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YOUR COOLING SOLUTION PARTNER

제어반 전용 에어컨 및 냉각기

DAE YANG Slim Air-Conditioner & Fan Cooler of Switch Cabinet

Since 1986

대양기전주식회사

DAE YANG MECHATRONICS CO., LTD.

지구 온난화에 따른 이상기후 환경이 귀사의 설비를 위협하고 있습니다

Please be aware that your equipment is threatened with abnormal climate change due to global warming.

대양 제어반 전용 에어컨은 국제 품질 인증으로 NC공작기계, 로봇 및 공장자동화용 제어반 내부를 항상 쾌적하게 유지시켜 귀사 설비의 수명을 연장시키고 고장율을 줄여 생산성 향상에 일익을 담당하겠습니다.

The cooling system of DAEYANG with qualified international certifications will help your business in using NC machine tools, Robots, and FA systems by improving both productive efficiency and life cycle of your equipment. We will do our best for your business to be succeed.

NC공작기계, ROBOT 및 공장자동화 시스템의 제어반들은 그 기능이 다양해진 반면, 컴팩트한 내부 설계 및 밀폐화로 더 높은 내구성이 요구되고 있으며, 특히, 국내 및 여러 국가의 다양한 계절 및 특정 환경 속(고온도·고습도·고분진)에서의 사용 도중 원인 모를 SHUT-DOWN 또는 TRIP을 경험하게 됩니다. 이로 인한 제어반의 오작동은 가공물의 품질을 떨어뜨리는 것은 물론, 장비 고장으로까지 이어져 막대한 손실을 유발할 수 있습니다.
당사는 1986년 설립 이후, 지난 40여년간의 오랜 노하우로 국내 제어반 공조 시스템 역사와 함께 해왔으며, 항상 지속적인 R&D개발 및 품질 개선을 통해 해외 다양한 국가로도 수출하고 있음에 따라 앞으로도 귀사의 생산설비의 효율 향상을 위해 임직원 일동 모두 최선의 노력을 다할 것 입니다.

The switch cabinet of NC machine tools, robots and FA systems have been required not only many features but also being compacted and sealed, expecting its better durability. Moreover, the switch cabinet is exposed to many different types of using environment in domestic and the globe such as high temperature, humidity and dust, causing Shutting Down or TRIPPING problems with no certain reasons.
We, DAEYANG, with 40 years of its experiences in switch cabinet cooling industry can prevent such problems with continuous R&D investment and quality assurance, bringing you more effective and reliable business solutions with no matter where you are located.

사용처 WHERE TO USE

판금공장, 주물공장, 용접공장, 기계가공공장, 제지공장, 방적공장 등 공장주변 온도가 높고 습기가 많은 곳.

The plants where are exposed to high temperature and humidity.
(such as sheet metal, casting, welding, mechanical working, paper making and spinning plants, etc.)

모델 선정 방법 The Method of Model Selection

D C A 500 SM

- **제작회사** (MANUFACTURE-DAEYANG)
  - ※ 사용 국가별 주파수를 확인해주세요. (50, 60, 50/60Hz 공급 가능)
    Please check your country's frequency.
  - ※ 220V 단상 이외의 제품은 문의해주세요.
    Please inquire the products other than 220V with a single phrase.
- **제어반전용** (SWITCH CABINET)
- **기종** (MODEL)
  - Ⓐ AIR-CONDITIONER
  - Ⓕ FAN-COOLER
- **FAN COOLER 냉각능력** (THERMAL OUTPUT)
- **AIR CONDITIONER 냉각능력** (CAPACITY)
- **취부방법** (INSTALLATION)
  - SIDE MOUNT : SE / SM / SI
  - TOP MOUNT : TM

- **표시가 안된 제품도 다수보유 (주문제작가능).**
  We have many other models that are not shown. (Customized models can be manufactured.)
- **제품의 품질개선을 위하여 사양과 색상은 예고 없이 변경될 수 있습니다.**
  To improve products quality, specifications and colors could be changed without notification.

제어반용 에어컨 AIR CONDITIONER OF SWITCH CABINET

용도 PURPOSE

공장 온도보다 제어반 내부 온도를 낮게 유지하고 습기를 제거하고자 하는 생산설비에 이용됩니다.
To lower the temperature and remove humidity in switch cabinet.

원리 PRINCIPLE

콤프레샤에서 냉매를 압축하여 증발기로 보내 기화열에 의하여 제어반 내부의 열을 흡수하여 제어반 내부를 냉각시킵니다. 이 때 습기도 제거되며 외부 공기유입은 차단이 이루어지므로 제어반 내부는 항상 쾌적한 온도와 습도를 유지합니다.
The refrigerant compressed by a compressor moves into an evaporator while absorbing the heat and cooling the temperature inside of the control panel simultaneously.
Thus, the inside of the switch cabinet can maintain the appropriate level of temperature and humidity all the time.

예측하기 어려운 기후변화를 경험하고 있습니다. 대양 제어반 에어컨과 함께 하세요!
We are experiencing unexpected climate change worldwide.
We assure you that your business is in safe hand with Daeyang Air-conditioners.

특장점 SPECIAL FEATURES

1 **자가진단, 알람 출력, 도어센서 스위치, 제습작동, 시운전 등 다양한 기능을 탑재하고 있습니다.**
It has many different types of functions such as Self-diagnosis, Alarm output, Door sensor switch, Dehumidification operating, and Testing mode.

2 **전제품 자가증발 방식으로 응축수 배수 호스가 필요 없습니다.**
- 대부분의 제품이 자체 냉동사이클내 응축열을 활용한 응축수 자가증발 방식을 사용하고 있어, 기존 PTC 전기히터와 같이 소비전력 소모 또는 누전 걱정이 없습니다.
- 단, 냉각능력이 높은 일부 제품에는 PTC 히터 방식의 자가증발 기능이 적용될 수 있습니다.

All products are equipped with self-evaporation system for condensed water.
- Most products use its cooling cycle for evaporate the condensed water, expecting no need of PTC heater causing high power consumption and short circuit issues.
- Whereas a few products with higher cooling capacity might be equipped with PTC heater.

3 **A/S가 용이함은 물론, 제품 수명 연장에 필수인 염화망 필터의 상태 확인 및 청소가 쉽도록 제작되어 있습니다.**
- 필터가 심하게 오염될 경우, 제품의 수명 및 성능에 지장을 줌에 따라 상태를 자주 확인하고 청소하는 것이 필수 입니다.

It is simple for maintenance and designed to check and clean pre-mesh filter easily.
- Since a contaminated filter can damage the A/C, it is very important to stay the filter clean.

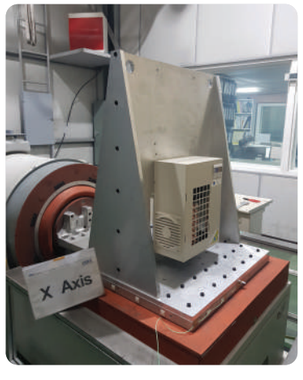
설치사례 INSTALLATION EXAMPLES

내구성 시험 DURABILITY TESTS

성능시험

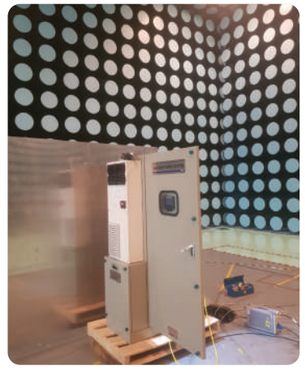



진동시험



IP시험


전자파시험



용량계산방법 The Method of Cooling Capacity Calculation

C (총소요 냉각용량) = A (판넬내부 발생열량) + B (판넬 표면을 통한 유입열량)

C (Total Heat Loss) = A (Panel Installation Heat Loss) + B (Input Heat Through Panel Surface)

A는 판넬내부의 전자회로에 발생되는 열량(발열량 선정자료 참조 또는 입력선과 출력선의 전압 및 전류를 측정해도 알 수 있음)

A is Heat generated in the electricity and electron circuits within the Panel. (Please Refer to select caloric value or measure both voltage and current of input/ourput lines.)

예) 소비전력이 500W인 경우 500W x 0.86Kcal/h = 430Kcal/h

Example: When the power consumption is 500W, 500W x 0.86Kcal/h = 430Kcal/h

B는 에어컨을 설치했을 시 판넬 내부온도가 낮아져 외부열이 판넬 표면을 통해 유입되는 열량으로 판넬 내·외부 온도차이와 표면적에 비례하므로 우측표에서 선정합니다.

B is heat input though the surface of the panel while the temperature inside of the panel becomes lower compared to the outside. So, B is correlated with the temperature difference between inside and outside as well as the surface area. (See the table right)

판넬 내/외부 온도차이별 계수
Temperature Differential Conversion Chart

Temperature Differential (℃)	(kcal / h/㎡)	(BTU / h/㎡)
5	16.7	66.3
10	42.2	167.4
15	55.3	219.4
20	92.2	365.8
25	116.7	463.1
30	142.2	564.2
35	166.9	662.3

예) 제어반 크기(W x H x D) = 800 x 1600 x 500mm인 경우

※ 제어반 표면적 계산방법(공장바닥 설치 시)

(0.8m x 1.6m x 2EA) + (1.6m x 0.5m x 2EA) + (0.8m x 0.5m x 1EA) = 4.6㎡

Example) Control panel volume(W x H x D) – 800 x 1600 x 500,※ The method of calculating the surface area control panel(in the case of installing on the factory floor)(0.8m x 1.6m x 2EA) + (1.6m x 0.5m x 2EA) + (0.8m x 0.5m x 1EA) = 4.6㎡

예) 판넬 내·외부 온도차이가 15℃이고 표면적이 4.6㎡인 경우 : 55.3Kcal/h/㎡ x 4.6㎡ = 254Kcal/h

Example) When the temperature difference between inside and outside is 15℃ and the surface area is 4.6㎡, 55.3Kcal/hr/㎡x 4.6㎡= 254Kcal/h

C (총소요 냉각용량) = A + B = 430Kcal/h + 254Kcal/h = 684Kcal/h

※ 이 경우 자사 모델 DCA3000SE(750kcal)를 적용하십시오.

C (Total heat loss) = A + B = 430Kcal/h + 254Kcal/h = 684Kcal/h

※ In this Case : Daeyang Model DCA3000SE(750kcal) is the best Choice.

발열량 선정 자료 SELECT CALORIC VALUE

전원·변압기류 | CURRENT AND TRANSFORMING DEVICES

반내설치기기 (MACHINERY INSTALLED IN PANEL)	발열량(일반적기준) (HEAT LOSS-GENERAL STANDARDS)	비고 (REMARKS)
소형 변압기 (TRANSFORMER)	정격용량 (RATED CAPACITY) -10KVA 50% 정도(Approximately 50%) -100VA 20% 정도(Approximately 20%) -1KVA 10% 정도(Approximately 10%) -3KVA 6% 정도(Approximately 6%)	• 소형일수록 발열비율이 커집니다. (Smaller in size leads to more HEAT LOSS RATE)
전압조정기 (VOLTAGE CONTROL UNIT)	전압조정기 정격용량의 10% 정도 (Approximately 10% of RATED CAPACITY)	• 손실 - 발열량(HEAT LOSS)
대형저항기(고정, 가변) (HEAVY RESISTOR, FIXED / VARIABLE)	정격용량의 1/3 정도 (Approximately 1/3 of RATED CAPACITY)	
정전압 전원 (CONSTANT-VOLTAGE SWITCH)	정격용량의 10~15% 정도 (Approximately 10~15% of RATED CAPACITY)	• 손실 - 발열량(HEAT LOSS)
무정전 전원장치(UPS)	정격용량의 1~5KVA (RATED CAPACITY 1~5 KVA) 35% 정도(Approximately 35%) 정격용량의 20KVA (RATED CAPACITY 20KVA) 25% 정도(Approximately 25%)	• 소형일수록 발열비율이 커집니다. (Smaller in size leads to more HEAT LOSS RATE) • 발열량은 축전지 충전 상태에서의 값. (HEAT LOSS is the value in charging the Storage Battery) • 상시 인버터 급전 타입. (Full-time Inverter Emergency Type)
직류 안정화 전원 (SWITCHING REGULATOR)	정격용량의 30~55% 정도 (Approximately 30~55% of RATED OUTPUT)	• 정격출력 100%일 때의 발열량. (HEAT LOSS at 100% of RATED OUTPUT) • 소형일수록 발열비율이 커집니다. (Smaller in size leads to the more HEAT LOSS RATE)
저압콘덴서 (LOW-TENSION CONDENSER)	정격용량의 0.2% 정도 (Approximately 0.2% of RATED OUTPUT)	• 정격용량은 KVA. (RATED CAPACITY is KVA) (100V, 60HZ, 1KVA = 256.3μF)

증폭기류 | AMPLIFYING DEVICES

반내설치기기 (MACHINERY INSTALLED IN PANEL)	발열량(일반적기준) (HEAT LOSS-GENERAL STANDARDS)	비고 (REMARKS)
AC SERVO AMP	정격용량(RATED CAPACITY) -0.1KW 50% 정도(Approximately 50%) -0.5KW 20% 정도(Approximately 20%) -1KW 15% 정도(Approximately 15%) -3KW 10% 정도(Approximately 10%)	• 엠프 1개당 정격출력 100%일 때의 발열량. (HEAT LOSS at 100% of RATED OUTPUT in an AMP) • 소형일수록 발열비율이 커집니다. (Smaller in size leads to the more HEAT LOSS RATED) • 전원내장상태.(Built-in Power Supply Type)
POWER UNIT (SERVO AMP)	정격용량의 3~5% 정도 (Approximately 3~5% of RATED CAPACITY)	• 정격출력 100%일 때의 발열량. (HEAT LOSS at 100% of RATED OUTPUT) • 내장기기(Built-in Machinery) 트랜스, 정류유니트, 콘덴서(TRANSFORMER, RECTIFICATION UNIT, CONDENSER)
인버터 (INVERTER)	정격용량의 5~10% 정도 (Approximately 5~10% of RATED CAPACITY)	• 정격출력 100%일 때의 발열량. (HEAT LOSS at 100% of RATED OUTPUT) • 소형일수록 발열비율이 커집니다. (Smaller in size leads to the more HEAT LOSS RATE) • 연속정격 출력시. (At the time of continuous RATED OUTPUT)

컴퓨터 장치류 | COMPUTER DEVICE

반내설치기기 (MACHINERY INSTALLED IN PANEL)	발열량(일반적기준) (HEAT LOSS-GENERAL STANDARDS)	비고 (REMARKS)
컴퓨터 본체 (FACTORY COMPUTER)	1대당 100~300W 정도 (1 UNIT : Approximately 100~300W)	
CRT	1대당 60~130W 정도 (1 UNIT : Approximately 60~130W)	• 크기(인치수)에 따라 다름. (Vary according to size(inch))
FLOPPY DISC (THERMOSTAT)	3.5~5인치 2매용 20W 정도 (2 UNITS of 3.5~5inches : 20W)	
FIXED DISC	10~20MB 기준 100W 정도	• 전원류(Power Supply)

배선용 기기류 | WIRING DEVICES

반내설치기기 (MACHINERY INSTALLED IN PANEL)	발열량(일반적기준) (HEAT LOSS-GENERAL STANDARDS)	비고 (REMARKS)
배선용 차단기(NFB, ELB)	(NFB) 정격용량(RATED CAPACITY) -50A 15W정도(Approximately 15W) -100A 35W정도(Approximately 35W) -225A 55W정도(Approximately 55W) -400A 85W정도(Approximately 85W) (누진전자회로부등) LEAKAGE FROM ELECTRONIC CIRCUITS	• 정격출력 100% 일때의 발열량 (HEAT LOSS at 100% of RATED CAPACITY) • 극수에 비례 (Proportionate to the Number of Poles) • 3P의 경우(in case of 3P) • 누진전자 회로부는 극수와 무관함 (Leakage from electronic circuits has nothing to do with the number of Poles) • 소형일수록 발열비율이 커집니다. (Smaller in size leads to more HEAT LOSS RATE)
전자접촉기 (ELECTRO-MAGNETIC RELAY)	정격용량(RATED CAPACITY) -4KW 10W정도(Approximately 10W) -7.5KW 20W정도(Approximately 20W) -22KW 80W정도(Approximately 80W) -30KW 110W정도(Approximately 110W)	• 정격출력 100%일 때의 발열량 (HEAT LOSS at 100% of RATED CAPACITY) • 3P의 경우(in case of 3P) • AC220V인 경우(in case of AC220V)
열동형 과부하 계전기 (THERMAL RELAY)	정격용량(RATED CAPACITY) -35A 4W정도(Approximately 4W/POLE) -100A 8W정도(Approximately 8W/POLE) -150A 10W정도(Approximately 10W/POLE)	• 정격출력 최대값 통전시의 발열량 (When Applying Maximum Static CAPACITY)
전자계전기(RELAY)	5W 정도	• 정격출력 100%일 때의 발열량 (When Applying Maximum Static CAPACITY)

제어용 기기류 | COMPUTER DEVICES

반내설치기기 (MACHINERY INSTALLED IN PANEL)	발열량(일반적기준) (HEAT LOSS-GENERAL STANDARDS)
소형릴레이(COMPACT RELAY)	1개당 1~2W정도(NFB) (1UNIT : Approximately 1~2W)
솔리드 스테이트 릴레이(SSC, SSR)	사용전류 × 1.6W (Using Current × Approximately 1.6W)
온도 조절계(THERMOSTAT METER)	48 × 96 사이즈 5W 정도 (48 × 96 SIZE Approximately 5W) 96 × 96 사이즈 10W 정도 (96 × 96 SIZE Approximately 10W)

기타 | OTHER DEVICES

반내설치기기 (MACHINERY INSTALLED IN PANEL)	발열량(일반적기준) (HEAT LOSS-GENERAL STANDARDS)
FAN MOTOR	90° 사이즈 10W 정도 (90 SIZE Approximately 10W) 120° 사이즈 13W 정도 (120 SIZE Approximately 13W) 150° 사이즈 40W 정도 (150 SIZE Approximately 40W)

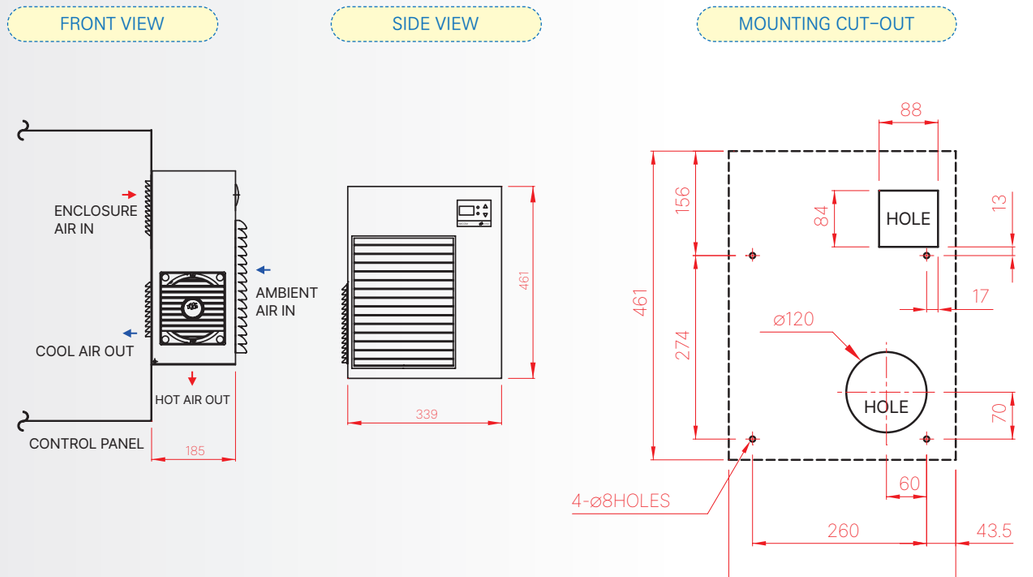
제품 소개 PRODUCT INTRODUTION

제품 취부도 PRODUCT DRAWING

SMA1000

CE

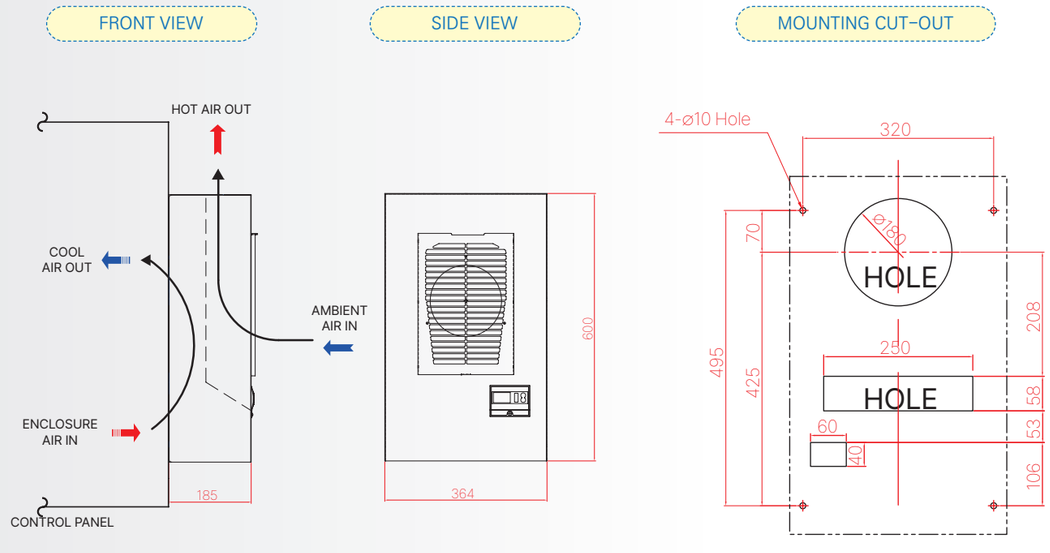
MODEL		SMA1000
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	250
	BTU/h	1000
	W	290
POWER CONSUMPTION [W]		414
RATED CURRENT STA-RUN [A]		12.0-1.8
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**339*461*185**
WEIGHT [Kg]		**21.0**
REFRIGERANT		R134a



DCA1500SE

CE

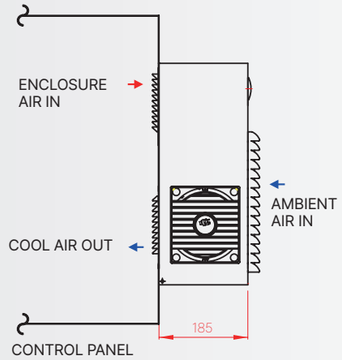
MODEL		DCA1500SE
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	375
	BTU/h	1500
	W	436
POWER CONSUMPTION [W]		500
RATED CURRENT STA-RUN [A]		10.0-2.3
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**364*600*185**
WEIGHT [Kg]		**18.5**
REFRIGERANT		R134a



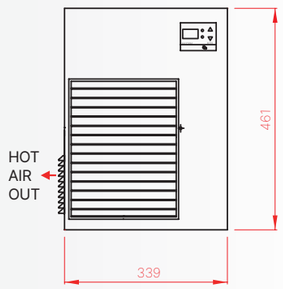
SMA2000

MODEL		SMA2000
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	500
	BTU/h	2000
	W	582
POWER CONSUMPTION [W]		460
RATED CURRENT STA-RUN [A]		12.0-2.0
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**339*461*185**
WEIGHT [Kg]		**22.0**
REFRIGERANT		R134a, R513a

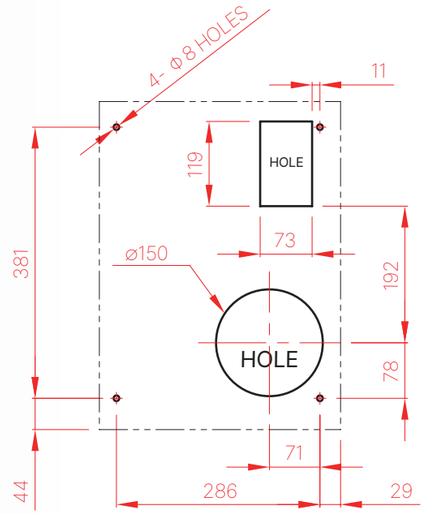
FRONT VIEW



SIDE VIEW



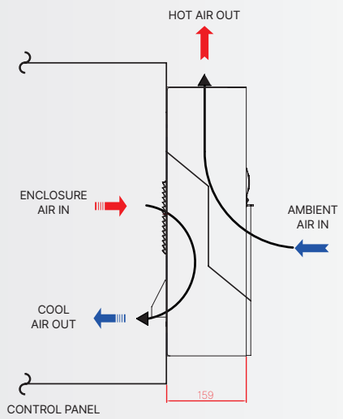
MOUNTING CUT-OUT



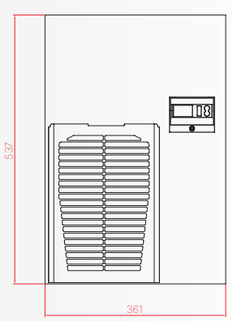
DCA500SM

MODEL		DCA500SM
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	500
	BTU/h	2000
	W	582
POWER CONSUMPTION [W]		590
RATED CURRENT STA-RUN [A]		5.7-2.1
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**361*537*159**
WEIGHT [Kg]		**15.7**
REFRIGERANT		R134a

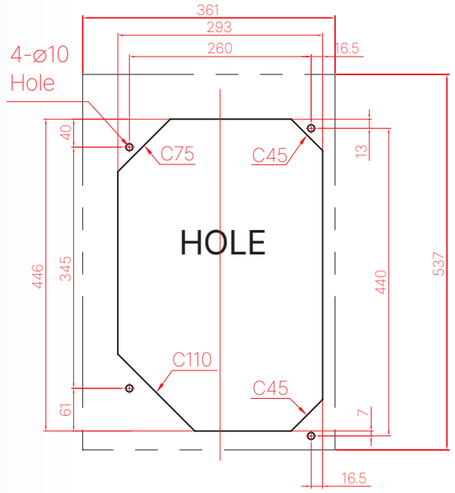
FRONT VIEW



SIDE VIEW



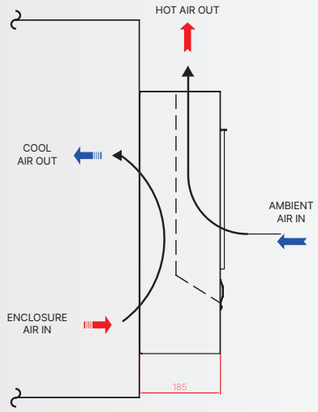
MOUNTING CUT-OUT



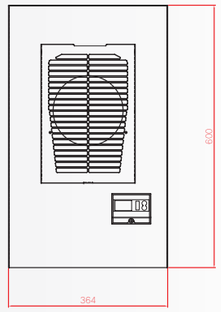
DCA2500SE

MODEL		DCA2500SE
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	625
	BTU/h	2500
	W	727
POWER CONSUMPTION [W]		575
RATED CURRENT STA-RUN [A]		13.0-2.5
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**364*600*185**
WEIGHT [Kg]		**18.5**
REFRIGERANT		R134a

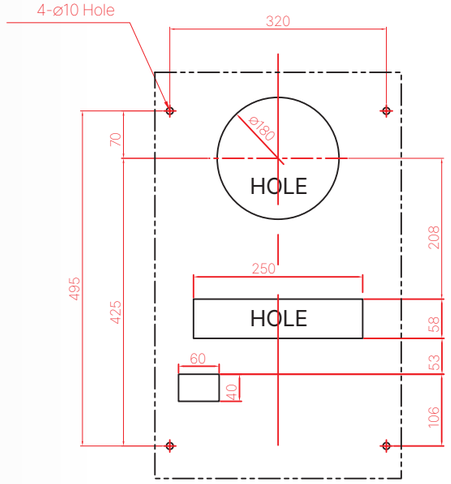
FRONT VIEW



SIDE VIEW



MOUNTING CUT-OUT

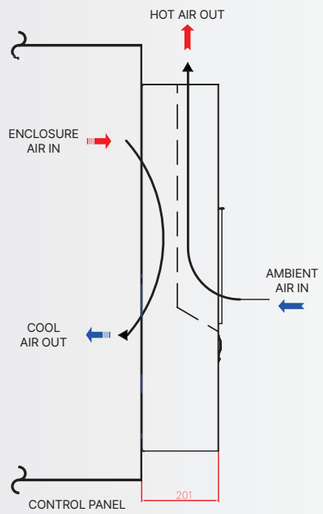


DCA3000SE

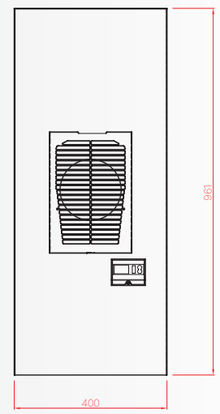
MODEL		DCA3000SE
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	750
	BTU/h	3000
	W	872
POWER CONSUMPTION [W]		990
RATED CURRENT STA-RUN [A]		15.9-5.6
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**400*961*201**
WEIGHT [Kg]		**42.0**
REFRIGERANT		R134a, R513a

※ ETL 북미인증 모델은 별도 문의

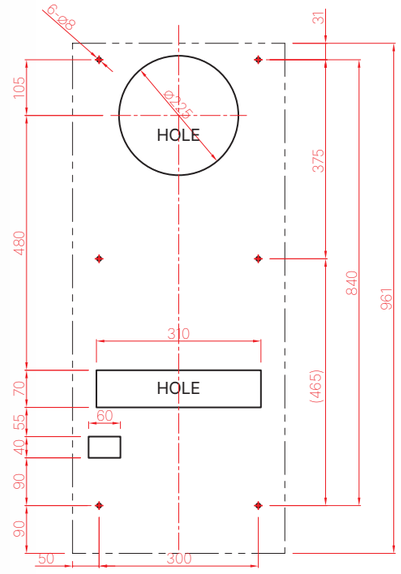
FRONT VIEW



SIDE VIEW



MOUNTING CUT-OUT

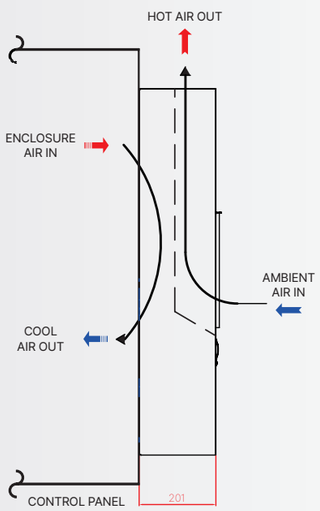


DCA4000SE

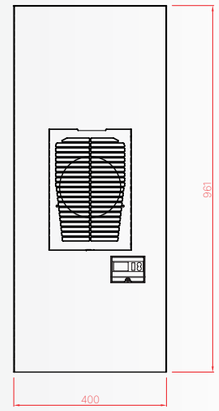
MODEL		DCA4000SE
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	1000
	BTU/h	4000
	W	1163
POWER CONSUMPTION [W]		1200
RATED CURRENT STA-RUN [A]		20.0-3.6
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**400*961*201**
WEIGHT [Kg]		**42.0**
REFRIGERANT		R134a, R513a

※ ETL 북미인증 모델은 별도 문의

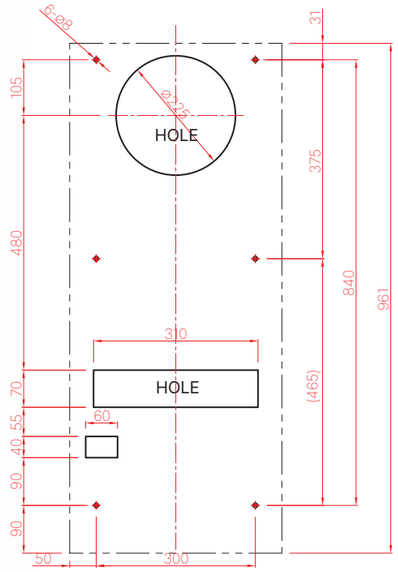
FRONT VIEW



SIDE VIEW



MOUNTING CUT-OUT

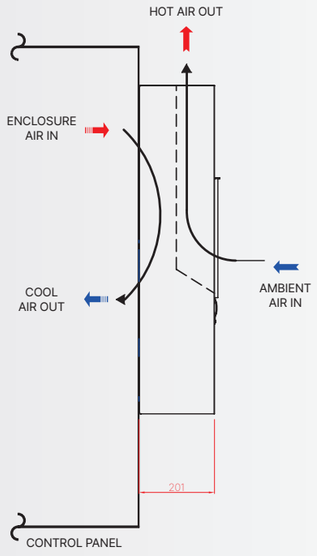


DCA6000SE

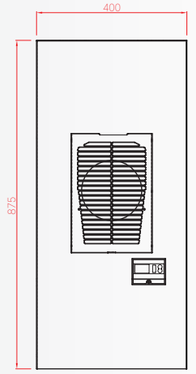
MODEL		DCA6000SE
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	1500
	BTU/h	6000
	W	1740
POWER CONSUMPTION [W]		1219
RATED CURRENT STA-RUN [A]		16.0-5.3
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**400*875*201**
WEIGHT [Kg]		**36.0**
REFRIGERANT		R410a

※ ETL 북미인증 모델은 별도 문의

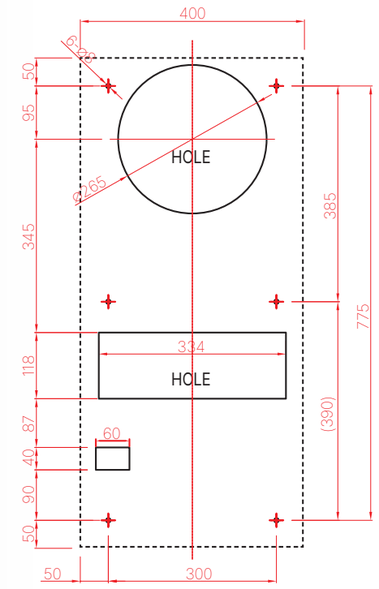
FRONT VIEW



SIDE VIEW



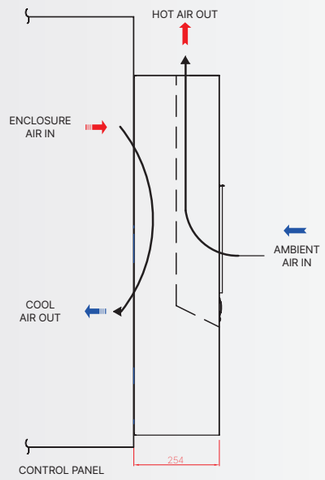
MOUNTING CUT-OUT



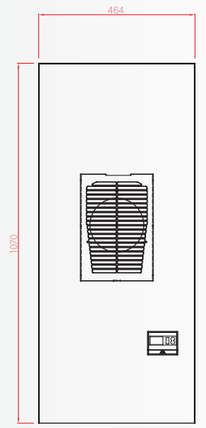
DCA9000SE

MODEL		DCA9000SE
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	2250
	BTU/h	9000
	W	2617
POWER CONSUMPTION [W]		1600
RATED CURRENT STA-RUN [A]		18.0-7.2
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**464*1070*253**
WEIGHT [Kg]		**62.0**
REFRIGERANT		R410a

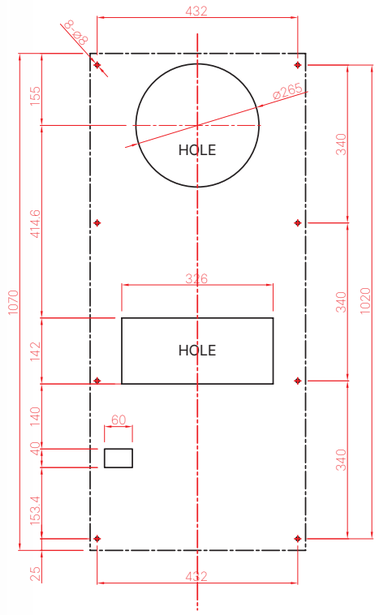
FRONT VIEW



SIDE VIEW



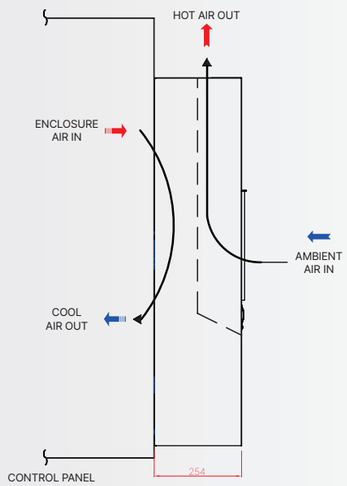
MOUNTING CUT-OUT



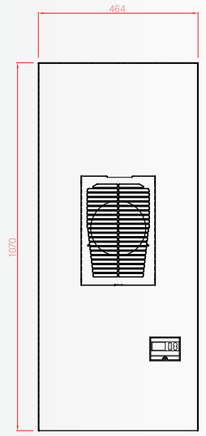
DCA12000SE

MODEL		DCA12000SE
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	3000
	BTU/h	12000
	W	3489
POWER CONSUMPTION [W]		1850
RATED CURRENT STA-RUN [A]		20.0-9.5
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**464*1070*253**
WEIGHT [Kg]		**62.0**
REFRIGERANT		R410a

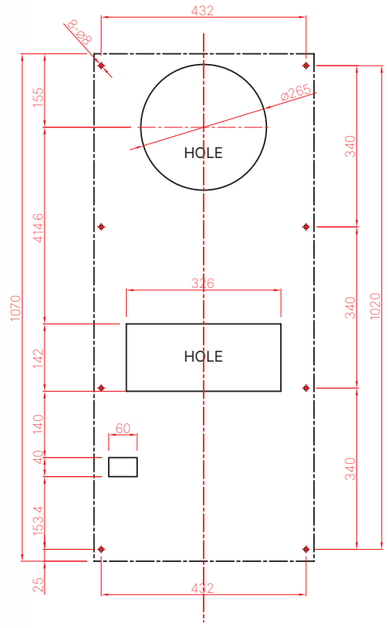
FRONT VIEW



SIDE VIEW



MOUNTING CUT-OUT

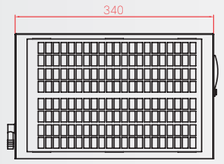


DCA250TM

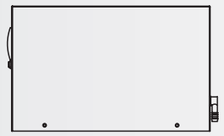
CE

MODEL		DCA250TM
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	250
	BTU/h	1000
	W	290
POWER CONSUMPTION [W]		261
RATED CURRENT STA-RUN [A]		4.8-1.3
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**500*214*340**
WEIGHT [Kg]		**19.0**
REFRIGERANT		R134a

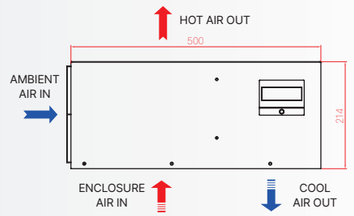
LEFT VIEW



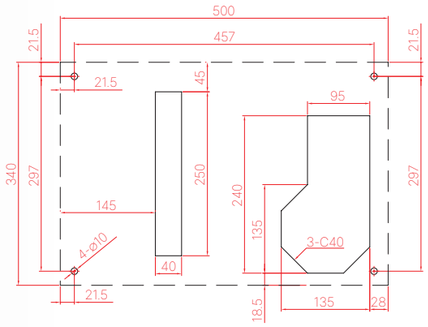
RIGHT VIEW



FRONT VIEW



MOUNTING CUT-OUT

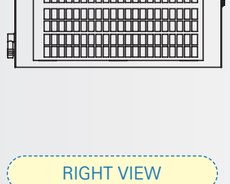


DCA500TM

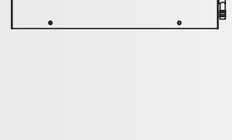
CE

MODEL		DCA500TM
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	500
	BTU/h	2000
	W	582
POWER CONSUMPTION [W]		513
RATED CURRENT STA-RUN [A]		8.2-2.5
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**530*230*364**
WEIGHT [Kg]		**23.5**
REFRIGERANT		R134a

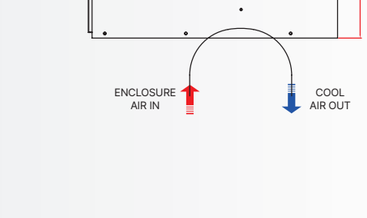
LEFT VIEW



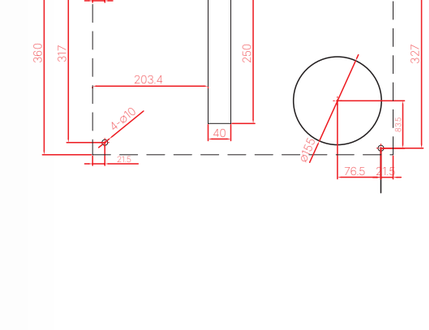
RIGHT VIEW



FRONT VIEW



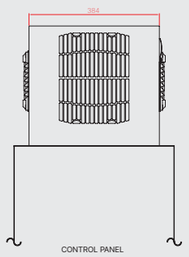
MOUNTING CUT-OUT



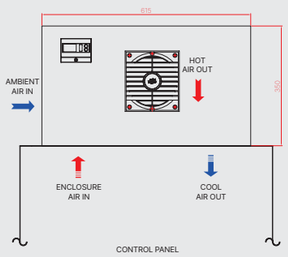
DCA1000TM CE

MODEL		DCA1000TM
VOLTAGE [V]		220
FREQUENCY [Hz]		50 / 60
CAPACITY	kcal/h	1000
	BTU/h	4000
	W	1163
POWER CONSUMPTION [W]		730
RATED CURRENT STA-RUN [A]		17.1-3.1
USE ENVIRONMENT		20~45°C, 70% RH
W*H*D [mm]		**615*350*384**
WEIGHT [Kg]		**33.3**
REFRIGERANT		R134a

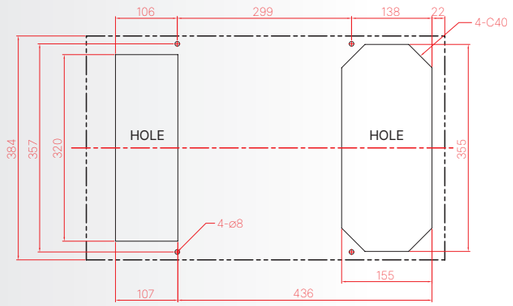
FRONT VIEW



SIDE VIEW



MOUNTING CUT-OUT



카다로그 모델 외에도 다양한 모델을 보유하고 있으니 문의 부탁드립니다.

We have many different types of models other than showed in the catalogue.

제품의 외관 및 취부도는 제품 개선을 위해 예고없이 변경 될 수 있으니, 홈페이지 확인 또는 언제든지 문의 부탁드립니다.

The exteriors and mounting cut-out lines could be changed for its upgrade without any notification. Please check our website or ask us anytime for confirmation.

FAN COOLER

FAN COOLER 전모델

ETL(북미) 및 CE(유럽) 인증 획득

팬쿨러 FAN COOLER

용도 PURPOSE

공장내부 공기를 이용하여 제어반 내부 온도를 낮추는 간접냉각용이 필요한 방전가공기, FA제어반, 로봇, NC공작기계 등에 적용합니다.

To lower the temperature inside of the panel by indirected cooling from the ambient temperature, applying to electric discharge machines, FA panels, robots, and NC machines, etc.

원리 PRINCIPLE

제어반 내부 발생열과 공장 외부 찬공기를 각각의 상하 팬모터로 공기 순환 후 COOLING FIN UNIT에 의해서, 외부 찬공기가 제어반 내부로 직접 유입되지 않고, 열전도와 대류에 의해서 제어반 내부 온도를 외부공기 온도에 근접시키는 원리 입니다.

Since each fan motor with the cooing fin unit circulates the air between the inside of the panel (hot air) and the outside (cool air), it doesn't flow the external cool air inside and also reaches the internal temperature similar to the external one by heat conduction and convection current.

특장점 SPECIAL FEATURES

1 **열전도성이 높은 알루미늄 냉각핀 유니트의 가로막구조의 설계로 외부의 이물질 및 습기유입이 일체 차단됩니다.**

The aluminum cooling fin unit with higher heat conductivity has a structure of horizontal film, which is designed to prevent any alien substances and humidity completely.

2 **경량이라 탈부착이 용이하고, 가볍기 때문에 청소가 쉽습니다.**

Because of its light weight, the cooling system can be easily installed, removed and cleaned.

3 **FAN GUARD사용으로 사용자의 안정성이 보장되며, 모터 부품의 A/S가 용이합니다.**

The use of the FAN GUARD ensures the system's safety and facilitates services of the motor.

4 **보호등급 INT IP54, EXT IP34 수준을 만족합니다.**

FAN COOLER meets the requirements of INT IP54 and EXT IP34.

5 **볼베어링 팬모터 적용으로 평균 수명시간이 50,000시간(주변온도 20℃, 습도65%시)이며, -10℃~70℃의 높은 온도 범위에서 사용이 가능합니다.**

BALL BEARING FAN MOTOR : Life is 50,000hr(ambient 20℃, 65%) Operating Temperature is -10℃~70℃.

용량계산방법 The Method of Cooling Capacity Calculation

팬쿨러 미장착시 제어반 내부온도(T)?
When there is no Fan-Cooler installed, temperature inside of the panel(T)?

$$T = t + \frac{Q}{h \times A}$$

t = 외기온도(The Ambient Temperature)℃
Q = 내부발열량(Heat Loss) W
h = 제어반 열대류율(Convection heat transfer coefficient)
painted sheet steel:5~6w/㎡℃
A = 제어반 표면적(The surface area of panel)㎡

예) 제어반 내부 발열량(Q)=520W
공장온도(t) = 35℃
제어반 표면적(A)
[(W×H×D) =(800×1300×500)(FREE STANDING)] (A) = (0.8 x 1.3 x 2EA)+(0.5 x 1.3 x 2EA) + (0.8 x 0.5) = 3.8㎡

$$T = 35°C + \frac{520W}{5.5W/㎡℃ \times 3.8㎡} = 60°C$$

▸ 제어반 내부온도가 60℃까지 상승
(Temperature inside reaches up to 60 ℃)

팬쿨러(MODEL DCF-20SI)장착시 제어반 내부 허용온도(T)?
When the Fan-Cooler is installed, temperature allowance inside of the panel(T)?

$$T = t + \frac{Q}{q + (h \times A)}$$

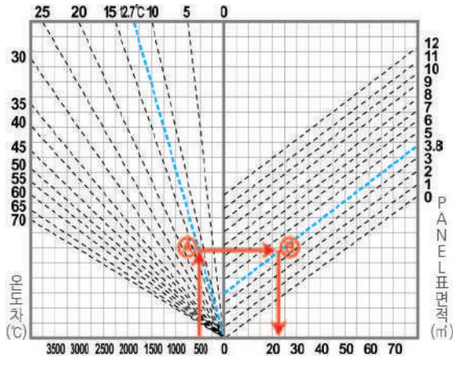
$$T = 35°C + \frac{520W}{20W/℃ + (5.5W/㎡ \times 3.8㎡)} = 47.7°C$$

▸ 제어반 내부온도가 47.7℃수준으로 하강
(Temperature inside reduces to 47.7 ℃)

q = 정격출력 (Thermal output)W/℃

GRAPH 읽는 방법 The Method of reading the graph

1) PANEL 내부의 발열량 520W에서 공장외기온도(35℃)와 허용내부온도(47.7℃)와의 차 12.7℃와의 교점 A를 구한다.
2) A점에서 횡축과 평행선을 그어서, PANEL표면적(3.8㎡)과의 교점 B를 구한다.
3) 교점 B에서 Thermal output(W/℃)로 향하여 수직선을 그으면, 20W/℃의 Thermal output를 구하여 팬쿨러모델을 선정합니다.
- Heat loss in watts(W) : 520W
- Required enclosure temperature : 47.7℃
- Ambient temperatue(t) : 35℃
- The temperature difference(℃) : 47.7-35=12.7℃
- The effective surface area of the enclosure(㎡) : 3.8
- This led us to select FAN COOLER Model with a specific thermal output of 20W/℃



PANEL 내부의 발열량(W)
FAN-COOLER 정격출력(W/℃)

NEW FAN COOLER

제품사양 I PRODUCT SPECIFICATION

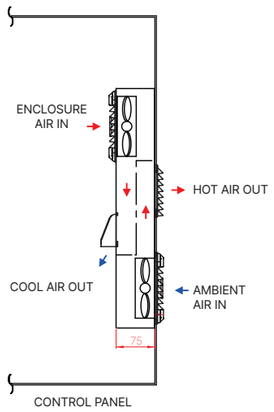
MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER(W)	FANS (EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-5SI	115-50/60	3/5	31/29	2	3.4	200*475*75
	220-50/60		28/26			
DCF-8SI	115-50/60	6/8	31/29	2	3.8	157*595*75
	220-50/60		28/26			
DCF-10SI	115-50/60	8/10	31/29	2	4.0	188*650*75
	220-50/60		28/26			
DCF-12SI	115-50/60	10/12	31/29	2	4.3	188*650*90
	220-50/60		28/26			
DCF-15SI	115-50/60	12/15	31/29	2	4.9	270*655*75
	220-50/60		28/26			
DCF-16SI	115-50/60	13/16	70/64	2	4.8	188*736*90
	220-50/60		80/76			
DCF-20SI	115-50/60	17/20	62/58	4	6.5	308*595*90
	220-50/60		56/52			
DCF-25SI	115-50/60	21/25	60/62	2	7.2	359*736*90
	220-50/60		72/70			
DCF-32SI	115-50/60	28/32	120/124	4	8.4	359*736*90
	220-50/60		144/140			
DCF-45SI	115-50/60	41/45	120/124	4	10.4	380*960*90
	220-50/60		144/140			
FC-170DY	115-50/60	8/10	31/29	2	4.0	170*680*66
	220-50/60		28/26			
FC-12DY	115-50/60	10/12	31/29	2	4.0	200*480*65
	220-50/60		28/26			
FC-15DY	115-50/60	12/15	31/29	2	4.8	300*480*65
	220-50/60		28/26			
FC-280DY	115-50/60	16/20	62/58	4	5.4	280*590*66
	220-50/60		56/52			
FC-310DY	115-50/60	20/24	62/58	4	7.8	310*680*66
	220-50/60		56/52			

카다로그 모델 외에도 다양한 모델을 보유하고 있으니 문의 부탁드립니다.

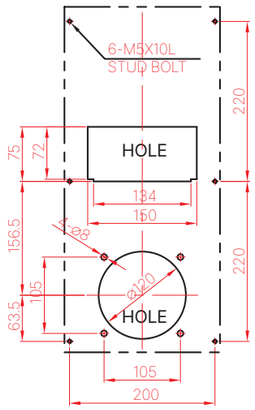
제품 소개 PRODUCT INTRODUTION

DCF-5SI

SIDE VIEW



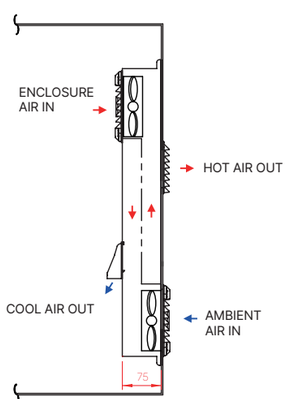
MOUNTING CUT-OUT



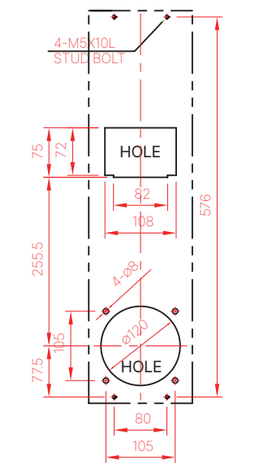
MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-5SI	115-50/60	3/5	31/29	2	3.4	200*475*75
	220-50/60		28/26			

DCF-8SI

SIDE VIEW



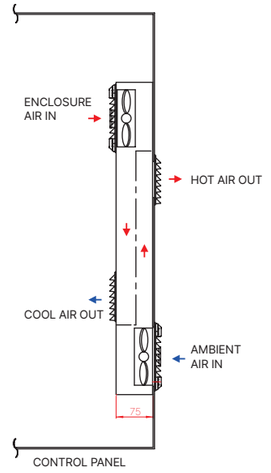
MOUNTING CUT-OUT



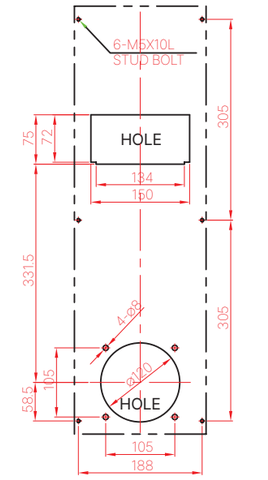
MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-8SI	115-50/60	6/8	31/29	2	3.8	157*595*75
	220-50/60		28/26			

DCF-10SI

SIDE VIEW



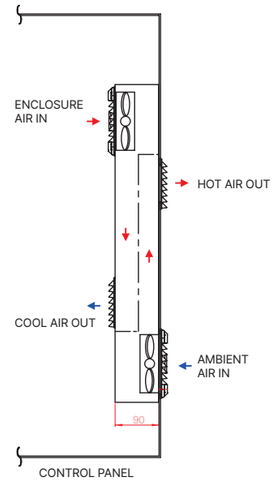
MOUNTING CUT-OUT



MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-10SI	115-50/60	8/10	31/29	2	4.0	188*650*75
	220-50/60		28/26			

DCF-12SI

SIDE VIEW



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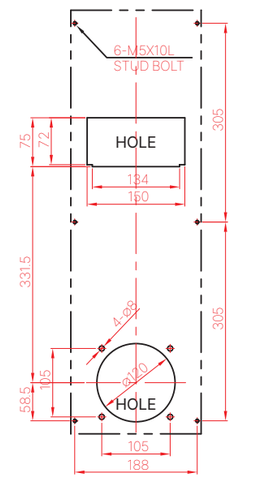
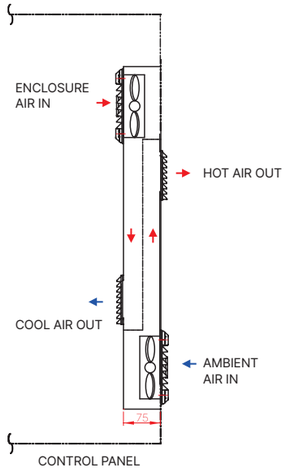


MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-12SI	115-50/60	10/12	31/29	2	4.3	188*650*90
	220-50/60		28/26			

DCF-15SI

SIDE VIEW



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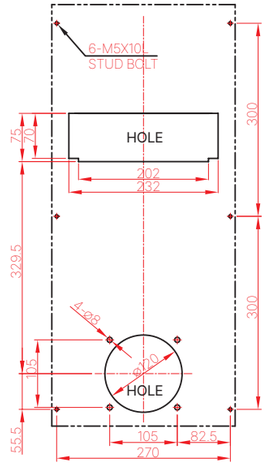
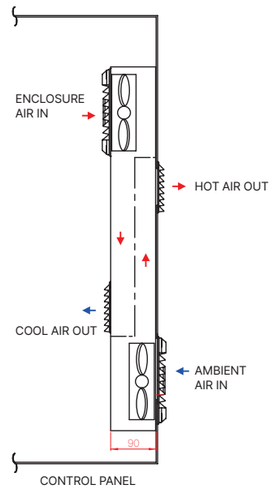


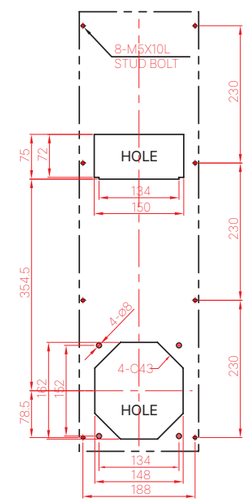
MODEL	VOLTAGE (V~Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-15SI	115-50/60	12/15	31/29	2	4.9	270*655*75
	220-50/60		28/26			

DCF-16SI

SIDE VIEW



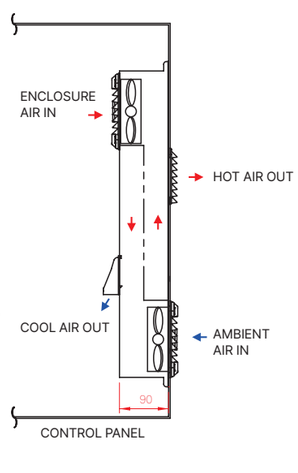
MOUNTING CUT-OUT



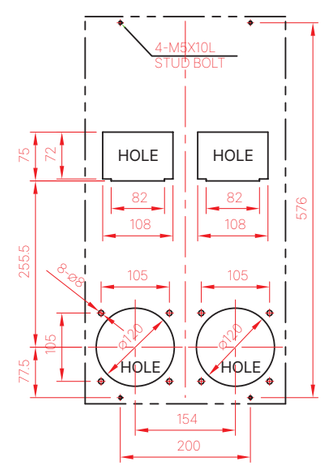
MODEL	VOLTAGE (V~Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-16SI	115-50/60	13/16	70/64	2	4.8	188*736*90
	220-50/60		80/76			

DCF-20SI

SIDE VIEW



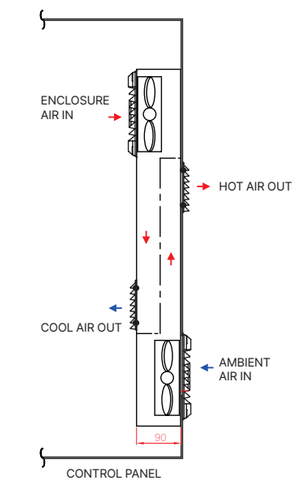
MOUNTING CUT-OUT



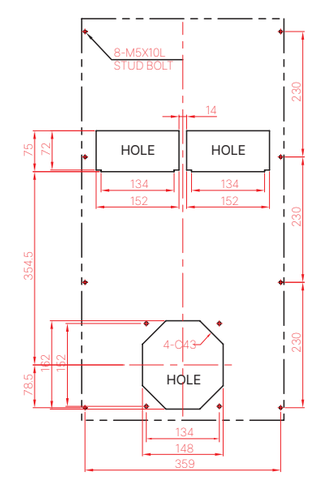
MODEL	VOLTAGE (V~Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-20SI	115-50/60	17/20	62/58	4	6.5	308*595*90
	220-50/60		56/52			

DCF-25SI

SIDE VIEW



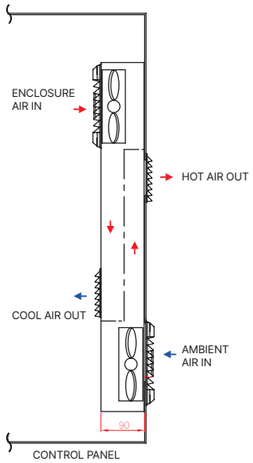
MOUNTING CUT-OUT



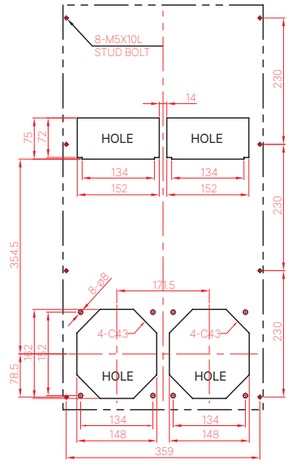
MODEL	VOLTAGE (V~Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-25SI	115-50/60	21/25	60/62	2	7.2	359*736*90
	220-50/60		72/70			

DCF-32SI

SIDE VIEW



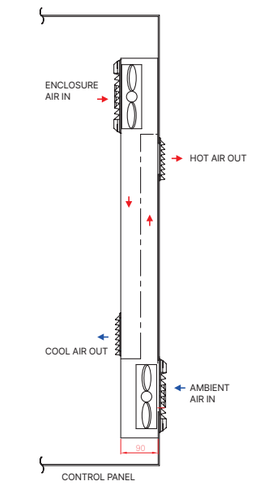
MOUNTING CUT-OUT



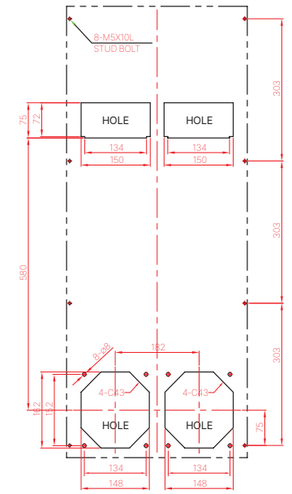
MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-32SI	115-50/60	28/32	120/124	4	8.4	359*736*90
	220-50/60		144/140			

DCF-45SI

SIDE VIEW



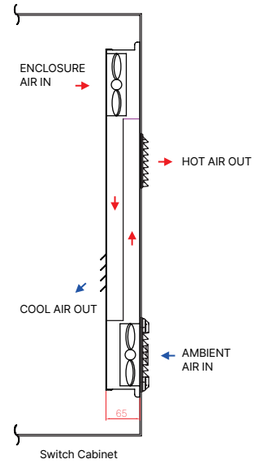
MOUNTING CUT-OUT



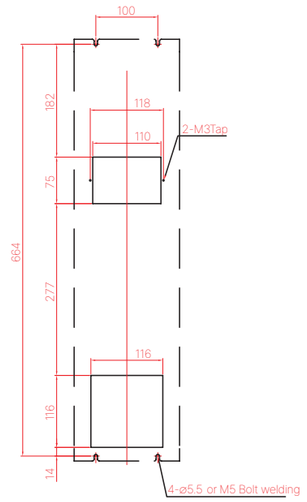
MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
DCF-45SI	115-50/60	41/45	120/124	4	10.4	380*960*90
	220-50/60		144/140			

FC-170DY

SIDE VIEW



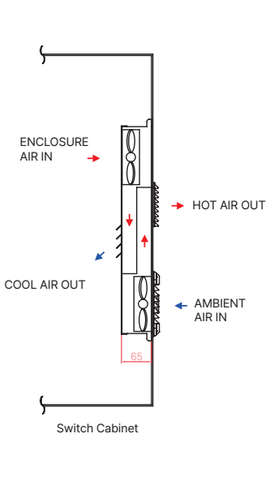
MOUNTING CUT-OUT



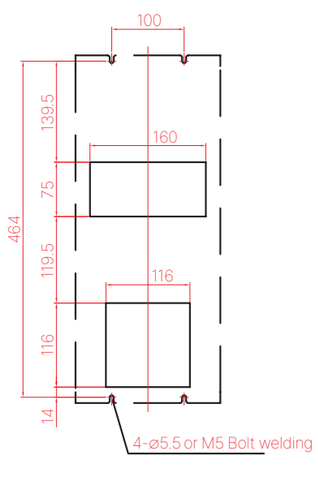
MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
FC-170DY	115-50/60	8/10	31/29	2	4.0	170*680*66
	220-50/60		28/26			

FC-12DY

SIDE VIEW



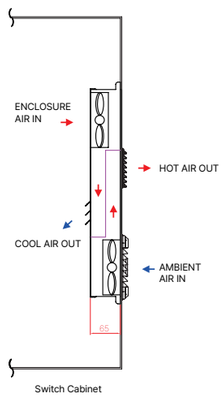
MOUNTING CUT-OUT



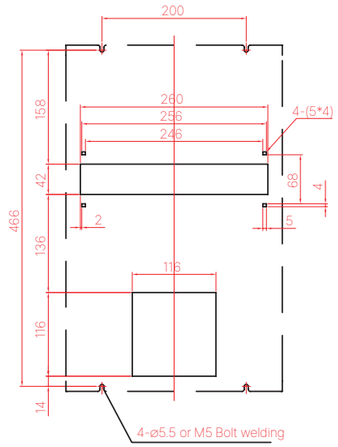
MODEL	VOLTAGE (V-Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
FC-12DY	115-50/60	10/12	31/29	2	4.0	200*480*65
	220-50/60		28/26			

FC-15DY

SIDE VIEW



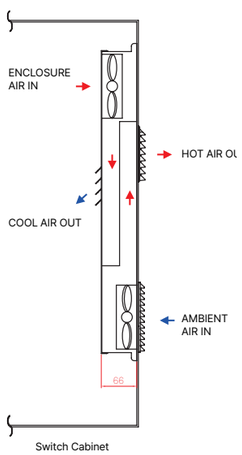
MOUNTING CUT-OUT



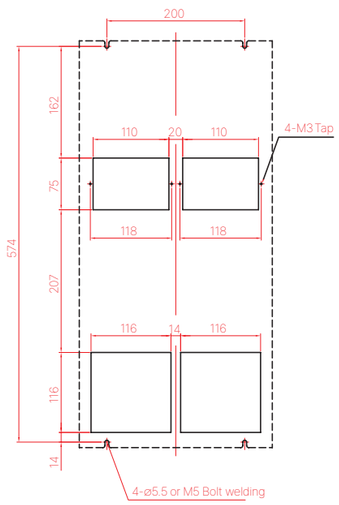
MODEL	VOLTAGE (V~Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
FC-15DY	115-50/60	12/15	31/29	2	4.8	300*480*65
	220-50/60		28/26			

FC-280DY

SIDE VIEW



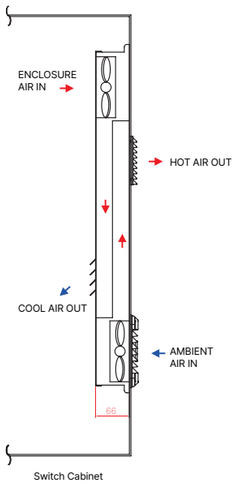
MOUNTING CUT-OUT



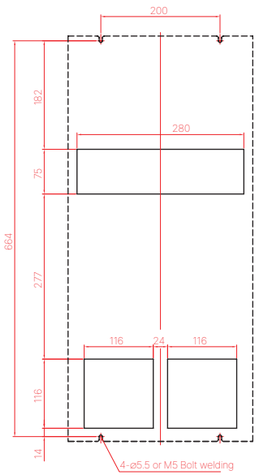
MODEL	VOLTAGE (V~Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
FC-280DY	115-50/60	16/20	62/58	4	5.4	280*590*66
	220-50/60		56/52			

FC-310DY

SIDE VIEW



MOUNTING CUT-OUT



MODEL	VOLTAGE (V~Hz)	THERMAL OUTPUT(W/℃)	INPUT POWER (W)	FANS(EA)	WEIGHT (KG)	DIMENSION (W*H*D)
FC-310DY	115-50/60	20/24	62/58	4	7.8	310*680*66
	220-50/60		56/52			

카다로그 모델 외에도 다양한 모델을 보유하고 있으니 문의 부탁드립니다.

We have many different types of models other than showed in the catalogue.

제품의 외관 및 취부도는 제품 개선을 위해 예고없이 변경 될 수 있으니, 홈페이지 확인 또는 언제든지 문의 부탁드립니다.

The exteriors and mounting cut-out lines could be changed for its upgrade without any notification. Please check our website or ask us anytime for confirmation.

PORTABLE AIR CONDITIONER

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DREAM COOL

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특장점 SPECIAL FEATURES

1 **소형화 및 경량화된 제품으로 이동이 매우 간편합니다.**
It is very compact in size and easy to be moved.

2 **특허 받은 응축수 자가증발 시스템으로 물통의 물을 매번 비우는 번거로움을 줄였습니다.**
Patented self-evaporating system reduces the hassle of emptying the condensed water tank each time.

3 **제품 이동 없이도 찬바람 자바라 덕트가 자동으로 90도 회전(360도 수동회전)하여 여러 인원이 동시에 사용할 수 있습니다.** (DMA-2E 및 DMA-5200A 모델에 한함)
The cool wind duct automatically rotates 90 degrees (360 degrees for manual rotation), allowing multiple people use it at the same time. (For DMA-2E and DMA-5200A)

4 **공기분산하우징 적용으로 더운바람이 미세하게 토출되어 사용자가 직접적으로 더운 바람을 못느끼도록 설계되었습니다.** (DMA-1E 및 2E 모델에 한함)
The air dispersing housing is designed to emit hot air in fine particles so that the user can barely feel the hot air directly.(For DMA-1E and DMA-2E)

제품사양 I SPECIFICATION

구분 (Category)		단위 (Unit)	DMA-1E	DMA-2E	DMA-5200A
제품 기능 (Function)	냉방 (Cooling)	-	○	○	○
	제습(Dehumidifying)	-	-	-	○
	송풍(Fan)	-	-	○	○
	자바라 자동회전(Auto-Swing Duct)	-	-	○	○ (2구 동시)
	조작방식(Button Type)	-	셀렉터 스위치	마이콤	
	리모컨(Remote Contol)	-	-	○	○
제품 사양 (Specification)	냉방능력(Cooling Capacity)	W	1625		5200
	냉방면적(Cooling Area)	평형	4평형		14평형
	전원(Power Source)	-	220V 60Hz(단상)		
	소비전력(Power Consumption)	W	640	644	2300
	제품크기(W*H*D)(Size)	mm	462*607*271	462*672*271	470*1130*511
	제품중량(Weight)	Kg	24	25.5	84
	안전장치(Safety)	-	-	응축수 만수 감지기능	
	AIR 필터(Air Filter)	-	염화망 필터		
	온도차(Temperature Difference)	℃	12~14		
	냉매(Refrigerant)	-	R-410a		
	사용환경(Using Environment)	℃	20~45		

대양기전주식회사
DAE YANG MECHATRONICS CO., LTD.

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