

G4 HIGH PROFILE UNIT COOLER

EDEN[®]
The Cool Solution



FNR - Medium Temperature Application
Capacity: 11.67kW to 74.3kW

FLT PD6 - Partial Defrost Application
(Room Temp: +2°C to -6°C)
Capacity: 7.813kW to 47.9kW

FLT - Low Temperature Application
Capacity: 5.143kW to 32.2kW

Effective Air Throw: 27.2m to 33.5m

G4 High Profile Series Unit Cooler FNR / FLT PD6 / FLT

General Features

Coils are designed with the Latest Smart Circuitry. It allows maximum massflow rate of refrigerant to be evenly distributed throughout the evaporator, maximizing coil efficiency thus providing higher efficiency and capacity with a smaller physical unit cooler dimension.

Copper Tubes are accordance with JIS. C12T. Inner Groove Tube (IGT) increases the internal coil surface, having a low oil film coefficient thus providing higher efficiency and capacity.

Casing comes in high quality powder coated Aluminum, according to AA 1100 Standard. Centre plates are built in to enhance air side performance and structural strength for models with 2 or more fans.

Defrosting is by electrical sheathed stainless steel heater elements fitted with molded insulated connection and ultra low temperature silicone leads (rated to -80°C), to ensure effective defrosting and durability. Water resulting from defrosting is channeled to the drain pan with a centrally positioned outlet for positive draining from all points.

Fins are produced from high-grade Aluminum (Aluminum Association - AA 1100 Standard) with Double Sine Wave Pattern and Rippled Fin Edges to provide higher heat transfer efficiency.

Fan Motors used in all the models are high quality German brand motors, fitted with thermistor motor protection and conform to DIN 40050 safety standards. Fan motors are of the highest quality offered in the industry ensuring long life and durability for both high and low temperature application.

Capacity Ratings are thermally guaranteed by Eden and tested in accordance to ASHRAE dry box standards.

Quality Assurance for all Eden products are designed, manufactured and tested in our factories that are ISO 9001 certified.

One Year Warranty for all Eden Heat Exchanger products (Terms and conditions apply).



Reg. No. 200411191526(A)

G4 High Profile Series Unit Cooler FNR / FLT PD6 / FLT

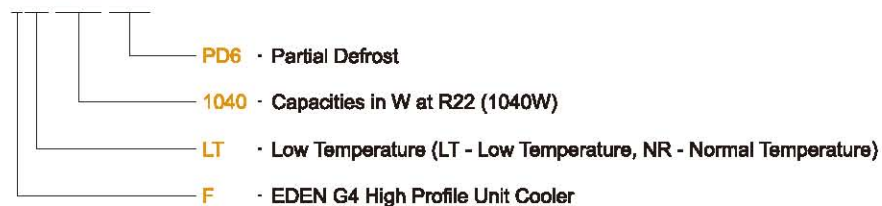
Options

- a) Copper-Fins Coil (Available only for 6FPI to 12FPI)
- b) Epoxy-Coated Aluminum Fin Coil (Only on large volume orders)
- c) Passivated Corrosion Protection For All Aluminum Fin Products
- d) Hot Gas Bypass
- e) Dual Fins (Staggered Fins)
- f) Stainless Steel Casing
- g) Special Circuitry For Ultra Low Temperature Or Overfeed Systems
- h) Chilled Water Coils, Brine Coils Or Liquid Overfeed Coils
- i) CO₂ Application

2

NOMENCLATURE

FLT 1040 PD6

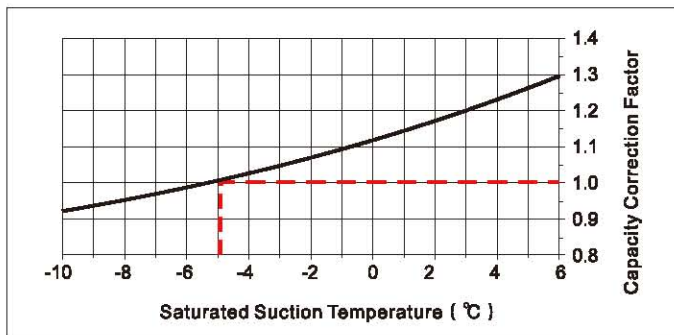


G4 High Profile Series Unit Cooler FNR / FLT PD6 / FLT

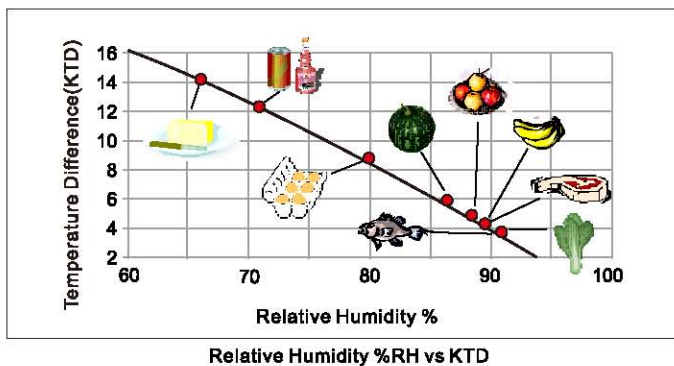
FNR-High Profile Series Unit Cooler Specifications Air Defrost 6FPI Room Temperature +3°C

Model	Capacity (Watts)				Fan Data							
	ASHRAE		EUROVENT SC2*		No. of Fan 500mm	Fan Motor			Fan Speed	Air Flow		Air Throw (m)
	R22	R404A	R22	R404A		(V/Ph/Hz)	(Watts)	(Amps)	(rpm)	(L/s)	(m³/h)	
	8 KTD	8 KTD	8 KTD	8 KTD								
FNR 1180	11,800	11,670	12,892	12,750	1	400/3/50	770	1.70	1,300	2,021	7,276	27.5
FNR 1510	15,100	14,934	16,497	16,316	1	400/3/50	770	1.70	1,300	2,005	7,218	27.5
FNR 1820	18,200	18,000	19,884	19,665	1	400/3/50	770	1.70	1,300	1,985	7,146	27.3
FNR 2090	20,900	20,670	22,833	22,582	1	400/3/50	770	1.70	1,300	1,947	7,009	27.2
FNR 2270	22,700	22,450	24,800	24,527	2	400/3/50	1,540	3.40	1,300	3,981	14,332	31.5
FNR 2780	27,800	27,494	30,372	30,038	2	400/3/50	1,540	3.40	1,300	3,866	13,918	31.4
FNR 3230	32,300	31,945	35,288	34,900	2	400/3/50	1,540	3.40	1,300	3,733	13,439	31.4
FNR 3660	36,600	36,197	39,986	39,546	2	400/3/50	1,540	3.40	1,300	3,565	12,834	31.3
FNR 3870	38,700	38,274	42,280	41,815	3	400/3/50	2,310	5.10	1,300	5,798	20,873	32.5
FNR 4600	46,000	45,494	50,255	49,702	3	400/3/50	2,310	5.10	1,300	5,619	20,228	31.5
FNR 4960	49,600	49,054	54,188	53,592	3	400/3/50	2,310	5.10	1,300	5,480	19,728	31.5
FNR 5290	52,900	52,318	57,793	57,157	4	400/3/50	3,080	6.80	1,300	7,673	27,623	33.5
FNR 7430	74,300	73,483	81,173	80,280	4	400/3/50	3,080	6.80	1,300	7,352	26,467	31.5

Application & Correction Factor Guideline



Refrigerant	Capacity Multiplier
R22	1.00
R407B	0.95
R407C	0.93
R134A	0.975
R404A	0.988
R507	0.988
R417A	0.91



Products	Storage Temperature (°C)	Recommended RH %
Apple	1.5	87%
Banana	5.0	88%
Dairy Product	2.0	65%
Egg, Shell	5.0 to 6.0	80%
Fish, Fresh	0 to 1.0	90 - 95%
Beef, Fresh	0 to 1.0	88 - 92%
Chicken	-1.0 to 1.0	95%
Watermelon	3.0 to 5.0	85%
Vegetables	1.0 to 2.0	90 - 95%
Bottle/Can Drink	3.0 to 4.0	70%

Capacity Ratings & Conditions

All Eden Heat Exchangers are tested in Accordance to ASHRAE Dry Box Standard. (Recommended for Asia Usage)

*EUROVENT Data is used for Comparison Purposes

*EUROVENT Data is based on SC2 Nominal Capacity

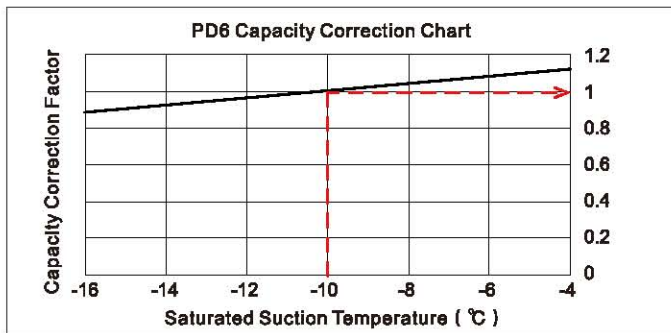
SC2 Condition - Air Inlet Temperature = 0°C and Evaporating Temperature = -8°C

G4 High Profile Series Unit Cooler FNR / FLT PD6 / FLT

FLT PD6-High Profile Series Unit Cooler Specifications Electric Defrost 6FPI Room Temperature -4°C

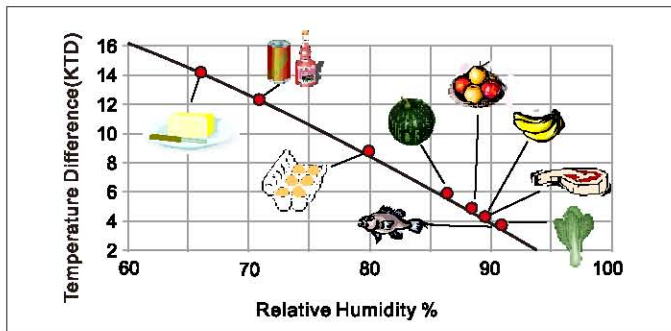
Model	Capacity (Watts)				No. of Fan 500mm	Fan Data						Heater Data		
	ASHRAE		EUROVENT SC2*			Fan Motor			Fan Speed	Air Flow		Air Throw (m)	Coll Heater (Watts)	Drain Pan Heater (Watts)
	R22	R404A	R22	R404A		(V/Ph/Hz)	(Watts)	(Amps)	(rpm)	(L/s)	(m³/h)			
	6 KTD	6 KTD	8 KTD	8 KTD										
FLT 0790 PD6	7,900	7,813	11,850	11,720	1	400/3/50	770	1.70	1,300	2,021	7,276	27.5	2 x 1,230	1 x 750
FLT 1040 PD6	10,400	10,286	15,600	15,428	1	400/3/50	770	1.70	1,300	2,005	7,218	27.5	2 x 1,230	1 x 750
FLT 1230 PD6	12,300	12,165	18,450	18,247	1	400/3/50	770	1.70	1,300	1,985	7,146	27.3	2 x 1,230	1 x 750
FLT 1370 PD6	13,700	13,549	20,550	20,324	1	400/3/50	770	1.70	1,300	1,947	7,009	27.2	2 x 1,230	1 x 750
FLT 1640 PD6	16,400	16,220	24,600	24,329	2	400/3/50	1,540	3.40	1,300	3,866	13,918	31.4	2 x 1,780	1 x 750
FLT 2120 PD6	21,200	20,967	31,800	31,450	2	400/3/50	1,540	3.40	1,300	3,733	13,439	31.4	2 x 1,780	1 x 750
FLT 2640 PD6	26,400	26,110	39,800	39,164	2	400/3/50	1,540	3.40	1,300	3,585	12,834	31.3	2 x 1,780	1 x 750
FLT 2710 PD6	27,100	26,802	40,650	40,203	3	400/3/50	2,310	5.10	1,300	5,798	20,873	32.5	2 x 2,630	1 x 750
FLT 3170 PD6	31,700	31,351	47,550	47,027	3	400/3/50	2,310	5.10	1,300	5,619	20,228	31.5	2 x 2,630	1 x 750
FLT 3600 PD6	36,000	35,604	54,000	53,406	3	400/3/50	2,310	5.10	1,300	5,480	19,728	31.5	2 x 2,630	1 x 750
FLT 4210 PD6	42,100	41,637	63,150	62,455	4	400/3/50	3,080	6.80	1,300	7,352	26,467	31.5	2 x 3,450	1 x 1,000
FLT 4790 PD6	47,900	47,373	71,850	71,060	4	400/3/50	3,080	6.80	1,300	7,168	25,805	31.4	2 x 3,450	1 x 1,000

Application & Correction Factor Guideline



Capacity Correction Factor

Refrigerant	Capacity Multiplier
R22	1.00
R407B	0.95
R407C	0.93
R134A	0.975
R404A	0.989
R507	0.989
R417A	0.91



Relative Humidity %RH vs KTD

Products	Storage Temperature (°C)	Recommended RH %
Apple	1.5	87%
Banana	5.0	88%
Dairy Product	2.0	65%
Egg, Shell	5.0 to 6.0	80%
Fish, Fresh	0 to 1.0	90 - 95%
Beef, Fresh	0 to 1.0	88 - 92%
Chicken	-1.0 to 1.0	95%
Watermelon	3.0 to 5.0	85%
Vegetables	1.0 to 2.0	90 - 95%
Bottle/Can Drink	3.0 to 4.0	70%

Capacity Ratings & Conditions

All Eden Heat Exchangers are tested in Accordance to ASHRAE Dry Box Standard.
(Recommended for Asia Usage)

*EUROVENT Data is used for Comparison Purposes

*EUROVENT Data is based on SC2 Nominal Capacity

SC2 Condition - Air Inlet Temperature = 0°C and Evaporating Temperature = -8°C

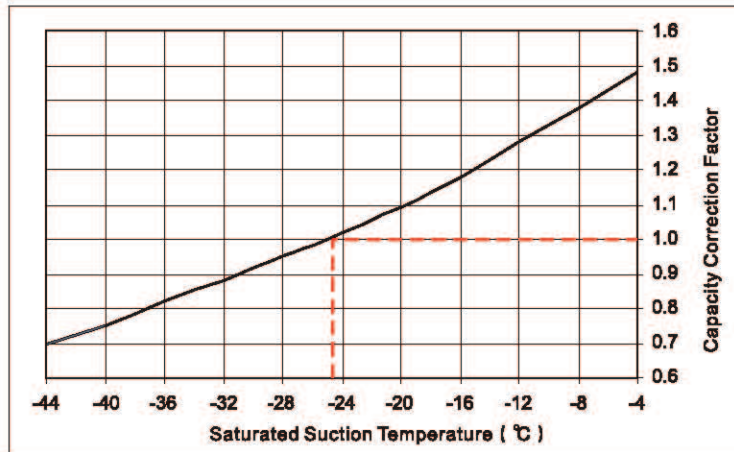
G4 High Profile Series Unit Cooler FNR / FLT PD6 / FLT

FLT-High Profile Series Unit Cooler Specifications Electric Defrost 4FPI Room Temperature -19°C

Model	Capacity (Watts)				Fan Data							Heater Data		
	ASHRAE		EUROVENT SC3*		No. of Fan 500mm	Fan Motor			Fan Speed (rpm)	Air Flow		Air Throw (m)	Coll Heater (Watts)	Drain Pan Heater (Watts)
	R22	R404A	R22	R404A		(V/Ph/Hz)	(Watts)	(Amps)		(L/s)	(m³/h)			
	6 KTD	6 KTD	7 KTD	7KTD		(V/Ph/Hz)	(Watts)	(Amps)	(L/s)	(m³/h)				
FLT 0520	5,200	5,143	6,344	6,274	1	400/3/50	770	1.70	1,300	2,079	7,484	27.5	3 x 1,230	1 x 750
FLT 0700	7,000	6,923	8,540	8,446	1	400/3/50	770	1.70	1,300	2,056	7,401	27.5	3 x 1,230	1 x 750
FLT 0860	8,600	8,505	10,492	10,377	1	400/3/50	770	1.70	1,300	2,021	7,277	27.3	3 x 1,230	1 x 750
FLT 0980	9,800	9,692	11,956	11,824	1	400/3/50	770	1.70	1,300	1,964	7,069	27.2	3 x 1,230	1 x 750
FLT 1120	11,200	11,077	13,664	13,514	2	400/3/50	1,540	3.40	1,300	3,915	14,096	31.5	3 x 1,780	1 x 750
FLT 1450	14,500	14,341	17,690	17,495	2	400/3/50	1,540	3.40	1,300	3,806	13,701	31.4	3 x 1,780	1 x 750
FLT 1720	17,200	17,011	20,984	20,753	2	400/3/50	1,540	3.40	1,300	3,726	13,414	31.4	3 x 1,780	1 x 750
FLT 1860	18,600	18,395	22,692	22,442	3	400/3/50	2,310	5.10	1,300	5,873	21,143	32.5	3 x 2,630	1 x 750
FLT 2120	21,200	20,967	25,864	25,579	3	400/3/50	2,310	5.10	1,300	5,709	20,553	31.5	3 x 2,630	1 x 750
FLT 2540	25,400	25,121	30,988	30,647	3	400/3/50	2,310	5.10	1,300	5,544	19,958	31.5	3 x 2,630	1 x 750
FLT 2860	28,600	28,285	34,892	34,508	4	400/3/50	3,080	6.80	1,300	7,534	27,123	33.5	3 x 3,450	1 x 1,000
FLT 3220	32,200	31,846	39,284	38,852	4	400/3/50	3,080	6.80	1,300	7,404	26,653	32.5	3 x 3,450	1 x 1,000

5

Application & Correction Factor Guideline



Capacity Correction Factor

Refrigerant	Capacity Multiplier
R22	1.00
R407B	0.95
R407C	0.93
R134A	0.975
R404A	0.989
R507	0.989
R417A	0.91

Capacity Ratings & Conditions

All Eden Heat Exchangers are tested in Accordance to ASHRAE Dry Box Standard. (Recommended for Asia Usage)

*EUROVENT Data is used for Comparison Purposes

*EUROVENT Data is based on SC3 Nominal Capacity

SC3 Condition - Air Inlet Temperature = -18°C and Evaporating Temperature = -25°C

G4 High Profile Series Unit Cooler FNR / FLT PD6 / FLT

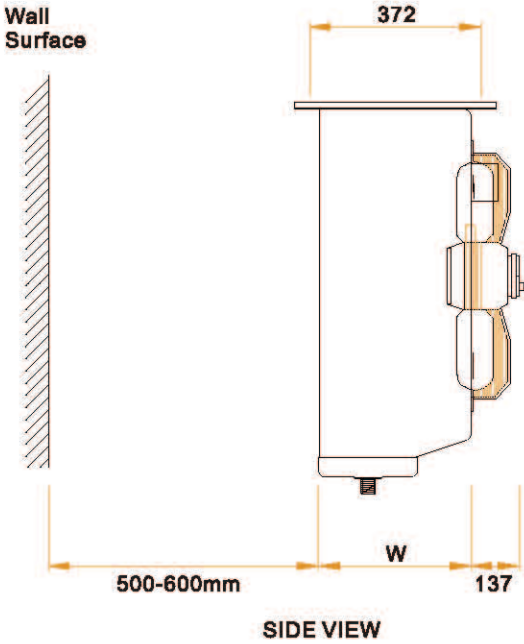
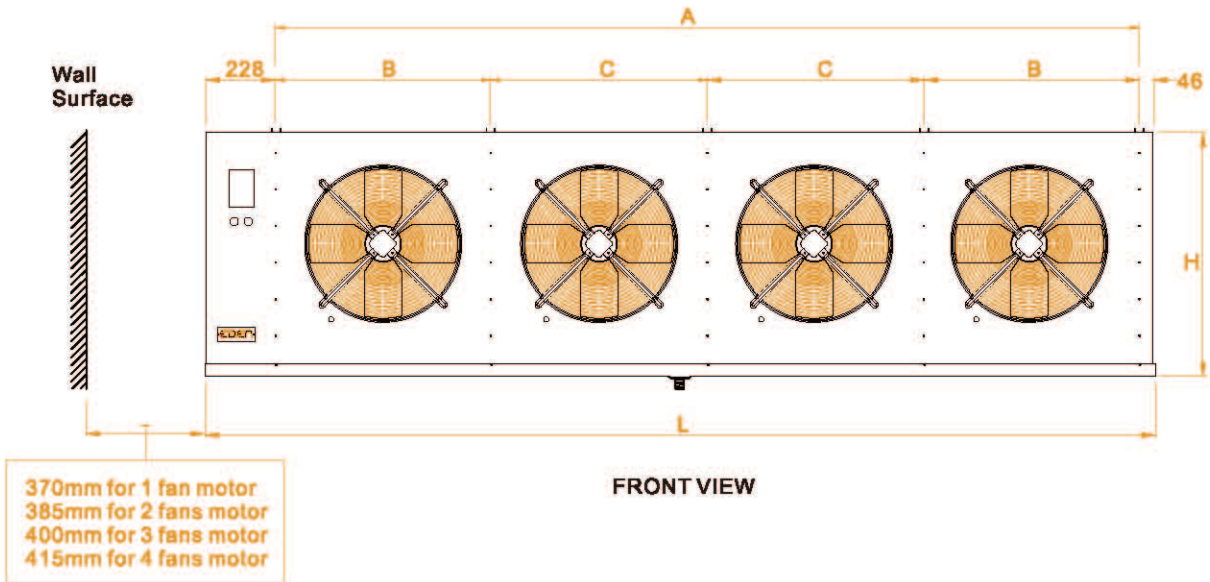
Technical Specifications for FNR / FLT PD6 / FLT

Model	Size (mm)									Weight (kg)*	Liquid Connection (mm)	Suction Connection (mm)	Drain Pipe (mm)
	A	B	C	H	W	L	H*	W*	L*				
FNR 1180	930	-	-	797	333	1,210	1,100	700	1,360	91	12.7	22.2	25.4
FNR 1510	930	-	-	797	333	1,210	1,100	700	1,360	98	12.7	22.2	25.4
FNR 1820	930	-	-	797	333	1,210	1,100	700	1,360	104	12.7	28.6	25.4
FNR 2090	930	-	-	797	333	1,210	1,100	700	1,360	111	15.8	28.6	25.4
FNR 2270	1,450	-	-	797	333	1,730	1,100	700	1,880	133	15.8	28.6	25.4
FNR 2780	1,450	-	-	797	333	1,730	1,100	700	1,880	143	19.0	28.6	25.4
FNR 3230	1,450	-	-	797	333	1,730	1,100	700	1,880	153	19.0	34.9	25.4
FNR 3660	1,450	-	-	797	333	1,730	1,100	700	1,880	163	22.2	34.9	25.4
FNR 3870	2,130	710	710	797	333	2,410	1,100	700	2,560	196	22.2	34.9	25.4
FNR 4600	2,130	710	710	797	333	2,410	1,100	700	2,560	211	22.2	41.3	25.4
FNR 4960	2,130	710	710	797	333	2,410	1,100	700	2,560	226	22.2	41.3	25.4
FNR 5290	2,830	708	708	797	333	3,120	1,100	700	3,270	251	22.2	41.3	25.4
FNR 7430	2,830	708	708	797	333	3,120	1,100	700	3,270	291	22.2	41.3	25.4
FLT 0790 PD6	930	-	-	797	333	1,210	1,100	700	1,360	91	12.7	22.2	25.4
FLT 1040 PD6	930	-	-	797	333	1,210	1,100	700	1,360	98	12.7	22.2	25.4
FLT 1230 PD6	930	-	-	797	333	1,210	1,100	700	1,360	104	12.7	28.6	25.4
FLT 1370 PD6	930	-	-	797	333	1,210	1,100	700	1,360	111	12.7	28.6	25.4
FLT 1640 PD6	1,450	-	-	797	333	1,730	1,100	700	1,880	143	15.8	28.6	25.4
FLT 2120 PD6	1,450	-	-	797	333	1,730	1,100	700	1,880	153	19.0	34.9	25.4
FLT 2640 PD6	1,450	-	-	797	333	1,730	1,100	700	1,880	163	22.2	34.9	25.4
FLT 2710 PD6	2,130	710	710	797	333	2,410	1,100	700	2,560	196	22.2	34.9	25.4
FLT 3170 PD6	2,130	710	710	797	333	2,410	1,100	700	2,560	211	22.2	41.3	25.4
FLT 3600 PD6	2,130	710	710	797	333	2,410	1,100	700	2,560	226	22.2	41.3	25.4
FLT 4210 PD6	2,830	708	708	797	333	3,120	1,100	700	3,270	271	22.2	41.3	25.4
FLT 4790 PD6	2,830	708	708	797	333	3,120	1,100	700	3,270	291	22.2	41.3	25.4
FLT 0520	930	-	-	797	333	1,210	1,100	700	1,360	91	12.7	22.2	25.4
FLT 0700	930	-	-	797	333	1,210	1,100	700	1,360	97	12.7	22.2	25.4
FLT 0860	930	-	-	797	333	1,210	1,100	700	1,360	104	12.7	28.6	25.4
FLT 0980	930	-	-	797	333	1,210	1,100	700	1,360	110	12.7	28.6	25.4
FLT 1120	1,450	-	-	797	333	1,730	1,100	700	1,880	142	15.8	28.6	25.4
FLT 1450	1,450	-	-	797	333	1,730	1,100	700	1,880	152	19.0	34.9	25.4
FLT 1720	1,450	-	-	797	333	1,730	1,100	700	1,880	162	22.2	34.9	25.4
FLT 1860	2,130	710	710	797	333	2,410	1,100	700	2,560	195	22.2	34.9	25.4
FLT 2120	2,130	710	710	797	333	2,410	1,100	700	2,560	210	22.2	41.3	25.4
FLT 2540	2,130	710	710	797	333	2,410	1,100	700	2,560	224	22.2	41.3	25.4
FLT 2860	2,830	708	708	797	333	3,120	1,100	700	3,270	268	22.2	41.3	25.4
FLT 3220	2,830	708	708	797	333	3,120	1,100	700	3,270	288	22.2	41.3	25.4

* Packed Dimensions / Weight

G4 High Profile Series Unit Cooler FNR / FLT PD6 / FLT

Installation Guide for FNR / FLT PD6 / FLT



ADDITIONAL INFORMATION

Example:

Application: Fish Deep Freezer
Required Room Temperature: -30°C
Ambient: $+35^{\circ}\text{C}$
Evaporating Temperature: -35°C at 5KTD
Cooling Capacity: 18.8kW (Inclusive of the Fan and Heater load)
Type of Refrigerant: R404A

Selection of the Eden G4 Unit Cooler as follow:

1. Determine the Correction Factors and Multiplier (Refers to page 4):
 - a. Capacity Correction Factor is Approximately 0.84
 - b. Refrigerant multiplier = 0.989
2. Calculation of required capacity:
 - a. $18.8\text{kW} / 0.84 / 0.989 = 22.63\text{kW}$ (Inclusive of the Fan and Heater load)
3. Calculate the unit cooler capacity needed at 5KTD
 - a. $23.07 \times 6 / 5 = 27.16\text{kW}$
4. Hence a **FLT 2860** is the suitable unit cooler for the above application.

Eden Select:



The Eden Select software enables you to do a refrigeration heat load calculation and select the actual model for the unit cooler and condenser.

