

EACV-P040/050YBL(-N)(-BS) e-SERIES AIR-COOLED INVERTER CHILLER UNITS



Job Name:

System Reference:

Date:



	50HP 150kW module	60HP 180kW module
Cooling Only	EACV-P040YBL(-N)(-BS)	EACV-P050YBL(-N)(-BS)

* (-N) indicates model with built-in header.

FEATURES

- Inverter-driven
- IH warmer
- Cross-steering fins
- Four DC-driven inverter fans
- Y-shaped structure
- Up to six 40-ton or 50-ton modules can be combined to offer large capacities up to 240 tons or 300 tons

CONTROLLERS

- Individual Remote Controller
 - PAR-W31MAA
- Centralized Remote Controller *
 - AE-200A
 - EW-50A

* AE-200A with software ver. 7.80 or later can be connected.

* EW-50A can only be used as AE-200A's expansion controller.

OPTIONAL PARTS

- Fin guard (DT-150FG *1) EACV-P YBL(-N)(-BS)
- Representative-water temperature sensor (TW-TH16-E) EACV-P YBL(-N)(-BS)
- Piping kit (DT-01HK *2) EACV-P YBL-N(-BS)
 - (Required for built-in header type / single and multiple unit installation)
- Connection piping kit (DT-02HK *2) EACV-P YBL-N(-BS)
 - (Required for built-in header type / single and multiple unit installation)

*1 One set contains 4 fin guards.

*2 For details, please refer to the installation manual

Specifications are subject to change without notice.

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EACV-P040/050YBL(-N)(-BS)

SPECIFICATIONS

Model			EACV-P040YBL(-N)(-BS)	EACV-P050YBL(-N)(-BS)
Power source			Power source 3-phase 3-wire 460V 50/60Hz	Power source 3-phase 3-wire 460V 50/60Hz
Cooling capacity *1		BTU/h	511,800	614,160
		kW	150.00	180.00
	Power input	kW	45.10	59.01
	EER	BTU/(W×h)	11.35	10.41
	IPLV *4	BTU/(W×h)	22.33	21.57
Cooling capacity (EN14511) *2		BTU/h	506,955	606,517
		kW	148.58	177.76
	Power input	kW	46.52	61.25
	EER	BTU/(W×h)	10.90	9.90
	Water flow rate	GPM(m³/h)	113.6(25.8)	136.5(31.0)
Current input		BTU/h	506,955	606,517
		kW	148.58	177.76
	Power input	kW	46.52	61.25
Water pressure drop *1		BTU/(W×h)	10.90	9.90
		GPM(m³/h)	113.6(25.8)	136.5(31.0)
	Cooling current 460V *1	A	63	83
Temp range		A	111	111
		ftAq	38.2	54.9
		psi	16.5	23.8
Circulating water volume range		kPa	114	164
	Cooling	F°(C°)	Outlet water 41~86(Outlet water 5~30) *5	Outlet water 41~86(Outlet water 5~30) *5
	Outdoor	F°(C°)	5~109.4(-15~43) *5	5~109.4(-15~43) *5
Sound pressure level (measured in anechoic room) at 3.28ft(1m) *1		GPM(m³/h)	56.8~149.7(12.9~34.0)	56.8~149.7(12.9~34.0)
		dB (A)	66	66
		dB (A)	84	84
Sound power level (measured in anechoic room) *1		in. (mm)	2 1/2B(65A) housing type joint	2 1/2B(65A) housing type joint
		in. (mm)	2 1/2B(65A) housing type joint	2 1/2B(65A) housing type joint
Diameter of water pipe (Standard piping)		in. (mm)	6B(150A) housing type joint	6B(150A) housing type joint
		in. (mm)	6B(150A) housing type joint	6B(150A) housing type joint
Diameter of water pipe (Inside header piping)		in. (mm)	6B(150A) housing type joint	6B(150A) housing type joint
		in. (mm)	6B(150A) housing type joint	6B(150A) housing type joint
External finish			Polyester powder coating steel plate	Polyester powder coating steel plate
External dimension HxWxD			92-9/16 x 133-7/8 x 42-9/16(2350 x 3400 x 1080)	92-9/16 x 133-7/8 x 42-9/16(2350 x 3400 x 1080)
Net weight	Standard piping	lbs (kg)	2822 (1280)	2822 (1280)
	Inside header piping	lbs (kg)	2857 (1296)	2857 (1296)
Design pressure	R410A	psi(MPa)	601 (4.15)	601 (4.15)
	Water	psi(MPa)	145 (1.0)	145 (1.0)
Heat exchanger	Water side		Stainless steel plate and copper brazing	Stainless steel plate and copper brazing
	Air side		Plate fin and copper tube	Plate fin and copper tube
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Maker		MITSUBISHI ELECTRIC CORPORATION	MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Quantity		4	4
	Motor output	kW	11.7×4	11.7×4
	Lubricant		MEL32	MEL32
Fan	Air flow rate	cfm	9357×4	9357×4
		m³/min	265×4	265×4
		L/s	4417×4	4417×4
	Type, Quantity		Propeller fan x 4	Propeller fan x 4
	Starting method		Inverter	Inverter
	Motor output	kW	0.92×4	0.92×4
Protection	High pressure protection		High pres.Sensor & High pres.Switch at 601psi (4.15MPa)	High pres.Sensor & High pres.Switch at 601psi (4.15MPa)
	Inverter circuit		Over-heat protection, Over current protection	Over-heat protection, Over current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x charge		R410A x 33(lbs) x 4 *3 (R410A x 15(kg) x 4)	R410A x 33(lbs) x 4 *3 (R410A x 15(kg) x 4)
	Control		LEV	LEV

*1 Under normal cooling conditions at outdoor temp 95°FDB/75.2°FWB (35°DB/24°WB) outlet water temp 44.6°F(7°) inlet water temp 53.6°F(12°C). Pump input is not included in cooling capacity and power input.

*2 Under normal cooling conditions at outdoor temp 95°FDB/75.2°FWB(35°DB/24°WB) outlet water temp 44.6°F(7°) inlet water temp 53.6°F(12°C)+. Pump input is included in cooling capacity and power input based on EN14511.

*3 Amount of factory-charged refrigerant is 6.6lbs(3kg) x 4. Please add the refrigerant at the field.

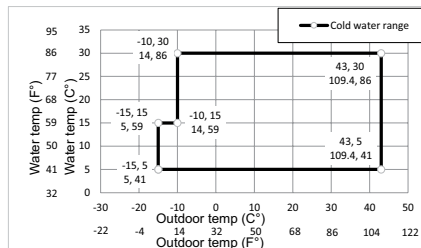
*4 IPLV is calculated in accordance with AHRI 550-590.

- Please don't use the steel material for the water piping.
- Please always make water circulate, or pull the circulation water out completely when not in use.
- Please do not use groundwater or well water in direct.
- The water circuit must be closed circuit.
- Due to continuous improvement, the above specifications may be subject to change without notice.
- This model doesn't equip with a pump.

BTU/h = kW x 3,412
cfm = m³/min x 35.31
lbs = kg / 0.4536

*Above specification data is subject to rounding variation.

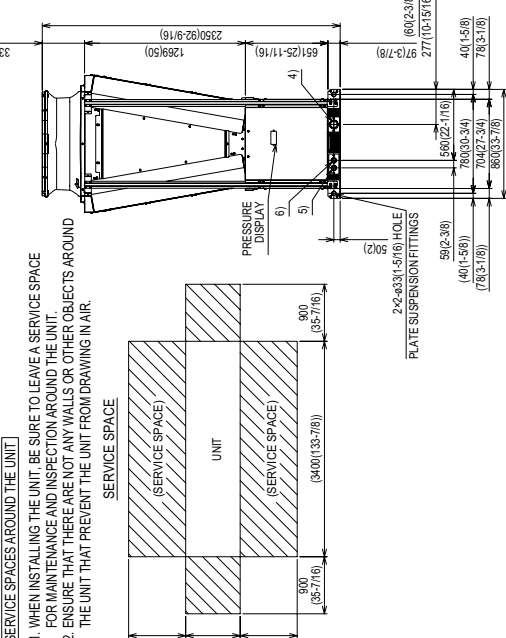
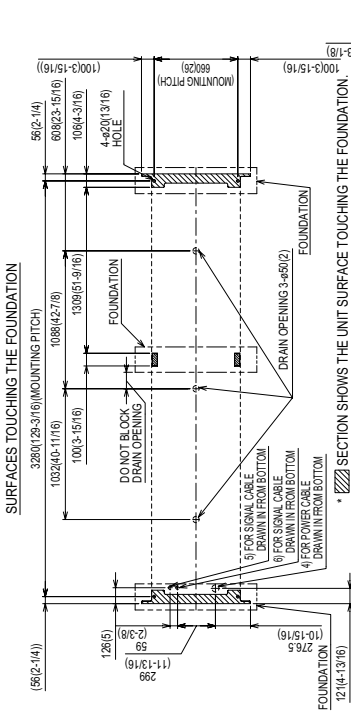
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EACV-P040, 050YBL(-BS)

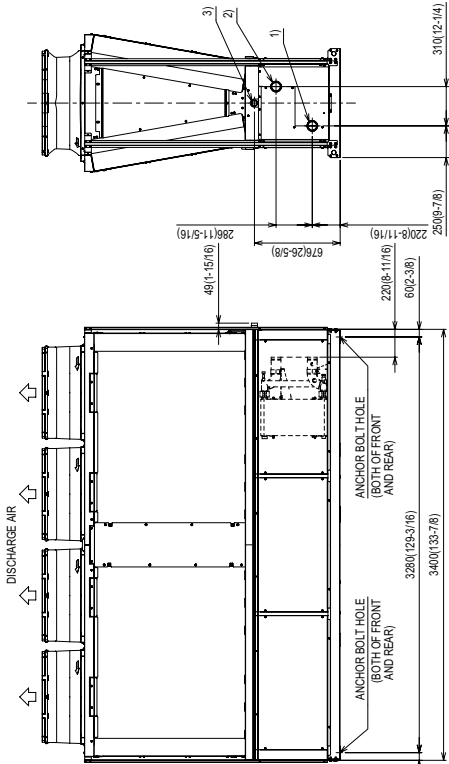
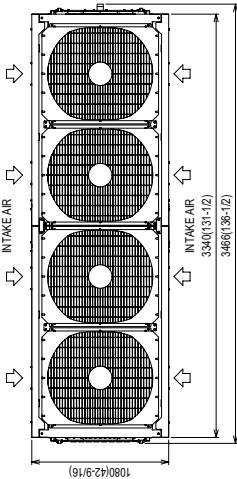
<STANDARD PIPING TYPE>

- [INSTALLATION ON FOUNDATION]**
1. SECURELY FIX THE UNIT WITH BOLTS TO KEEP THE UNIT FROM FALLING DOWN DURING EARTHQUAKES.
 2. INSTALL THE UNIT ON A FOUNDATION MADE OF CONCRETE OR IRON.
 3. NOISE AND VIBRATIONS FROM THE UNIT MAY BE TRANSMITTED THROUGH THE FLOOR AND WALLS. PROVIDE ADEQUATE PROTECTION AGAINST NOISE AND VIBRATION.
 4. ANCHOR BOLTS SHOULD BE PREPARED ON SITE.
 5. WHEN BUILDING THE FOUNDATION, TAKE THE FLOOR STRENGTH, AND PIPING AND WIRING ROUTES INTO CONSIDERATION.



- [NOTE 1. CONNECT COOL WATER PIPES WHILE MAKING SURE OF CONNECTING THE INLETS AND OUTLETS CORRECTLY.]**
[NOTE 2. INTRUSION OF FOREIGN MATERIALS INTO THE HEAT EXCHANGER MAY CAUSE PERFORMANCE DEGRADATION OR FREEZING. BE SURE TO INSTALL CLEANABLE STRAINER (20 MESH MIN.) TO THE INLET OF COOL WATER PIPES.]
[NOTE 3. FOR HOW TO DRAW IN POWER CABLES OR CONNECT COOL WATER PIPES, REFER TO THE SEPARATE DOCUMENT.]
[NOTE 4. THE HOUSING TYPE, JOINTS FOR CONNECTING A COOL WATER INLET AND OUTLET SHOULD BE PREPARED ON SITE.]

NO.	NAME	DESCRIPTION
1)	COOL WATER INLET	2-1/2" HOUSING TYPE JOINT ATTACHED (x 1)
2)	COOL WATER OUTLET	2-1/2" HOUSING TYPE JOINT ATTACHED (x 1)
3)	DRAIN OPENING	R1-1/2 EXTERNAL THREAD
4)	POWER CABLE INLET	ø66(2-5/8) x 1
5)	SIGNAL CABLE INLET (LOW CURRENT CABLE)	ø34(1-3/8)
6)	SIGNAL CABLE INLET (HIGH CURRENT CABLE)	ø34(1-3/8)



Unit: mm (in.)

EACV-P040YBL(-N)(-BS) UNIT PERFORMANCE DATA

STANDARD PERFORMANCE DATA PER MODULE										
Design										
Capacity		Input Power			Efficiency (EER)			IPLV.IP* (EER)		
42.7 ton		45.10 kW			11.35 Btu/W.h			22.33 Btu/W.h		
Performance Points rated at AHRI Ambient Relief										
Unit					Evaporator				Condenser	Altitude ft
Point #	% Load	Capacity ton	Input Power kW	Efficiency (EER) Btu/W.h	Fluid Flow gpm	Pressure Drop [ft H2O]	Entering Fluid Temperature °F	Leaving Fluid Temperature °F	Ambient Air Temperature °F	
1	100	42.7	45	11.3	113.6	38.1	53.6	44.6	95	0
2	90	38.4	33	14.0	113.6	38.1	52.7	44.6	89	0
3	80	34.1	25	16.4	113.6	38.1	51.8	44.6	83	0
4	70	29.9	19	19.0	113.6	38.1	50.9	44.6	77	0
5	60	25.6	14	21.7	113.6	38.1	50.0	44.6	71	0
6	50	21.3	10	24.7	113.6	38.1	49.1	44.6	65	0
7	40	17.1	7	27.5	113.6	38.1	48.2	44.6	59	0
8	30	12.8	6	26.7	113.6	38.1	47.3	44.6	55	0
9	20	8.5	5	20.8	113.6	38.1	46.4	44.6	55	0
10	10	4.3	3	19.6	113.6	38.1	45.5	44.6	55	0
Performance Points rated at Constant Ambient Temperature										
Unit					Evaporator				Condenser	Altitude ft
Point #	% Load	Capacity ton	Input Power kW	Efficiency (EER) Btu/W.h	Fluid Flow gpm	Pressure Drop [ft H2O]	Entering Fluid Temperature °F	Leaving Fluid Temperature °F	Ambient Air Temperature °F	
1	100	42.7	45	11.3	113.6	38.1	53.6	44.6	95	0
2	90	38.4	37	12.4	113.6	38.1	52.7	44.6	95	0
3	80	34.1	31	13.0	113.6	38.1	51.8	44.6	95	0
4	70	29.9	27	13.3	113.6	38.1	50.9	44.6	95	0
5	60	25.6	23	13.4	113.6	38.1	50.0	44.6	95	0
6	50	21.3	19	13.3	113.6	38.1	49.1	44.6	95	0
7	40	17.1	16	13.0	113.6	38.1	48.2	44.6	95	0
8	30	12.8	12	12.7	113.6	38.1	47.3	44.6	95	0
9	20	8.5	8	12.4	113.6	38.1	46.4	44.6	95	0
10	10	4.3	5	9.7	113.6	38.1	45.5	44.6	95	0
* IPLV reflects AHRI standard rating conditions and does not change with user defined conditions										

* IPLV reflects AHRI standard rating conditions and does not change with user defined conditions

EACV-P050YBL(-N)(-BS) UNIT PERFORMANCE DATA

STANDARD PERFORMANCE DATA PER MODULE										
Design										
Capacity		Input Power			Efficiency (EER)			IPLV.IP* (EER)		
51.2 ton		59.01 kW			10.41 Btu/W.h			21.57 Btu/W.h		
Performance Points rated at AHRI Ambient Relief										
Unit					Evaporator				Condenser	Altitude ft
Point #	% Load	Capacity ton	Input Power kW	Efficiency (EER) Btu/W.h	Fluid Flow gpm	Pressure Drop [ft H2O]	Entering Fluid Temperature °F	Leaving Fluid Temperature °F	Ambient Air Temperature °F	
1	100	51.2	59	10.4	136.5	54.9	53.6	44.6	95	0
2	90	46.1	45	12.4	136.5	54.9	52.7	44.6	89	0
3	80	41.0	33	14.8	136.5	54.9	51.8	44.6	83	0
4	70	35.8	25	17.5	136.5	54.9	50.9	44.6	77	0
5	60	30.7	18	20.9	136.5	54.9	50.0	44.6	71	0
6	50	25.6	12	24.6	136.5	54.9	49.1	44.6	65	0
7	40	20.5	9	28.4	136.5	54.9	48.2	44.6	59	0
8	30	15.4	7	28.1	136.5	54.9	47.3	44.6	55	0
9	20	10.2	5	26.8	136.5	54.9	46.4	44.6	55	0
10	10	5.1	3	24.3	136.5	54.9	45.5	44.6	55	0
Performance Points rated at Constant Ambient Temperature										
Unit					Evaporator				Condenser	Altitude ft
Point #	% Load	Capacity ton	Input Power kW	Efficiency (EER) Btu/W.h	Fluid Flow gpm	Pressure Drop [ft H2O]	Entering Fluid Temperature °F	Leaving Fluid Temperature °F	Ambient Air Temperature °F	
1	100	51.2	59	10.40	136.5	54.9	53.6	44.6	95	0
2	90	46.1	50	11.08	136.5	54.9	52.7	44.6	95	0
3	80	41.0	42	11.73	136.5	54.9	51.8	44.6	95	0
4	70	35.8	35	12.32	136.5	54.9	50.9	44.6	95	0
5	60	30.7	29	12.78	136.5	54.9	50.0	44.6	95	0
6	50	25.6	23	13.07	136.5	54.9	49.1	44.6	95	0
7	40	20.5	19	13.14	136.5	54.9	48.2	44.6	95	0
8	30	15.4	14	12.93	136.5	54.9	47.3	44.6	95	0
9	20	10.2	10	12.40	136.5	54.9	46.4	44.6	95	0
10	10	5.1	5	11.49	136.5	54.9	45.5	44.6	95	0
* IPLV reflects AHRI standard rating conditions and does not change with user defined conditions										

1340 Satellite Boulevard, Suwanee, GA 30024
Toll Free: 800-433-4822 www.metahvac.com