

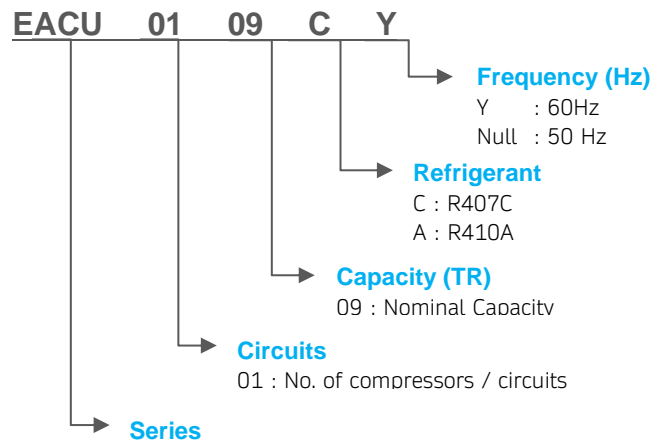
AIR COOLED CONDENSING UNITS

EACU Series - 27 kW to 162 kW
R407C / R410A



Model Nomenclature

Sample Model :- EACU-0109CY



General Features

- All units are equipped with hermetically sealed scroll compressor.
- Scroll compressor has no clearance volume to create losses. Thus, providing higher volumetric efficiency.
- Round tube plate fins heat exchanger is manufactured with copper tube and aluminium fins.
- Axial fans having a special design cold rolled steel impeller blades.
- External rotor AC motor, IP54 protected motor with class F insulation - CE certified.
- Access provided to all the components for easy maintenance.
- Control panels are provided with programmable logic controller along with trip/on indication.
- Ball valve with charging port for suction and liquid line.



Optional Features

- Compressor sound jackets
- Anticorrosive coating for condenser coils
- Copper tube and copper fins condenser coils
- Adjustable type auto reset pressure switches
- Low ambient control system
- Hot gas bypass system
- Soft starter Current transformer

Major Components

Compressor

Compressor used in EACU series are hermetically sealed scroll compressor with the following characteristics:

- High Efficiency
- Restricted wear due to limited moving parts compared over reciprocating compressor
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- Capability to handle certain amount of liquid refrigerant during flood back
- Equipped with protection module against high discharge temperature
- Motor cooled by suction gas
- Units up to 11TR are with one compressor, from 16TR to 23TR are with two compressor and from 44TR to 67TR are with 4 compressors.



Condenser Coil

- Coils are manufactured with copper tube mechanically bonded to aluminium fins that ensure maximum heat transfer capability
- Coils are with 3/8" OD seamless copper tubes
- Coils are leak tested at 400 psig submerged under water
- As an option to aluminium fins, coated aluminium fins or copper fins may be provided.
- Tube support sheets are of galvanized steel, formed to provide structural strength.
- Each coil is completely dehydrated, charged with dry nitrogen, and sealed at the factory upon completion of pressure tests.



Fan & Motor

- Fans are propeller type and direct driven by external rotor motor
- Fans are with upward discharge orientation provided with fan grille
- Axial fans are with life expectancy of 30,000 hours (L10)
- Motors are with two speed, class F insulation, and IP54 protection
- The motors are factory wired using specially selected wires for high ambient operation, terminated to a separate contractor for each fan.



Major Components

Precharge

- Condensing units are shipped with nitrogen holding charge only.

Pipe Connections

- Both Suction and liquid line are equipped with ball valve (sweat connection) for isolation.
- Each valve has a gauge pressure port for ease of checking refrigerant operating pressures.



Casing Structure

- Unit casing are factory assembled and structured on a rigid base frame.
- Casing panels are of heavy gauge galvanized steel sheet and completely weatherized for outdoor installation by baked on electrostatic polyester dry powder coat of approximately 70 microns.
- Unit coating withstand 1000 hours of salt spray test as per ASTM-B 117.
- Unit structures are provided for easy service and maintenance of all the components.



Control Panel

- Unit panel is constructed out of galvanized steel powder coated to withstand GCC climatic conditions.
- Unit is controlled by programmable logic controller which provides all the necessary protection and circuit elements for safe operation of the unit.
- Internal power and control wiring is neatly routed, properly anchored and all wires identified with cable markers.
- The electrical controls used in the control panel are reliable in operation at high ambient conditions for a long period.



Pressure Switch

- Auto reset switch activated by refrigerant pressure if the refrigerant pressure falls/rise above the set pressure- cuts off the compressor, thus protecting the compressor.

Engineering Specifications - R407C					
Model			EACU-0109C	EACU-0110C	EACU-0111C
T3 Condition ¹	Cooling Capacity	KW	27.8	31.8	34.4
		TR	8	9	9.8
	Power Input	KW	11.00	12.30	14.25
	EER		8.6	8.8	8.2
T1 Condition ²	Cooling Capacity	KW	30.5	34.9	38.0
		TR	9	10	11
	Power Input	KW	9.70	10.82	12.65
	EER		10.7	11.0	10.2
Supply Power Source		V/Ph/Hz	400+/-5% / 3 / 50		
Connections	Suction line size	Inch	1.3/8		
	Liquid line size	Inch	5/8		.7/8
Unit Dimensions	Length	mm	1,400		1,400
	Width	mm	1,100		1,100
	Height	mm	965		1,065
Compressor @ T3 Condition	Type		Hermetically Sealed Scroll Compressor		
	No of Compressor	Nos	1	1	1
	Total Power Input	kW	9.8	11.1	12.4
	Max. Operating Current / Compressor	Amps.	19.6	22.3	28.0
Compressor @ T1 Condition	Total Power Input	kW	8.5	9.6	10.8
Condenser Coil	Type		Air Cooled, 3 or 4 Rows with 13 or 14 FPI Fin Spacing, Round Tube Plate Fins (RTPF), Copper Tubes and Aluminum Fins		
	Face Area	Sq.ft.	15	17.5	18.6
		Sq.mtr.	1.40	1.63	1.73
Condenser Fan & Motor	Type		Axial Fans with external Rotor Motor		
	No of fan	Nos	1	1	1
	Air volume	cfm	8,760	9,950	10,870
	Motor size	kW	1.25	1.25	1.85
Unit Weight		Kg	371		394
Ball Valve	Suction line	Inch	1.3/8		
	Liquid line	Inch	5/8		.7/8
<ol style="list-style-type: none"> 1. T3 Condition is at an ambient temperature of 46/30 Deg C [DB/WB] 2. T1 Condition is at an ambient temperature of 35/22 Deg C [DB/WB] 3. Liquid filter drier, sight glass and expansion valve shall be supplied loose along with the outdoor units 4. Please consult manufacturer for interconnecting pipe sizes 					

As a part of continuous improvement, Eco air reserves the right to make technical modifications without prior notice.



Engineering Specifications - R407C (continued)					
Model			EACU-0113C	EACU-0217C	EACU-0220C
T3 Condition ¹	Cooling Capacity	KW	40.4	55.6	63.6
		TR	11	16	18
	Power Input	KW	16.65	22.00	24.60
	EER		8.3	8.6	8.8
T1 Condition ²	Cooling Capacity	KW	44.4	61.0	69.8
		TR	13	17	20
	Power Input	KW	14.75	19.40	21.64
	EER		10.3	10.7	11.0
Supply Power Source		V/Ph/Hz	400+/-5% / 3 / 50		
Connections	Suction line size	Inch	1 3/8	1 3/8 x 2	
	Liquid line size	Inch	7/8	5/8 x 2	
Unit Dimensions	Length	mm	1,400	2,050	
	Width	mm	1,100	1,150	
	Height	mm	1,065	1,065	
Compressor @ T3 Condition	Type		Hermetically Sealed Scroll Compressor		
	No of Compressor	Nos	1	2	2
	Total Power Input	kW	14.8	19.5	22.1
	Max. Operating Current / Compressor	Amps.	35.0	19.6	22.3
Compressor @ T1 Condition	Total Power Input	kW	12.9	16.9	19.1
Condenser Coil	Type		Air Cooled, 3 or 4 Rows with 13 or 14 FPI Fin Spacing, Round Tube Plate Fins (RTPF), Copper Tubes and Aluminum Fins		
	Face Area	Sq.ft.	20	29.5	31.5
		Sq.mtr.	1.83	2.74	2.93
Condenser Fan & Motor	Type		Axial Fans with external Rotor Motor		
	No of fan	Nos	1	2	2
	Air volume	cfm	11,100	17,300	17,600
	Motor size	kW	1.85	2.5	2.5
Unit Weight		Kg	410	612	626
Ball Valve	Suction line	Inch	1 3/8	1 3/8 x 2	
	Liquid line	Inch	7/8	5/8 x 2	

1. T3 Condition is at an ambient temperature of 46/30 Deg C [DB/WB]
2. T1 Condition is at an ambient temperature of 35/22 Deg C [DB/WB]
3. Liquid filter drier, sight glass and expansion valve shall be supplied loose along with the outdoor units
4. Please consult manufacturer for interconnecting pipe sizes

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Engineering Specifications - R407C (continued)					
Model			EACU-0222C	EACU-0225C	EACU-0435C
T3 Condition ¹	Cooling Capacity	KW	68.8	80.8	111.2
		TR	20	23	31.6
	Power Input	KW	28.50	33.30	44.00
	EER		8.2	8.3	8.6
T1 Condition ²	Cooling Capacity	KW	76.0	88.8	122.0
		TR	22	25	35
	Power Input	KW	25.30	29.50	38.80
	EER		10.2	10.3	10.7
Supply Power Source		V/Ph/Hz	400+/-5% / 3 / 50		
Connections	Suction line size	Inch	1 3/8 x 2		1 3/8 x 4
	Liquid line size	Inch	7/8 x 2		5/8 x 4
Unit Dimensions	Length	mm	2,200		2,720
	Width	mm	1,150		2,200
	Height	mm	1,165		1,650
Compressor @ T3 Condition	Type		Hermetically Sealed Scroll Compressor		
	No of Compressor	Nos	2	2	4
	Total Power Input	kW	24.8	29.6	39.0
	Max. Operating Current / Compressor	Amps.	28.0	35.0	19.6
Compressor @ T1 Condition	Total Power Input	kW	21.6	25.8	33.8
Condenser Coil	Type		Air Cooled, 3 or 4 Rows with 13 or 14 FPI Fin Spacing, Round Tube Plate Fins (RTPF), Copper Tubes and Aluminum Fins		
	Face Area	Sq.ft.	37	38.2	58.5
		Sq.mtr.	3.39	3.55	5.44
Condenser Fan & Motor	Type		Axial Fans with external Rotor Motor		
	No of fan	Nos	2	2	4
	Air volume	cfm	21,300	22,350	34,300
	Motor size	kW	3.70	3.70	5.00
Unit Weight		Kg	662		1,364
Ball Valve	Suction line	Inch	1 3/8 x 2		1 3/8 x 4
	Liquid line	Inch	7/8 x 2		5/8 x 4

1. T3 Condition is at an ambient temperature of 46/30 Deg C [DB/WB]
2. T1 Condition is at an ambient temperature of 35/22 Deg C [DB/WB]
3. Liquid filter drier, sight glass and expansion valve shall be supplied loose along with the outdoor units
4. Please consult manufacturer for interconnecting pipe sizes

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Engineering Specifications - R407C (continued)					
Model			EACU-0440C	EACU-0443C	EACU-0450C
T3 Condition ¹	Cooling Capacity	KW	127.2	137.6	161.6
		TR	36	39	46
	Power Input	KW	49.20	57.00	66.60
	EER		8.8	8.2	8.3
T1 Condition ²	Cooling Capacity	KW	139.6	152.0	177.6
		TR	40	43	50
	Power Input	KW	43.28	50.60	59.00
	EER		11.0	10.2	10.3
Supply Power Source		V/Ph/Hz	400+/-5% / 3 / 50		
Connections	Suction line size	Inch	1 3/8 x 4	1 3/8 x 4	
	Liquid line size	Inch	5/8 x 4	7/8 x 4	
Unit Dimensions	Length	mm	2,720	2,920	
	Width	mm	2,200	2,200	
	Height	mm	1,650	1,825	
Compressor @ T3 Condition	Type		Hermetically Sealed Scroll Compressor		
	No of Compressor	Nos	4	4	4
	Total Power Input	kW	44.2	49.6	59.2
	Max. Operating Current / Compressor	Amps.	22.3	28.0	35.0
Compressor @ T1 Condition	Total Power Input	kW	38.3	43.2	51.6
Condenser Coil	Type		Air Cooled, 3 or 4 Rows with 13 or 14 FPI Fin Spacing, Round Tube Plate Fins (RTPF), Copper Tubes and Aluminum Fins		
	Face Area	Sq.ft.	60	75.5	76
		Sq.mtr.	5.58	7.02	7.07
Condenser Fan & Motor	Type		Axial Fans with external Rotor Motor		
	No of fan	Nos	4	4	4
	Air volume	cfm	34,990	44,025	44,495
	Motor size	kW	5.00	7.4	7.4
Unit Weight		Kg	1,396	1,422	1,484
Ball Valve	Suction line	Inch	1 3/8 x 4		
	Liquid line	Inch	5/8 x 4	7/8 x 4	

1. T3 Condition is at an ambient temperature of 46/30 Deg C [DB/WB]
2. T1 Condition is at an ambient temperature of 35/22 Deg C [DB/WB]
3. Liquid filter drier, sight glass and expansion valve shall be supplied loose along with the outdoor units
4. Please consult manufacturer for interconnecting pipe sizes

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Extended Performance Data - R407C

Model	SST(°F)	Condenser air entering temperature					
		35°C		46°C		50°C	
		Total Capacity	PI ¹	Total Capacity	PI ¹	Total Capacity	PI ¹
		kW	kW	kW	kW	kW	kW
EACU-0109C	40	27.90	8.76	23.70	10.99	22.00	11.95
	45	31.10	8.77	26.90	11.00	25.00	12.00
	50	34.50	8.80	29.60	11.01	27.70	12.00
EACU-0110C	40	32.00	9.75	26.90	12.30	24.80	13.45
	45	35.60	9.76	30.60	12.30	28.30	13.45
	50	39.50	9.78	33.80	12.30	31.40	13.40
EACU-0111C	40	34.70	11.49	28.70	14.30	26.50	15.55
	45	39.00	11.52	33.10	14.30	30.50	15.50
	50	43.70	11.54	36.90	14.25	34.30	15.50
EACU-0113C	40	40.80	13.35	34.20	16.65	31.50	18.05
	45	45.40	13.40	38.90	16.65	36.00	18.05
	50	50.40	13.45	43.00	16.65	40.00	18.05
EACU-0217C	40	55.80	17.52	47.40	21.98	44.00	23.90
	45	62.20	17.54	53.80	22.00	50.00	24.00
	50	69.00	17.60	59.20	22.02	55.40	24.00
EACU-0220C	40	64.00	19.50	53.80	24.60	49.60	26.90
	45	71.20	19.52	61.20	24.60	56.60	26.90
	50	79.00	19.56	67.60	24.60	62.80	26.80
EACU-0222C	40	69.40	22.98	57.40	28.60	53.00	31.10
	45	78.00	23.04	66.20	28.60	61.00	31.00
	50	87.40	23.08	73.80	28.50	68.60	31.00
EACU-0225C	40	81.60	26.70	68.40	33.30	63.00	36.10
	45	90.80	26.80	77.80	33.30	72.00	36.10
	50	100.80	26.90	86.00	33.30	80.00	36.10
EACU-0435C	40	111.60	35.04	94.80	43.96	88.00	47.80
	45	124.40	35.08	107.60	44.00	100.00	48.00
	50	138.00	35.20	118.40	44.04	110.80	48.00
EACU-0440C	40	128.00	39.00	107.60	49.20	99.20	53.80
	45	142.40	39.04	122.40	49.20	113.20	53.80
	50	158.00	39.12	135.20	49.20	125.60	53.60
EACU-0443C	40	138.80	45.96	114.80	57.20	106.00	62.20
	45	156.00	46.08	132.40	57.20	122.00	62.00
	50	174.80	46.16	147.60	57.00	137.20	62.00
EACU-0450C	40	163.20	53.40	136.80	66.60	126.00	72.20
	45	181.60	53.60	155.60	66.60	144.00	72.20
	50	201.60	53.80	172.00	66.60	160.00	72.20

1. Power input mentioned in this page should not be used for cable or fuse selection. Please consult the manufacturer for the same.

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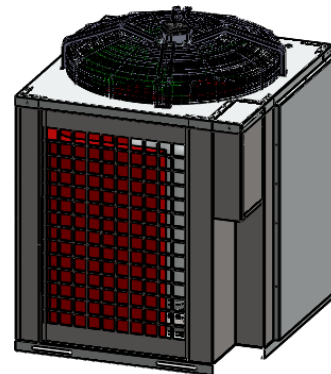
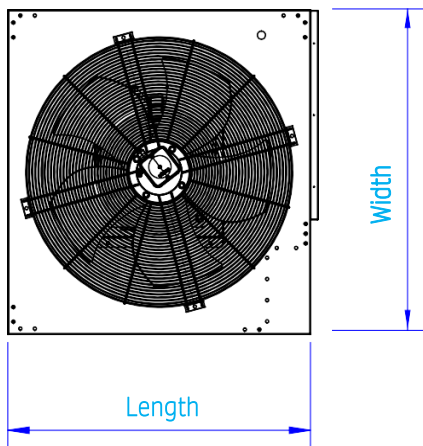
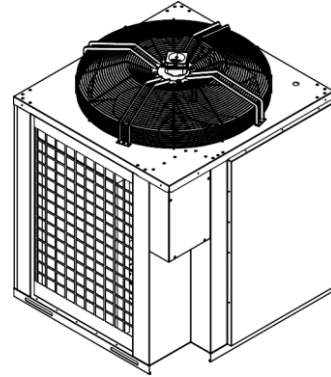
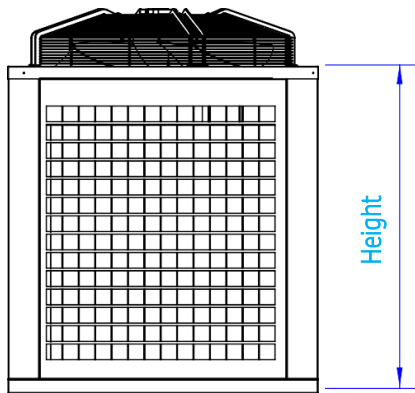
Extended Performance Data - R410A

Model	SST(°F)	Condenser air entering temperature					
		35°C		46°C		50°C	
		Total Capacity	PI ¹	Total Capacity	PI ¹	Total Capacity	PI ¹
		kW	kW	kW	kW	kW	kW
EACU-0109A	40	29.11	9.37	24.36	11.43	22.52	12.34
	45	32.04	9.42	27.00	11.50	24.90	12.36
	50	35.30	9.46	29.71	11.50	27.56	12.39
EACU-0110A	40	33.65	10.33	28.35	12.64	26.30	13.65
	45	36.95	10.37	31.24	12.68	29.02	13.68
	50	40.62	10.40	34.46	12.71	32.07	13.72
EACU-0111A	40	37.83	11.61	31.49	14.45	28.99	15.71
	45	41.59	11.63	34.74	14.44	32.04	15.69
	50	45.78	11.66	38.37	14.43	35.46	15.67
EACU-0113A	40	43.18	13.11	36.12	16.32	33.33	17.73
	45	47.55	13.11	39.93	16.29	36.92	17.70
	50	40.94	17.66	44.17	16.26	40.94	17.66
EACU-0217A	40	58.22	18.75	48.72	22.86	45.04	24.68
	45	64.08	18.83	54.00	23.00	49.80	24.72
	50	70.60	18.91	59.42	23.00	55.12	24.78
EACU-0220A	40	67.30	20.67	56.70	25.28	52.60	27.30
	45	73.90	20.73	62.48	25.36	58.04	27.36
	50	81.24	20.80	68.92	25.42	64.14	27.44
EACU-0222A	40	75.66	23.22	62.98	28.90	57.98	31.42
	45	83.18	23.26	69.48	28.88	64.08	31.38
	50	91.56	23.32	76.74	28.86	70.92	31.34
EACU-0225A	40	86.36	26.22	72.24	32.64	66.66	35.46
	45	95.10	26.22	79.86	32.58	73.84	35.40
	50	81.88	35.32	88.34	32.52	81.88	35.32
EACU-0435A	40	116.44	37.50	97.44	45.72	90.08	49.36
	45	128.16	37.66	108.00	46.00	99.60	49.44
	50	141.20	37.83	118.84	46.00	110.24	49.56
EACU-0440A	40	134.60	41.34	113.40	50.56	105.20	54.60
	45	147.80	41.47	124.96	50.72	116.08	54.72
	50	162.48	41.60	137.84	50.84	128.28	54.88
EACU-0443A	40	151.32	46.44	125.96	57.80	115.96	62.84
	45	166.36	46.52	138.96	57.76	128.16	62.76
	50	183.12	46.64	153.48	57.72	141.84	62.68
EACU-0450A	40	172.72	52.44	144.48	65.28	133.32	70.92
	45	190.20	52.44	159.72	65.16	147.68	70.80
	50	163.76	70.64	176.68	65.04	163.76	70.64

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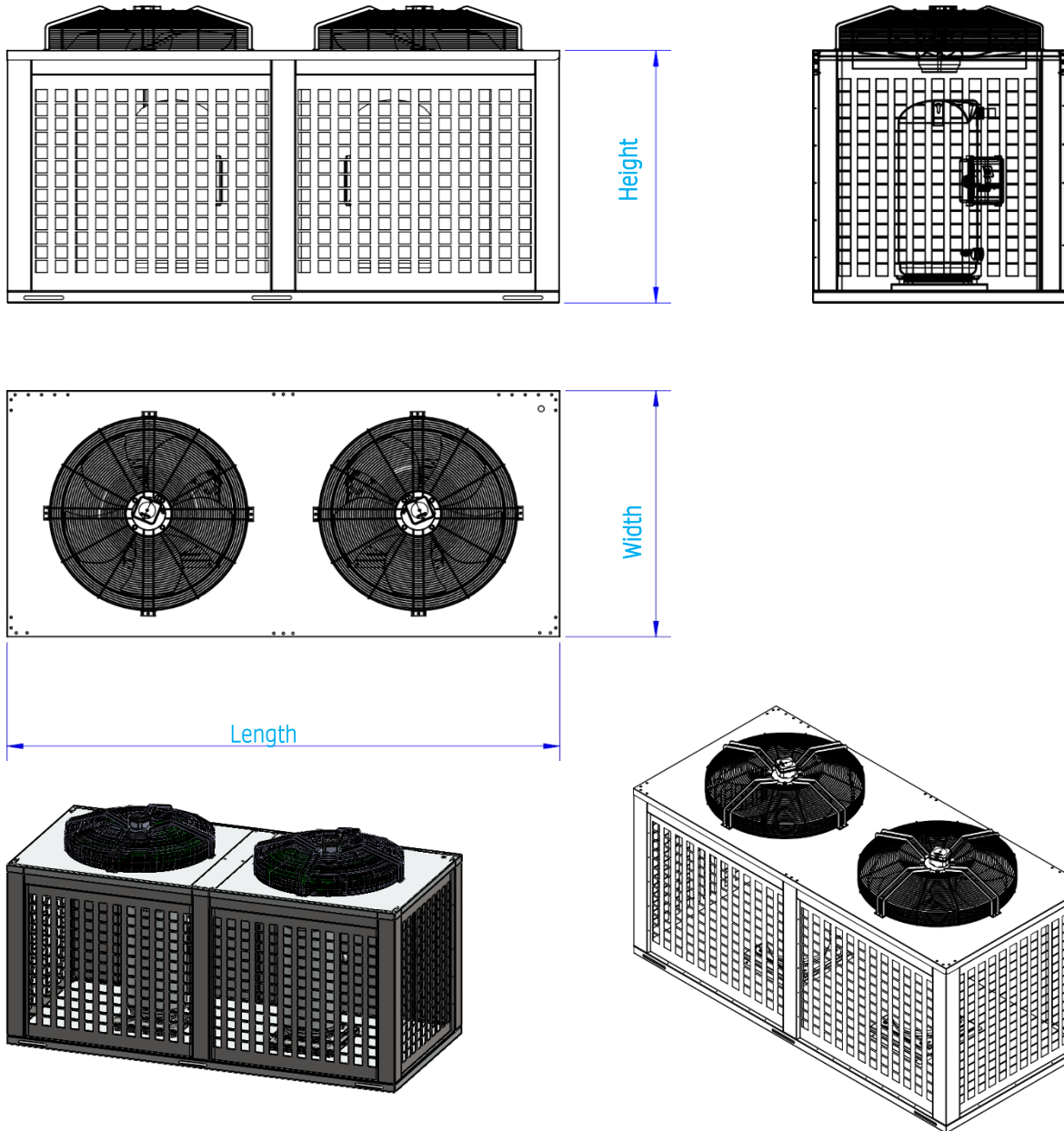
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Single Compressor Units



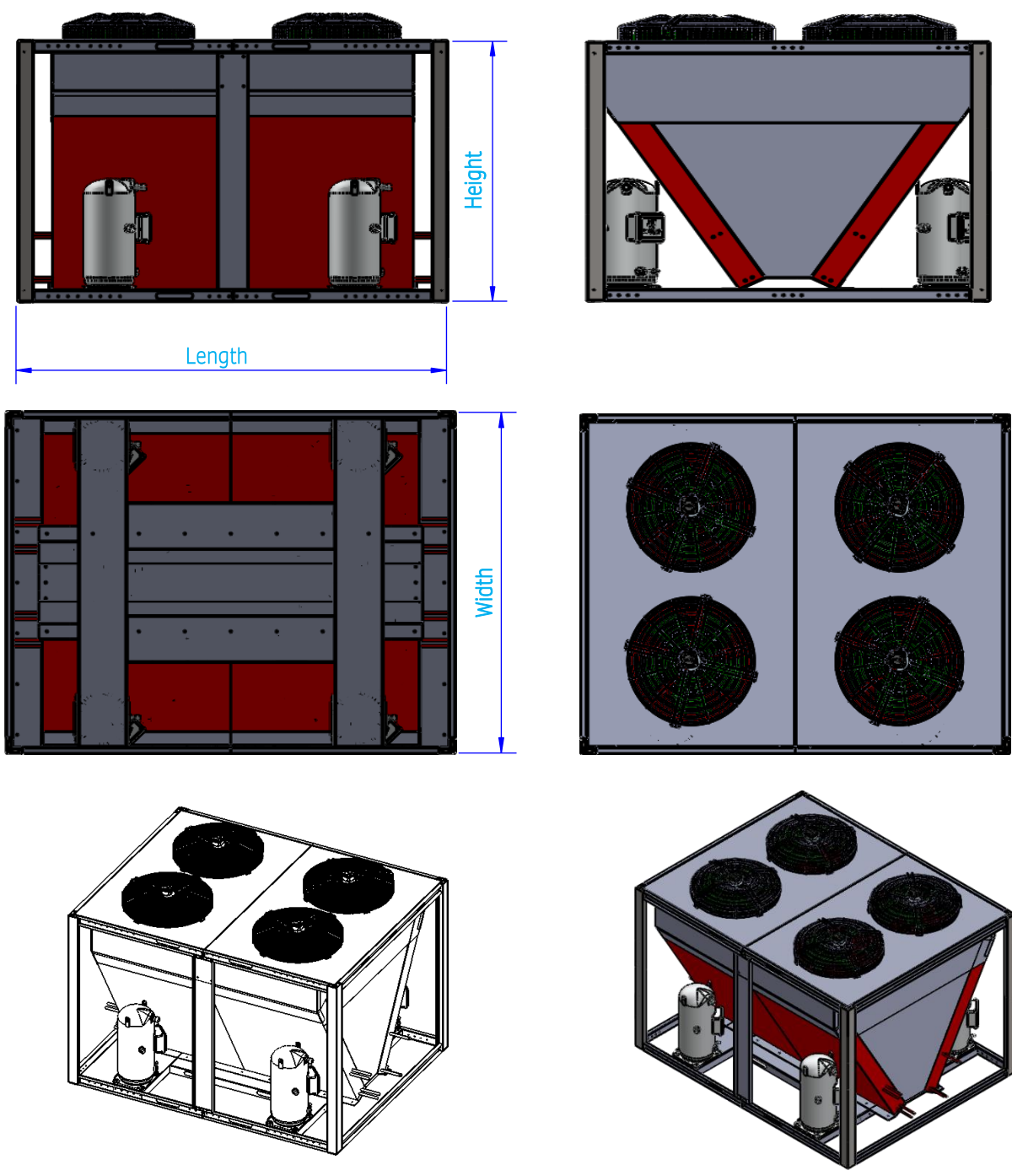
Equipment Data				
Models	Length (mm)	Width (mm)	Height (mm)	Weight (Kg)
EACU-0109	1400	1100	965	371
EACU-0110	1400	1100	965	371
EACU-0111	1400	1100	1065	394
EACU-0113	1400	1100	1065	410

Dual Compressor Units



Equipment Data				
Models	Length (mm)	Width (mm)	Height (mm)	Weight (Kg)
EACU-0217	2050	1150	1065	612
EACU-0220	2050	1150	1065	626
EACU-0222	2200	1150	1165	662
EACU-0225	2200	1150	1165	691

Triple Compressor Units



Equipment Data				
Models	Length (mm)	Width (mm)	Height (mm)	Weight (Kg)
EACU-0435	2720	2200	1650	1364
EACU-0440	2720	2200	1650	1396
EACU-0443	2920	2200	1825	1422
EACU-0450	2920	2200	1825	1484