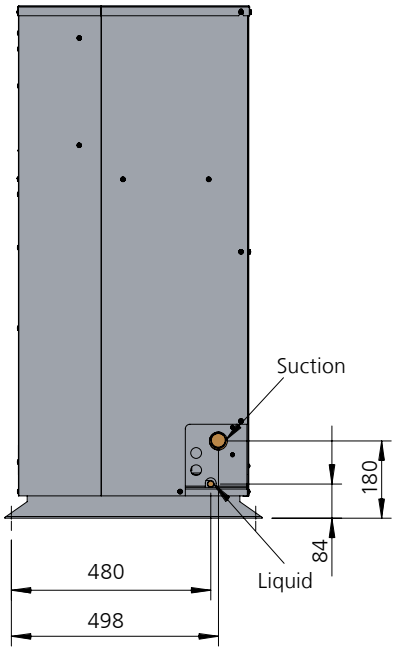


Dimension drawings

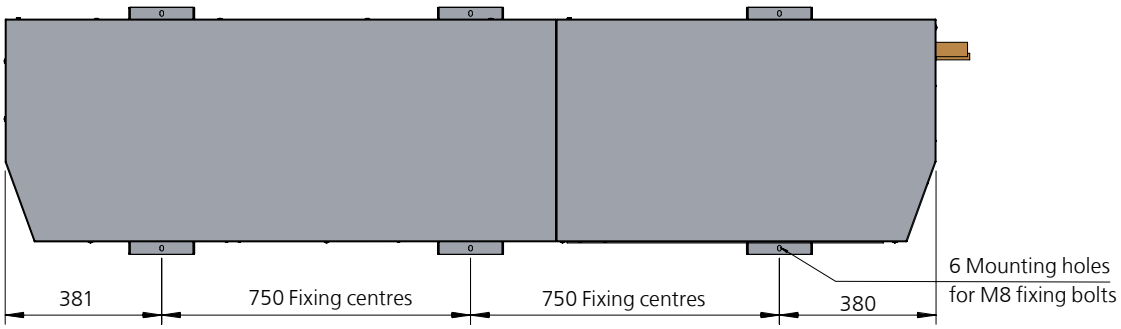
Case D

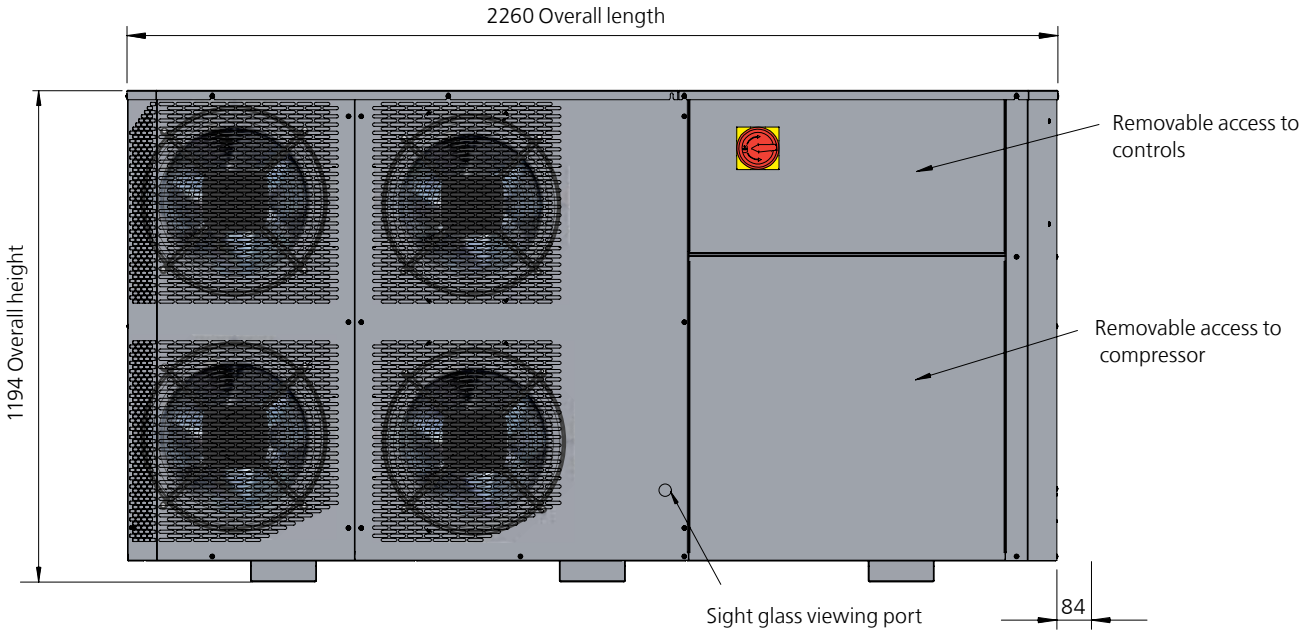


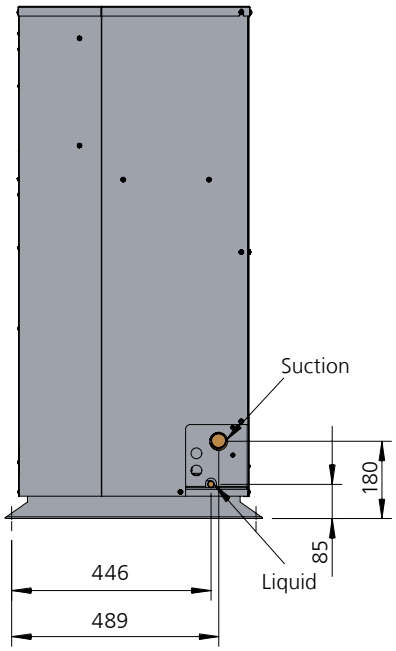




Case E


381
750 Fixing centres
750 Fixing centres
380
6 Mounting holes
for M8 fixing bolts


2260 Overall length
1194 Overall height
Removable access to
controls
Removable access to
compressor
Sight glass viewing port
84


Suction
180
85
Liquid
446
489