

**IZUMI**  
AIR CONDITIONER

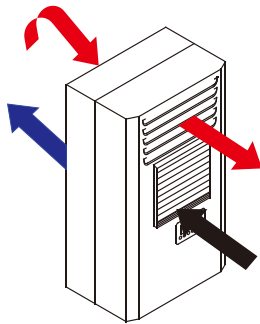
# IZUMI PANEL AIR COOLER



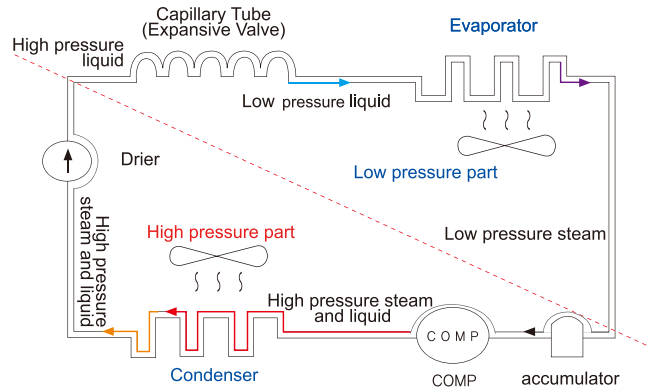
**IZUMI CORPORATION, TOKYO, JAPAN**

## Cooling principle and cycle

1. The compressor presses refrigerant and then sends to the condenser.
2. The compressed refrigerant evaporates while it passes the capillary tube
3. The compressed refrigerant absorbs the heat and decreases the temperature inside the panel.  
At this time, Humidity is also removed, the inflow of outside air is blocked so the inside control box always maintains setting temperature.



<Cooling Principal>



< Cooling cycle >

## The features of product

1. Function of abnormality output
  - Function of abnormality output
  - Output of high temperature alarm
  - Low temperature alarm
  - Abnormality alarm in compressor
  - Indication of door open of control box
  - Abnormality alarm of high/low pressure in refrigerant.
2. Digital temperature control indicator
  - User can see the operating situation easily.
3. Function of evaporation of condense water
  - PTC heater which is low power ,high efficiency is used.
  - PTC heater is very efficient electric power because it operates with compressor.
4. Use of new refrigerant
  - R-134a/R-410a that ozone -destroying index is Zero are used to all CoolZen model
5. Supply of spare part is easy and user can get after-sale service easily.



Terminal Board	Description
SE1	Temperature sensor input contact
SE2	
DR2	Door signal input contact
DR1	
NO	Error output contact
NC	
COM	
L	Power input contact
N	
G	

# Panel Air Conditioner

## Selection of panel air conditioner

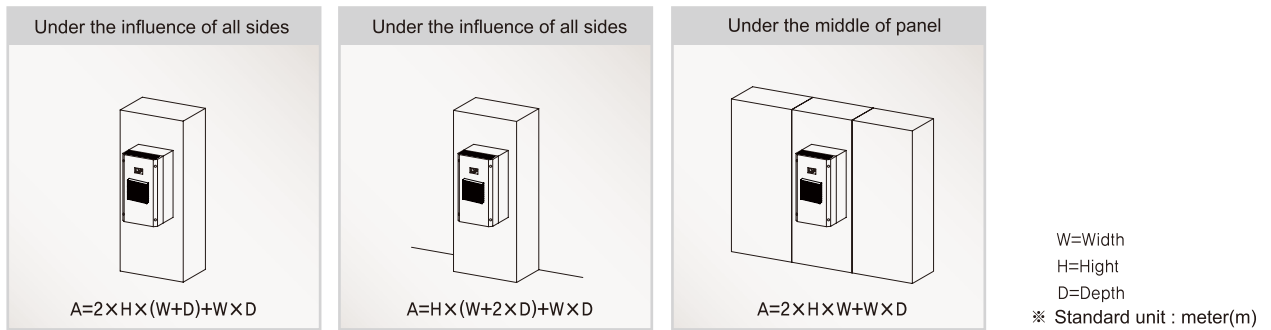
1. What is the maximum temperature( °C) of outside panel (To) and the target temperature( °C) of inside panel? (Ti)
2. What is the temperature differences between To and Ti ? ( ΔT)  $\Delta T=To-Ti$
3. What is the Heat transfer coefficient(K) of the material of panel?.(Kcal/h. m<sup>2</sup>.°C)  
K=5.5 (Painted metal),K=3.5( Polyester), K=3.7(Stainless steel),K=12( Aluminum)
4. What is the surface area of outside panel?.(A) (Please refer below the pictures)
5. What is the infiltrative calorific value from outside panel? (Kcal/h)  $Qs=A \times \Delta T \times K$
6. What is the calorific value of machine parts inside panel?.(Qi) ( Please refer below the table for calorific value).
7. What is the required cooling capacity(QN)?  $QN= (QS +Qi) \times 1.2$ (safety factor. )
8. The conversion of heat value 1W/h → 0.86Kcal/h, 1Kcal/h→4 BTU/h
9. The example of selection of CoolZen

700(W)×2000(H)×500(D), ΔT=5°C, K=4,0Kcal/h · m<sup>2</sup> · °C, Qi=800W

$A=2 \times H \times (W+D)+W \times D = 2 \times 2 \times (0,7+0,5)+0,7 \times 0,5 = 5,15 \text{ m}^2$

$Qs=A \times \Delta T \times K = 5,15 \times 5^\circ\text{C} \times 4,0 \text{Kcal/h} \cdot \text{m}^2 \cdot ^\circ\text{C} = 103 \text{Kcal/h}$

$QN=(Qs+Qi) \times 1,2 = (103 \text{Kcal/h} + 688 \text{Kcal/h}) \times 1,2 = 949,2 \text{Kcal/h}$  Select model which is 1000Kcal/h in the CoolZen Model



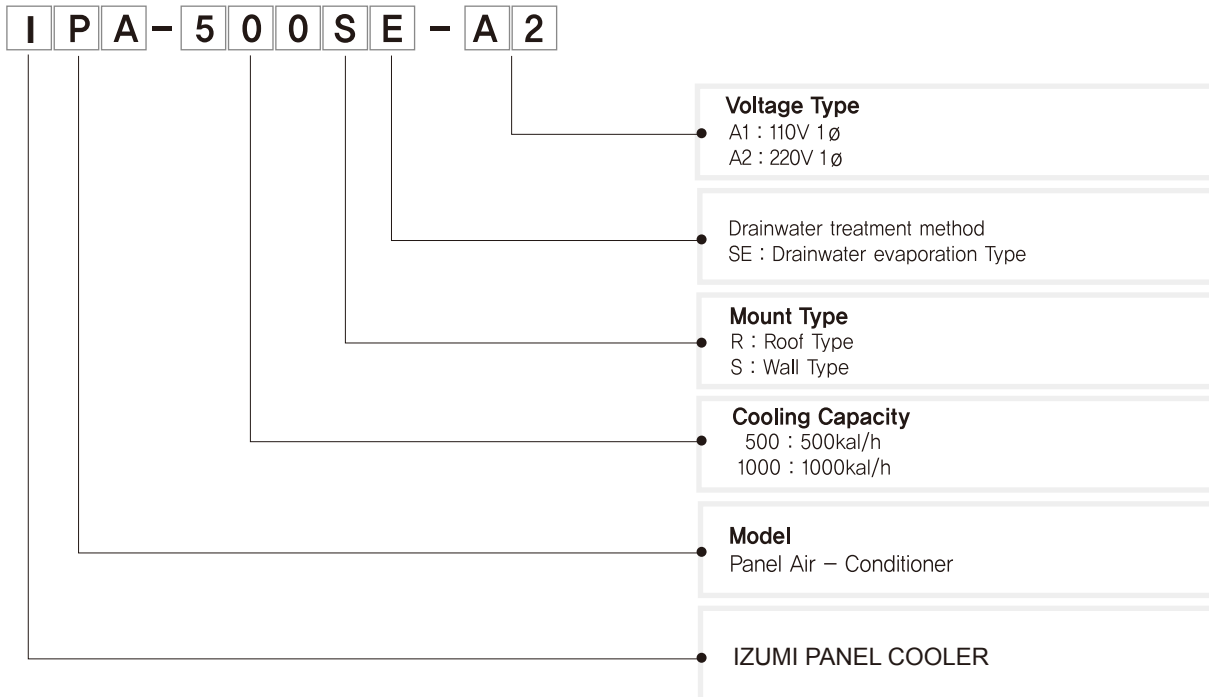
## Information for selecting a panel air conditioner

Installing machine	Calorific value (standard criteria)	notes
Transformer for controlling	* rating - 10VA → 3Kcal/h capacity - 100VA → 14Kcal/h - 1KVA → 61Kcal/h - 10KVA → 145Kcal/h	The smaller the size is, the more the calorific rate is
Circuit breaker for wiring	* rating - 50VA → 11Kcal/h capacity - 100A → 18Kcal/h - 225A → 43Kcal/h - 400A → 72Kcal/h	Calorific value in a rated current (in the case of 3p)
Electronic contactor	* rating - 4kW → 7Kcal/h capacity - 30kW → 90Kcal/h	Calorific value in applying an rated current in maximum
Thermal Overload Relay	* rating - 35A → 3Kcal/h capacity - 100A → 7Kcal/h - 150A → 8Kcal/h	Calorific value in applying an rated current in maximum
Inverter	5~10 % of the rated current output	Calorific value in the output of continuous rated current
Servo amp	3~6 % of the rated current output	In the case of the maximum output in the output of rated current
Power Unit	5~10 % of the rated current output	Calorific value in the rated current output

\* Calorific value of the table is not fixed, it is normal cafeteria.

# Panel Air Conditioner

## Recommend Air-con Model Selection Method



## Model Specifications

Model	Type	Cooling Capacity		Current	Fuse	Weight	Dimensions(W×H×D)
		50Hz	60Hz				
IPA-300	S	220 Kcal/h (880 BTU)	270 Kcal/h (1080 BTU)	1.8A	5A	20.0Kg	280×494×180(mm)
	SE			3.5A	10A	23.0Kg	280×600×180(mm)
IPA-500	S	450 Kcal/h (1800 BTU)	500 Kcal/h (2000 BTU)	3.0A	5A	24.0Kg	320×600×205(mm)
	SE			5.7A	10A	27.0Kg	320×706×205(mm)
IPA-800	S	720 Kcal/h (2880 BTU)	800 Kcal/h (3200 BTU)	4.8A	10A	35Kg	380×770×205(mm)
	SE			7.5A	15A	38.5Kg	380×876×205(mm)
IPA-1000	S	930 Kcal/h (3700 BTU)	1000 Kcal/h (4000 BTU)	4.8A	10A	36.0Kg	380×800×205(mm)
	SE			7.5A	15A	39.5Kg	380×906×205(mm)
IPA-1500	S	1350 Kcal/h (5400 BTU)	1500 Kcal/h (6000 BTU)	6.0A	15A	48.0Kg	420×1050×250(mm)
	SE			11.4A	20A	52.0Kg	420×1156×250(mm)
IPA-2000	S	1850 Kcal/h (7400 BTU)	2000 Kcal/h (8000 BTU)	6.0A	15A	48.0Kg	420×1050×250(mm)
	SE			11.4A	20A	52.0Kg	420×1156×250(mm)
IPA-3000	S	2750 Kcal/h (11000 BTU)	3000 Kcal/h (12000 BTU)	10.8A	20A	65.0Kg	500×1450×265(mm)
	SE			16.2A	25A	69.0Kg	500×1556×265(mm)
IPA-500	S	450 Kcal/h (1800 BTU)	500 Kcal/h (2000 BTU)	2.5A	5A	24Kg	350×443×180(mm)
	SE			5.2A	10A	27Kg	350×549×180(mm)
	R			2.5A	5A	25Kg	320×244×460(mm)
IPA-1000	S	930 Kcal/h (3700 BTU)	1000 Kcal/h (4000 BTU)	4.1A	10A	36Kg	435×610×235(mm)
	SE			6.8A	15A	39.5Kg	435×716×235(mm)
	R			4.1A	10A	37Kg	438×267×508(mm)

# Panel Air Conditioner

## Selection of panel air conditioner

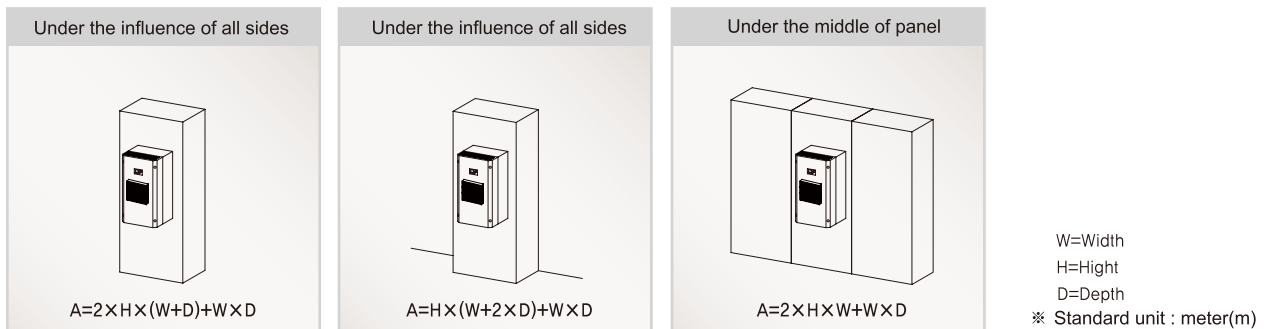
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7. What is the required cooling capacity(QN)? QN=( QS +Qi) X 1.2(safety factor. )
8. The conversion of heat value 1W/h → 0.86Kcal/h, 1Kcal/h→4 BTU/h
9. The example of selection of CoolZen

700(W)×2000(H)×500(D), ΔT=5°C, K=4.0Kcal/h · m<sup>2</sup> · °C, Qi=800W

A=2×H×(W+D)+W×D =2×2×(0.7+0.5)+0.7×0.5 =5.15m<sup>2</sup>

Qs=A×ΔT×K =5.15 ×5°C×4.0Kcal/h · m<sup>2</sup> · °C =103Kcal/h

QN=(Qs+Qi)×1.2 =(103Kcal/h+688Kcal/h)×1.2 = 949.2Kcal/h Select model which is 1000Kcal/h in the CoolZen Model



## Information for selecting a panel air conditioner

Installing machine	Calorific value (standard criteria)	notes
Transformer for controlling	* rating capacity - 10VA → 3Kcal/h - 100VA → 14Kcal/h - 1KVA → 61Kcal/h - 10KVA →145Kcal/h	The smaller the size is, the more the calorific rate is
Circuit breaker for wiring	* rating capacity - 50VA → 11Kcal/h - 100A → 18Kcal/h - 225A → 43Kcal/h - 400A → 72Kcal/h	Calorific value in a rated current (in the case of 3p)
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Thermal Overload Relay	* rating capacity - 35A → 3Kcal/h -100A → 7Kcal/h -150A → 8Kcal/h	Calorific value in applying an rated current in maximum
Inverter	5~10 % of the rated current output	Calorific value in the output of continuous rated current
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Power Unit	5~10 % of the rated current output	Calorific value in the rated current output

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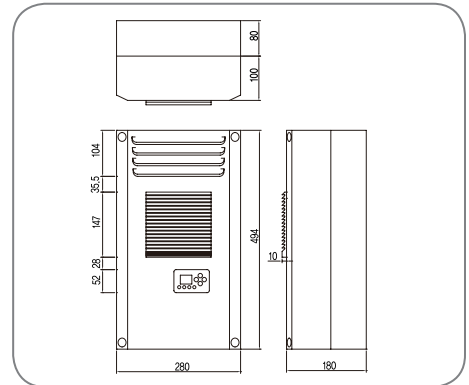
# Panel Air Conditioner

## I-COOL IPA-300S

Type of Non Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	396W
Rated voltage	1 φ 220V 50/60Hz
Rated current	1.8A
Refrigerant	R-134a
Cooling capacity	220/270Kcal/h (1,080BTU)
Compressor	0.07kW(1/10Hp)
Weight	20kg
Dimension	280×494×180mm(WHD)

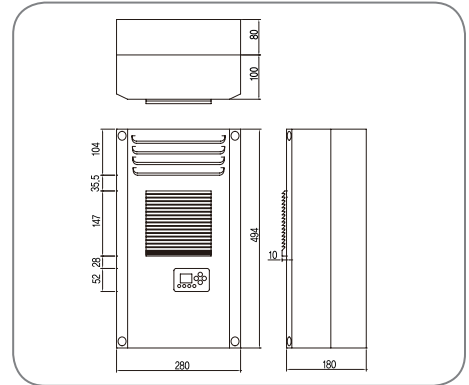


## I-COOL IPA-300SE

Type of Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	990W
Rated voltage	1 φ 220V 50/60Hz
Rated current	3.5A
Refrigerant	R-134a
Cooling capacity	220/270Kcal/h (1,080BTU)
Compressor	0.07kW(1/10Hp)
Weight	23kg
Dimension	280×600×180mm(WHD)

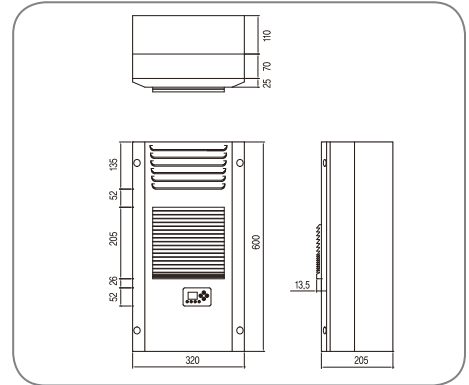


## I-COOL IPA-500S

Type of Non Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	660W
Rated voltage	1 φ 220V 50/60Hz
Rated current	3.0A
Refrigerant	R-134a
Cooling capacity	450/500Kcal/h (2,000BTU)
Compressor	0.15kW(1/5Hp)
Weight	24kg
Dimension	320×600×205mm(WHD)

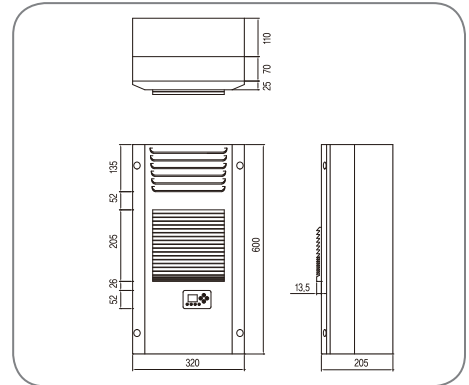


## I-COOL IPA-500SE

Type of Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	1254W
Rated voltage	1 φ 220V 50/60Hz
Rated current	5.7A
Refrigerant	R-134a
Cooling capacity	450/500Kcal/h (2,000BTU)
Compressor	0.15kW(1/5Hp)
Weight	27kg
Dimension	320×706×205mm(WHD)



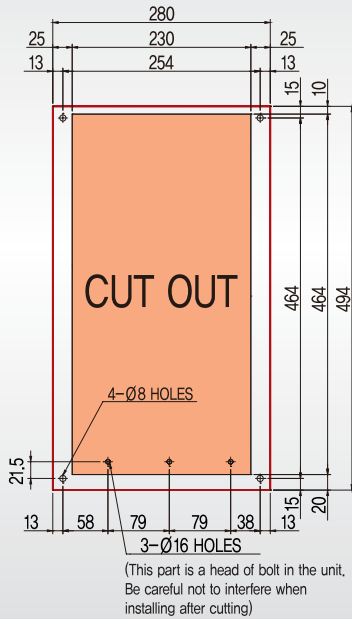
# Panel Air Conditioner

## I-COOL IPA-300 S/SE

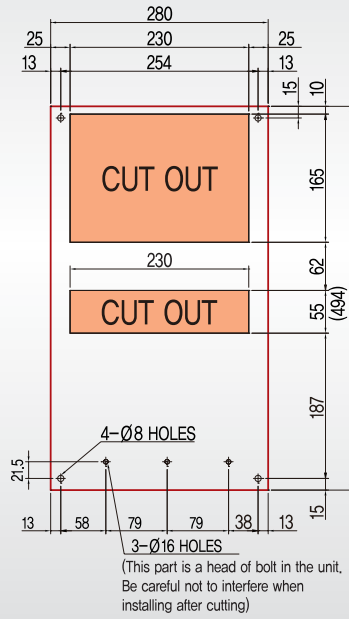
### Installation drawing

#### Outside panel installation

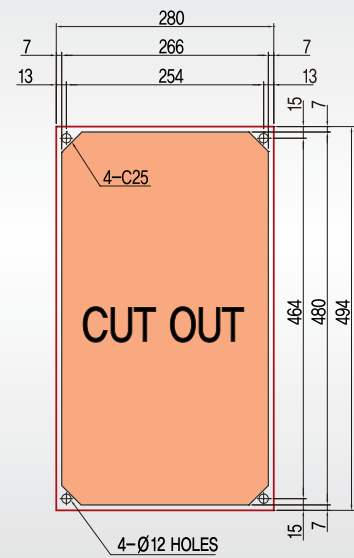
##### A. Whole cutting



##### B. Partial cutting



#### Half insertion installation

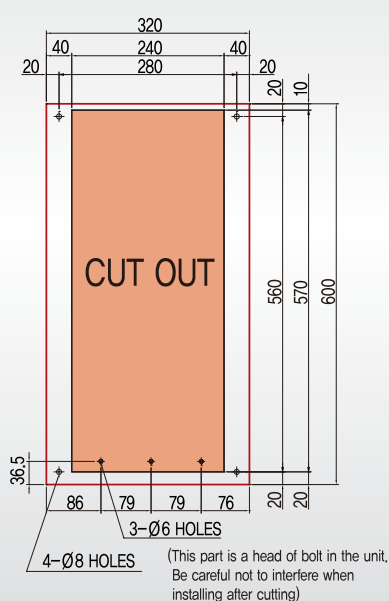


## I-COOL IPA-500 S/SE

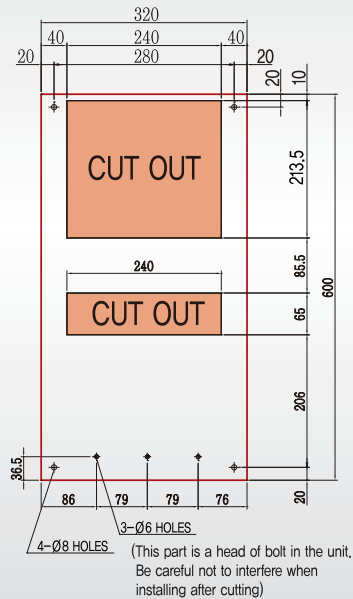
### Installation drawing

#### Outside panel installation

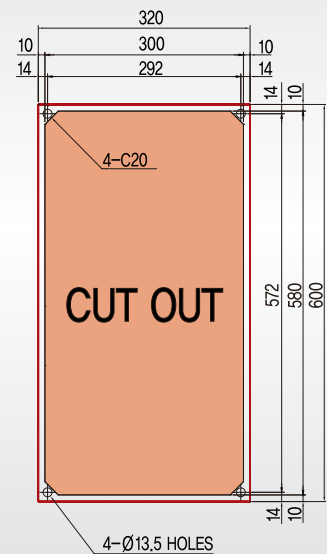
##### A. Whole cutting



##### B. Partial cutting



#### Half insertion installation





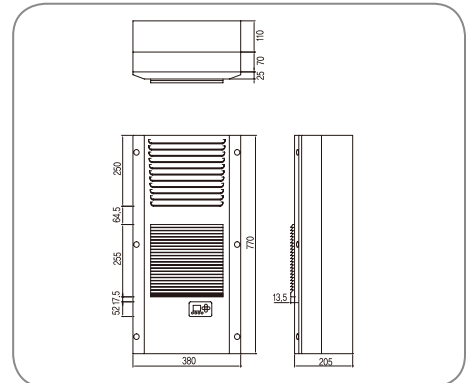
# Panel Air Conditioner

## I-COOL IPA-800S

Type of Non Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	1056W
Rated voltage	1 φ 220V 50/60Hz
Rated current	4.8A
Refrigerant	R-134a
Cooling capacity	720/800Kcal/h (3,200BTU)
Compressor	0.25kW(1/3Hp)
Weight	35kg
Dimension	380×770×205mm(WHD)

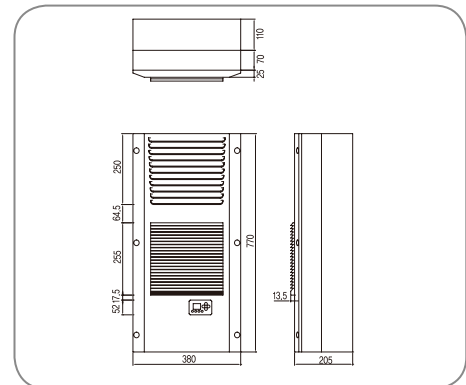


## I-COOL IPA-800SE

Type of Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	1650W
Rated voltage	1 φ 220V 50/60Hz
Rated current	7.5A
Refrigerant	R-134a
Cooling capacity	720/800Kcal/h (3,200BTU)
Compressor	0.25kW(1/10Hp)
Weight	38.5kg
Dimension	380×876×205mm(WHD)

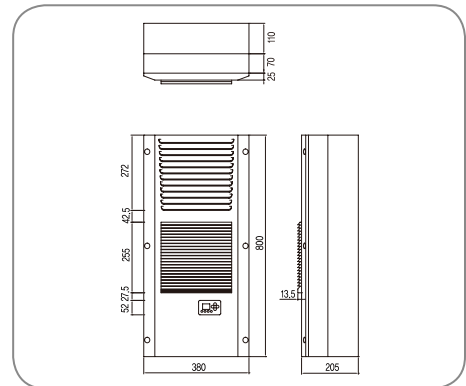


## I-COOL IPA-1000S

Type of Non Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	1056W
Rated voltage	1 φ 220V 50/60Hz
Rated current	4.8A
Refrigerant	R-134a
Cooling capacity	930/1000Kcal/h (4,000BTU)
Compressor	0.25kW(1/3Hp)
Weight	36kg
Dimension	380×800×205mm(WHD)

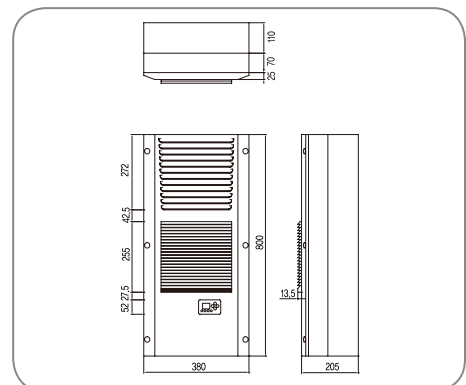


## I-COOL IPA-1000SE

Type of Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	1650W
Rated voltage	1 φ 220V 50/60Hz
Rated current	7.5A
Refrigerant	R-134a
Cooling capacity	930/1000Kcal/h (4,000BTU)
Compressor	0.25kW(1/3Hp)
Weight	39.5kg
Dimension	380×906×205mm(WHD)



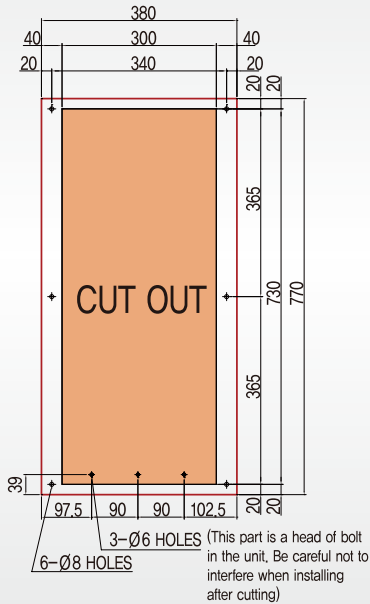


# Panel Air Conditioner

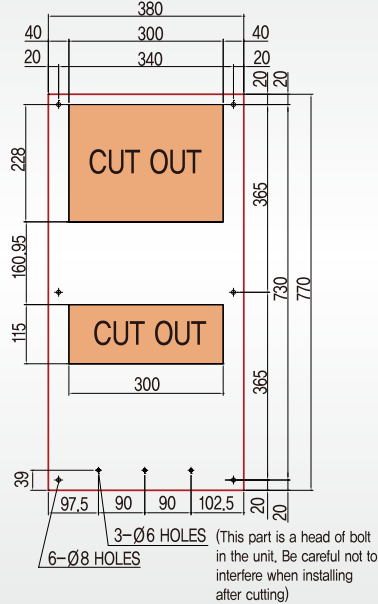
## I-COOL IPA-800 S/SE Installation drawing

### Outside panel installation

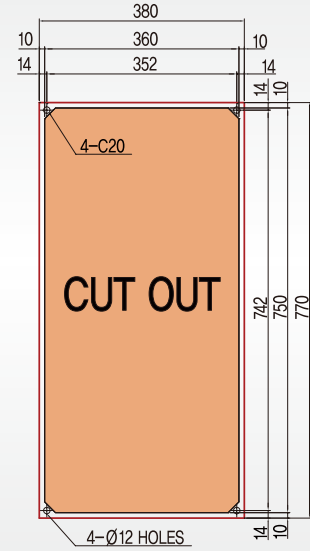
#### A. Whole cutting



#### B. Partial cutting



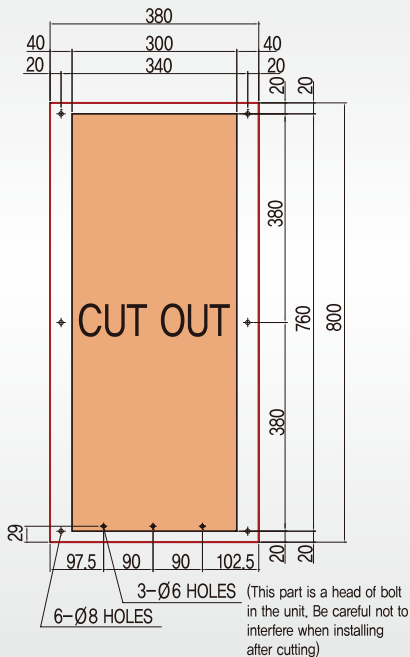
### Half insertion installation



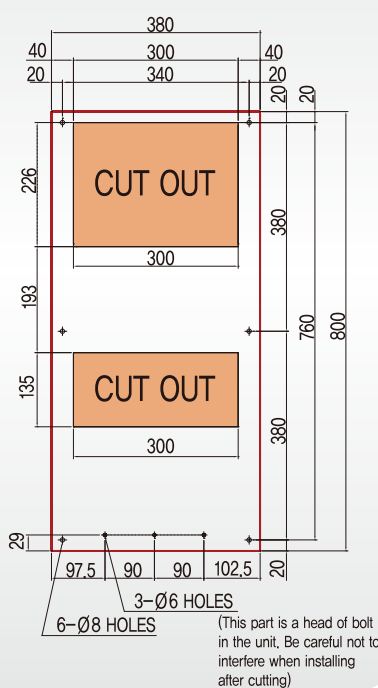
## I-COOL IPA-1000 S/SE Installation drawing

### Outside panel installation

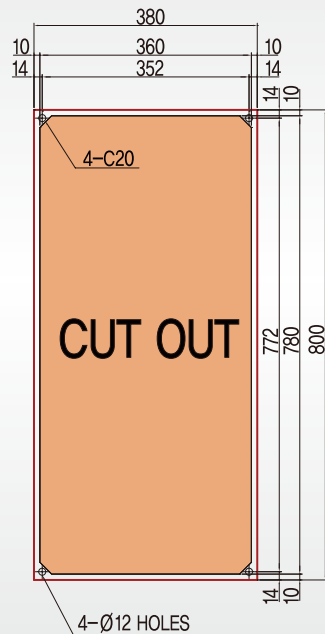
#### A. Whole cutting



#### B. Partial cutting



### Half insertion installation



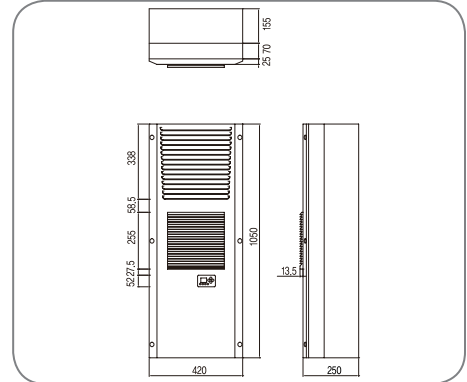
# Panel Air Conditioner

## I-COOL IPA-1500S

Type of Non Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	1320W
Rated voltage	1 φ 220V 50/60Hz
Rated current	6.0A
Refrigerant	R-22 / R-410a
Cooling capacity	1350/1500Kcal/h (6,000BTU)
Compressor	0.40kW(1/2Hp)
Weight	48kg
Dimension	420×1050×250mm(WHD)

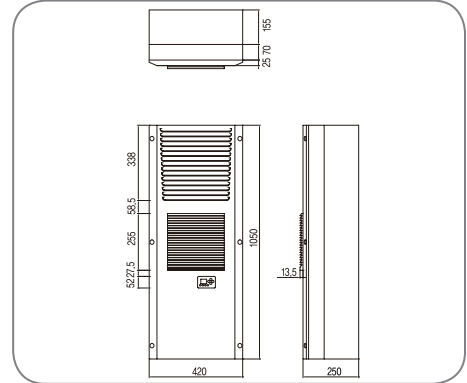


## I-COOL IPA-1500SE

Type of Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	2508W
Rated voltage	1 φ 220V 50/60Hz
Rated current	11.4A
Refrigerant	R-22 / R-410a
Cooling capacity	1350/1500Kcal/h (6,000BTU)
Compressor	0.40kW(1/2Hp)
Weight	52kg
Dimension	420×1156×250mm(WHD)

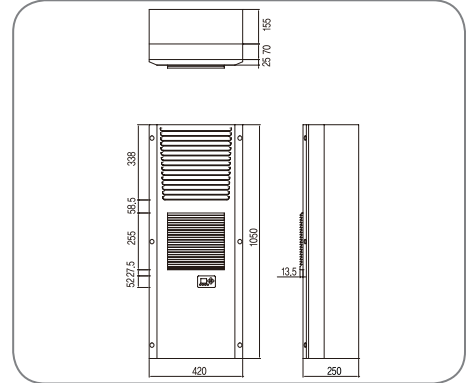


## I-COOL IPA-2000S

Type of Non Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	1320W
Rated voltage	1 φ 220V 50/60Hz
Rated current	6.0A
Refrigerant	R-22 / R-410a
Cooling capacity	1850/2000Kcal/h (8,000BTU)
Compressor	0.45kW(3/5Hp)
Weight	48kg
Dimension	420×1050×250mm(WHD)

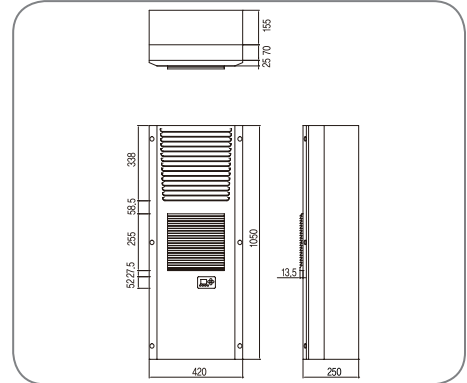


## I-COOL IPA-2000SE

Type of Evaporation, Side Mounting, Half Insertion



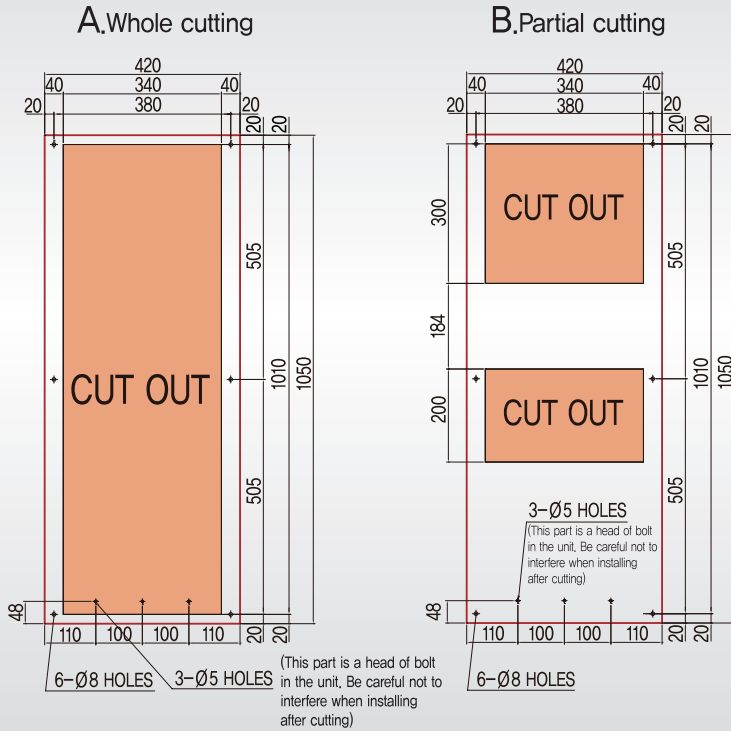
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Rated current	11.4A
Refrigerant	R-22 / R-410a
Cooling capacity	1850/2000Kcal/h (8,000BTU)
Compressor	0.45kW(3/5Hp)
Weight	52kg
Dimension	420×1156×250mm(WHD)



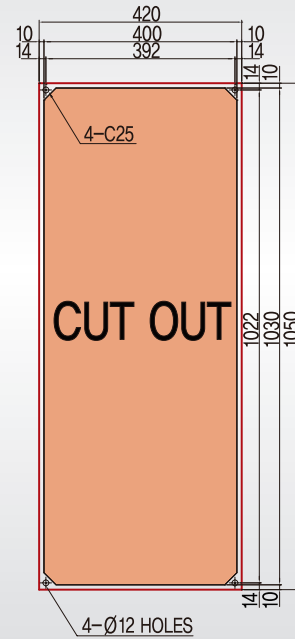
# Panel Air Conditioner

## I-COOL IPA-1500 S/SE Installation drawing

### Outside panel installation

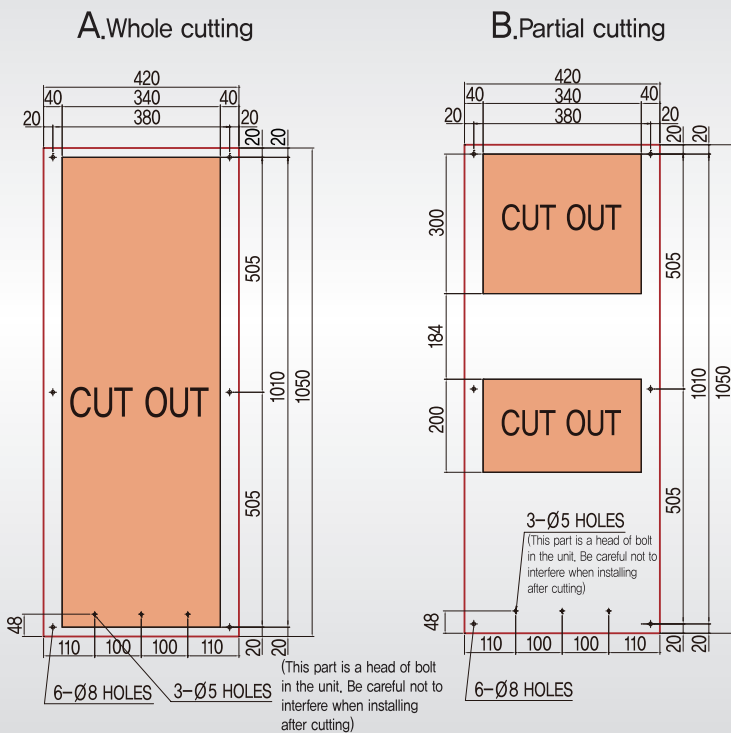


### Half insertion installation

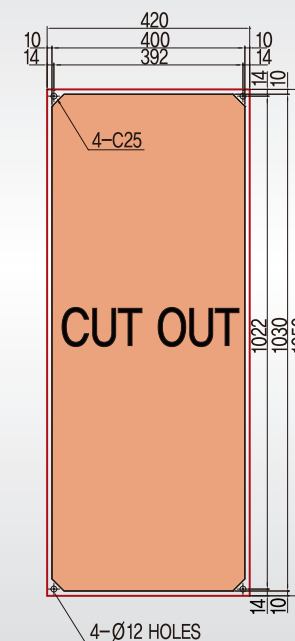


## I-COOL IPA-2000 S/SE Installation drawing

### Outside panel installation



### Half insertion installation



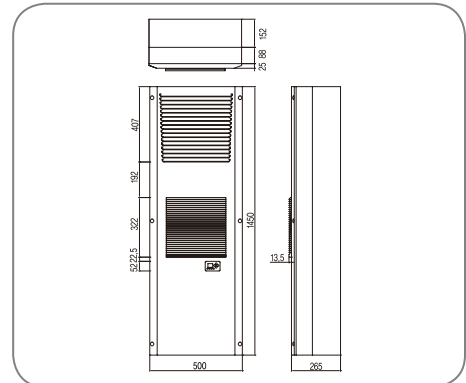
# Panel Air Conditioner

## I-COOL IPA-3000S

Type of Non Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	2376W
Rated voltage	1 φ 220V 50/60Hz
Rated current	10.8A
Refrigerant	R-22 / R-410a
Cooling capacity	2750/3000Kcal/h (12,000BTU)
Compressor	0.75kW(1Hp)
Weight	65kg
Dimension	500 × 1450 × 265mm(WHD)

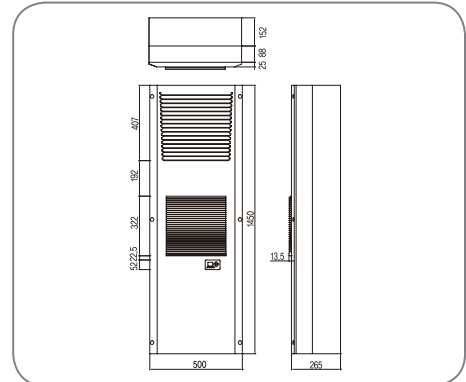


## I-COOL IPA-3000SE

Type of Evaporation, Side Mounting, Half Insertion



Mounting method	Outside
Consumption	3564W
Rated voltage	1 φ 220V 50/60Hz
Rated current	16.2A
Refrigerant	R-22 / R-410a
Cooling capacity	2750/3000Kcal/h (12,000BTU)
Compressor	0.75kW(1Hp)
Weight	69.5kg
Dimension	500 × 1556 × 265mm(WHD)



## I-COOL HPA-500R

Type of Non Evaporation, top mounting



Mounting method	Top of the enclosure
Consumption	550W
Rated voltage	1 φ 220V 50/60Hz
Rated current	2.5A
Refrigerant	R-134a
Cooling capacity	450/500Kcal/h (2,000BTU)
Compressor	0.15kW(1/5Hp)
Weight	25kg
Dimension	320 × 244 × 460mm(WHD)

## I-COOL HPA-500S

Type of Non Evaporation, Side Mounting

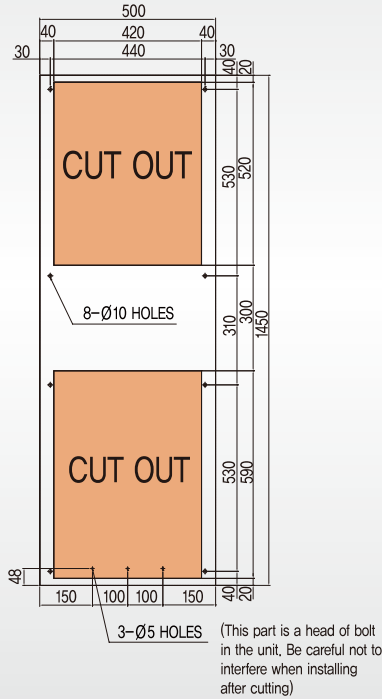


Mounting method	Top of the enclosure
Consumption	550W
Rated voltage	1 φ 220V 50/60Hz
Rated current	2.5A
Refrigerant	R-134a
Cooling capacity	450/500Kcal/h (2,000BTU)
Compressor	0.15kW(1/5Hp)
Weight	24kg
Dimension	350 × 443 × 180mm(WHD)

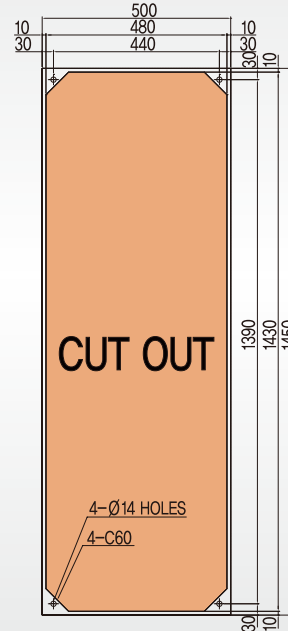
# Panel Air Conditioner

## I-COOL IPA-3000 S/SE Installation drawing

Outside panel installation

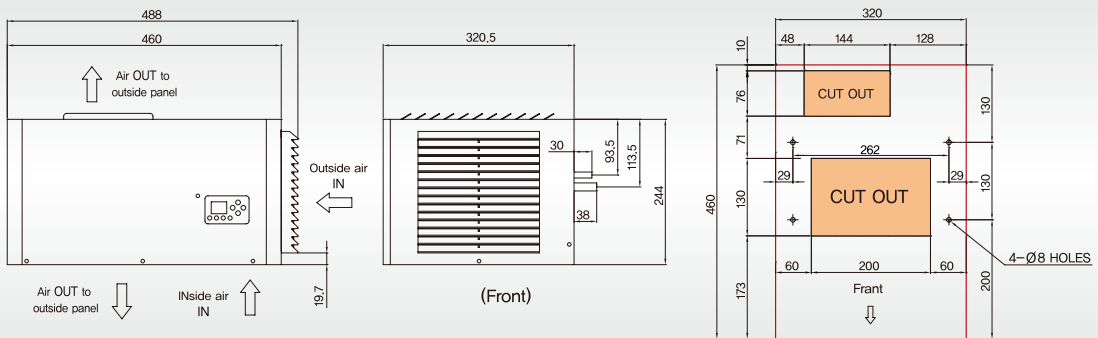


Half insertion installation



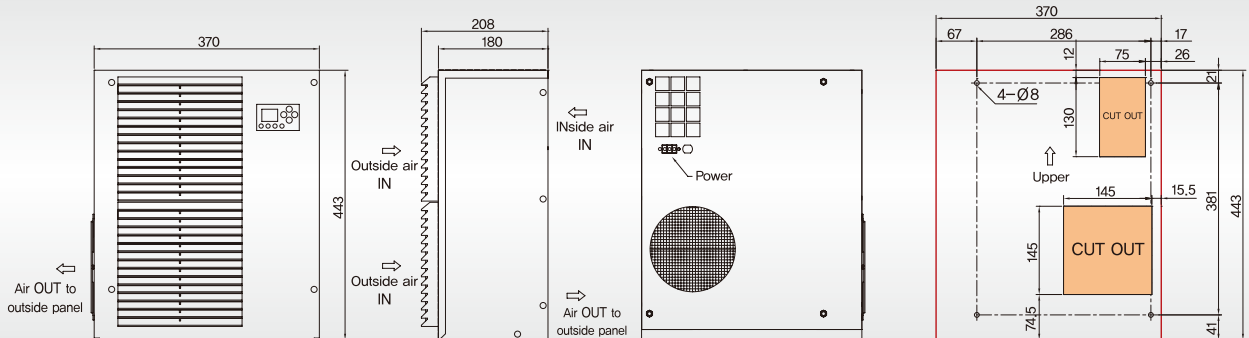
## I-COOL HPA-500R Installation drawing

[Outside panel installation only]



## I-COOL HPA-500S Installation drawing

[Outside panel installation only]



## Panel Air Conditioner

### I-COOL HPA-500SE

Type of Evaporation, Side Mounting



Mounting method	Top of the enclosure
Consumption	1144W
Rated voltage	1 $\phi$ 220V 50/60Hz
Rated current	5,2A
Refrigerant	R-134a
Cooling capacity	450/500Kcal/h (2,000BTU)
Compressor	0.15kW(1/5Hp)
Weight	27kg
Dimension	350×549×180mm(WHD)

### I-COOL HPA-1000R

Type of Non Evaporation, top mounting



Mounting method	Top of the enclosure
Consumption	900W
Rated voltage	1 $\phi$ 220V 50/60Hz
Rated current	4,1A
Refrigerant	R-134a
Cooling capacity	930/1,000Kcal/h (4,000BTU)
Compressor	0.25kW(1/3Hp)
Weight	37kg
Dimension	438×267×508mm(WHD)

### I-COOL HPA-1000S

Type of Non Evaporation, Side Mounting



Mounting method	Top of the enclosure
Consumption	900W
Rated voltage	1 $\phi$ 220V 50/60Hz
Rated current	4,1A
Refrigerant	R-134a
Cooling capacity	930/1000Kcal/h (4,000BTU)
Compressor	0.25kW(1/3Hp)
Weight	36kg
Dimension	435×610×235mm(WHD)

### I-COOL HPA-1000SE

Type of Evaporation, Side Mounting



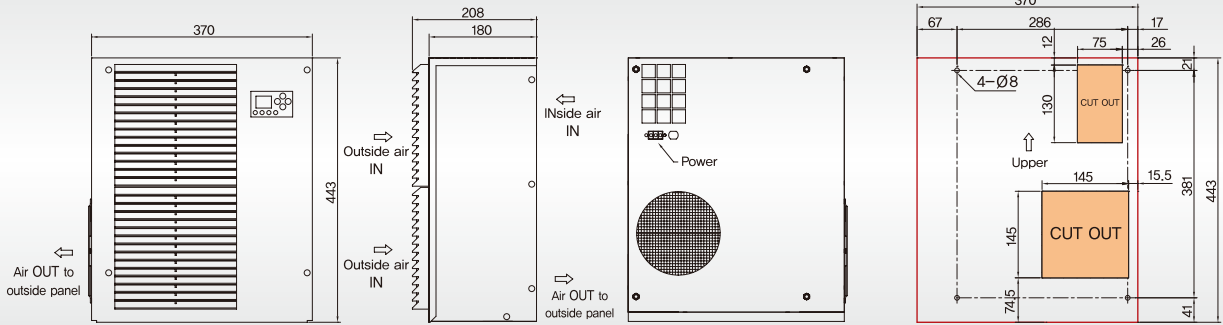
Mounting method	Top of the enclosure
Consumption	1496W
Rated voltage	1 $\phi$ 220V 50/60Hz
Rated current	6,8A
Refrigerant	R-134a
Cooling capacity	930/1000Kcal/h (4,000BTU)
Compressor	0.25kW(1/3Hp)
Weight	39,5kg
Dimension	435×716×235mm(WHD)

# Panel Air Conditioner

## I-COOL HPA-500SE

### Installation drawing

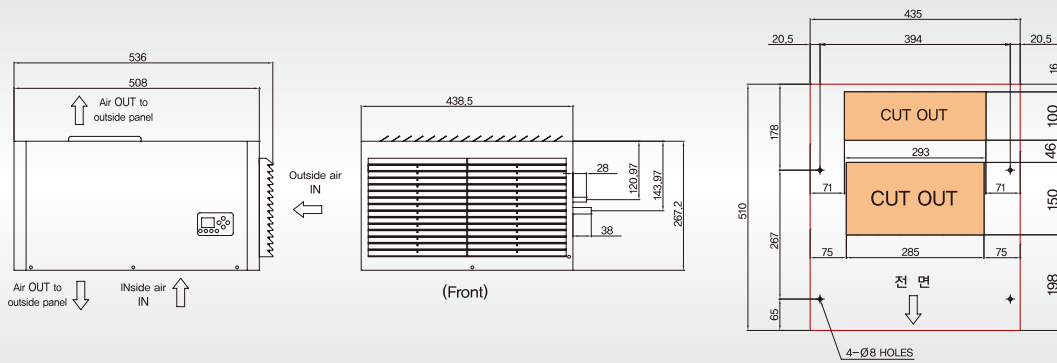
[Outside panel installation only]



## I-COOL HPA-1000R

### Installation drawing

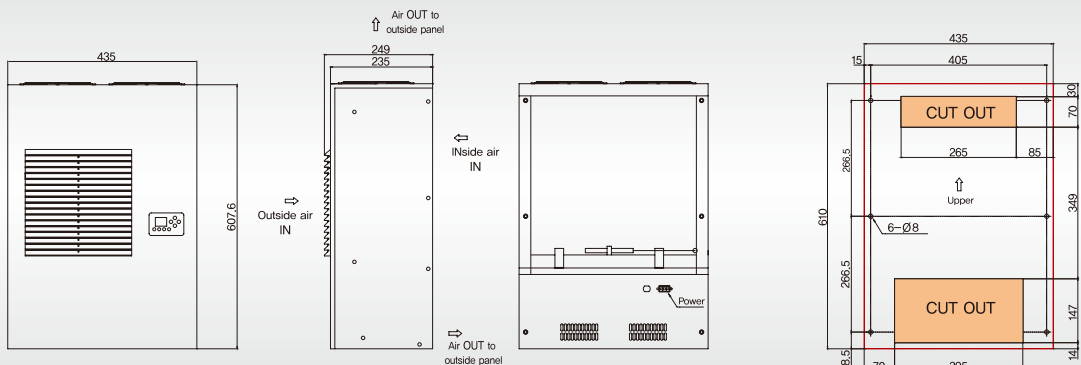
[Outside panel installation only]



## I-COOL HPA-1000S

### Installation drawing

[Outside panel installation only]



## I-COOL HPA-1000SE

### Installation drawing

[Outside panel installation only]

