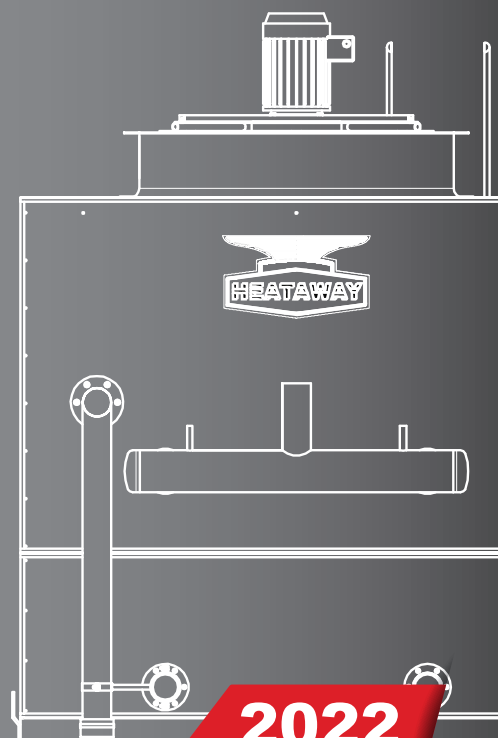
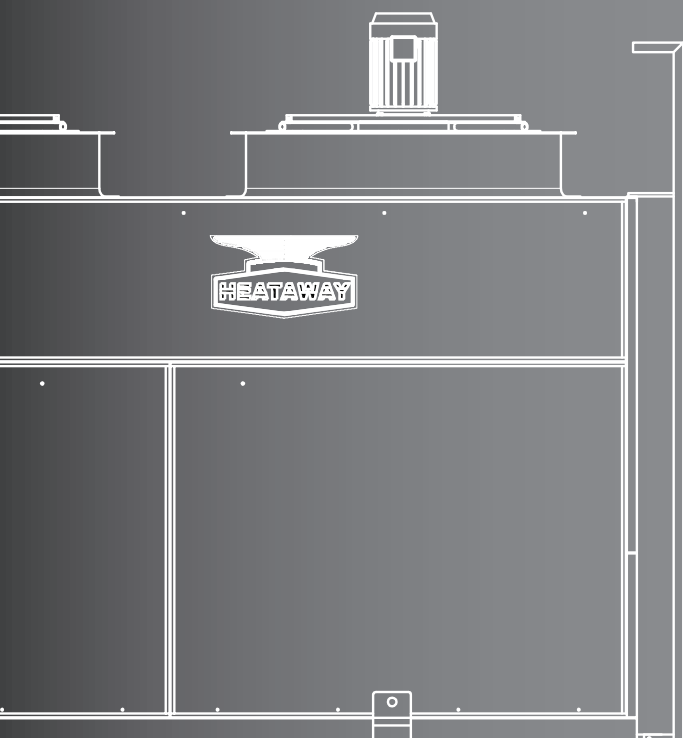
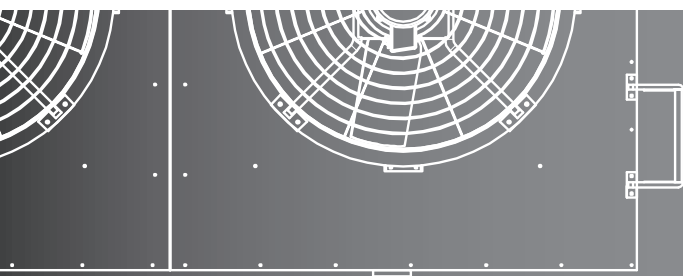




ENGINEERING DATA

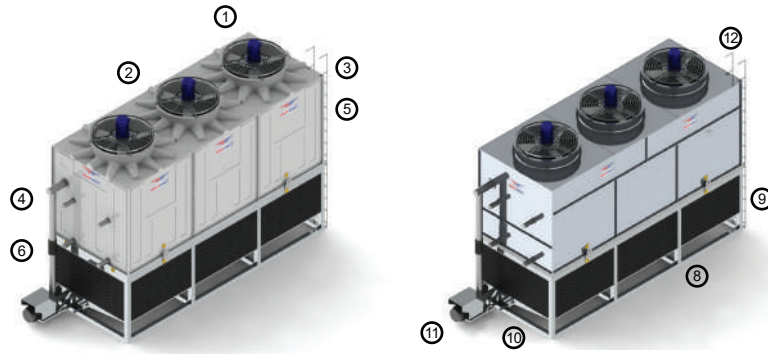
For stainless steel
evaporative condenser



2022

- *Specification*
- *Optional feature*
- *Selection method*
- *Technical data*

SPECIFICATION



- | | | |
|---|---|---|
| <p>1. Fan set
 Fan motor : Induction motor
 with cast iron casing and epoxy coating
 Fan blade : Glass reinforced polyamide (PAG)
 Operating of temperature
 range -40°C to 120°C
 Hub part : Pressure die cast silumin alloy
 with anti-corrosion coating
 Screener : Stainless steel 304</p> <p>2. Fan cowl
 ECS series : Stainless steel 304
 ECF series : Fiberglass</p> <p>3. Drift eliminator
 PVC with UV protection
 Drift loss : 0.001%</p> | <p>4. Recirculated water pipe
 Stainless steel 304</p> <p>5. Spray nozzle
 PVC with multi layer design
 by own patented</p> <p>6. Condenser coil
 Stainless steel 304</p> <p>7. Casing
 ECS series : Stainless steel 304
 ECF series : Fiberglass</p> <p>8. Structure
 Stainless steel 304</p> | <p>9. Louver
 PVC with UV protection
 Daylight protect 70 : 1</p> <p>10. Basin
 Stainless steel 304</p> <p>11. Recirculated water pump
 Water pump : Close-coupled centrifugal
 pump with cast iron
 casing
 Base support : Stainless steel 304
 Cover : Stainless steel 304
 Strainer : Stainless steel 304</p> |
|---|---|---|

STANDARD FEATURE

OPTIONAL FEATURE



ASME B31.5

STANDARD CONDENSING COIL

Made of 304 stainless steel and complied with ASME B31.5



STANDARD FAN MOTOR

Made of cast iron casing with IE2 efficiency standard



HIGH EFFICIENCY FAN MOTOR

Made of cast iron casing with IE3 efficiency standard



STANDARD WATER PUMP

Made of cast iron casing with IE2 efficiency standard



STANDARD INLET LOUVER

Made of PVC with UV protection

ADDITIONAL FEATURE



CARBON STEEL

CARBON STEEL HOT GAS HEADER

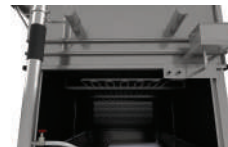
Made of A53 carbon steel



STAINLESS STEEL

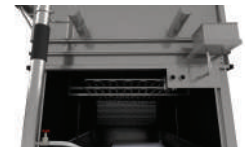
STAINLESS STEEL HOT GAS HEADER

Made of 304 stainless steel



SINGLE LAYER WATER COOLING COIL

Made of 304 stainless steel



DOUBLE LAYER WATER COOLING COIL

Made of 304 stainless steel



CARBON STEEL

CARBON STEEL HOT GAS HEADER & PACKAGE VALVE

Made of A53 carbon steel with built-in package valves



STAINLESS STEEL

STAINLESS STEEL HOT GAS HEADER & PACKAGE VALVE

Made of 304 stainless steel with built-in package valves



OSHA 1910

LADDER, CAGE AND HANDRAIL

Made of 304 stainless steel and complied with OSHA 1910



OSHA 1910

PLATFORM

Made of 304 stainless steel and complied with OSHA 1910

SELECTION PROCEDURE

Selection Example

Refrigerant	: R-717
Total Heat of Rejection	: 1,150 kW
Condensing Temperature	: 38°C
Wet Bulb Temperature	: 28°C

Selection

1. Determine correction factor for R-717 at 38°C condensing temperature and 28°C wet bulb temperature from Table 1 : R-717 (Ammonia) correction factor which is 1.31.
2. Multiply 1,150 kW x 1.31 = 1,495 kW.
3. From Table 2 : ECS series nominal capacity and Table 3 : ECF series nominal capacity, select a unit with nominal heat rejection rating equal to or greater than 1,495 kW. Select a ECS-1550 R or a ECF-1550 R with a nominal capacity of 1,550 kW.

CORRECTION FACTOR

Table 1 : R-717 (Ammonia) correction factor

Condensing Temperature (°C)	Entering Air Wet Bulb Temperature (°C)										
	20	21	22	23	24	25	26	27	28	29	30
33	1.19	1.27	1.37	1.50	1.63	1.81	2.03	2.37	2.70	-	-
34	1.12	1.19	1.27	1.36	1.48	1.61	1.80	2.06	2.35	-	-
35	1.03	1.08	1.15	1.23	1.30	1.39	1.53	1.69	1.90	2.15	2.47
36	0.96	1.01	1.07	1.13	1.20	1.28	1.39	1.53	1.70	1.91	2.17
37	0.88	0.92	0.97	1.03	1.08	1.16	1.23	1.36	1.48	1.65	1.85
38	0.83	0.86	0.90	0.94	1.00	1.05	1.12	1.21	1.31	1.44	1.59
39	0.78	0.81	0.84	0.88	0.92	0.98	1.03	1.12	1.20	1.31	1.41
40	0.74	0.76	0.79	0.83	0.87	0.91	0.96	1.02	1.09	1.18	1.29

NOMINAL CAPACITY

Table 2 : ECS series nominal capacity (Stainless steel casing)

Model	Nominal capacity (kW)	Shipment container
ECS-0430 R	430	1x20'DC
ECS-0550 R	550	1x40'HC
ECS-0700 R	700	1x40'HC
ECS-0800 R	800	1x40'HC
ECS-1000 R	1,000	1x40'HC
ECS-1250 R	1,250	2x40'HC
ECS-1350 R	1,350	1x40'HC
ECS-1550 R	1,550	1x40'HC
ECS-1650 R	1,650	1x40'HC
ECS-1800 R	1,800	2x40'HC
ECS-2000 R	2,000	2x40'HC
ECS-2350 R	2,350	2x40'HC

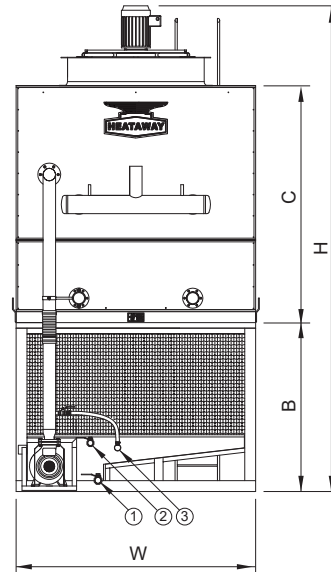
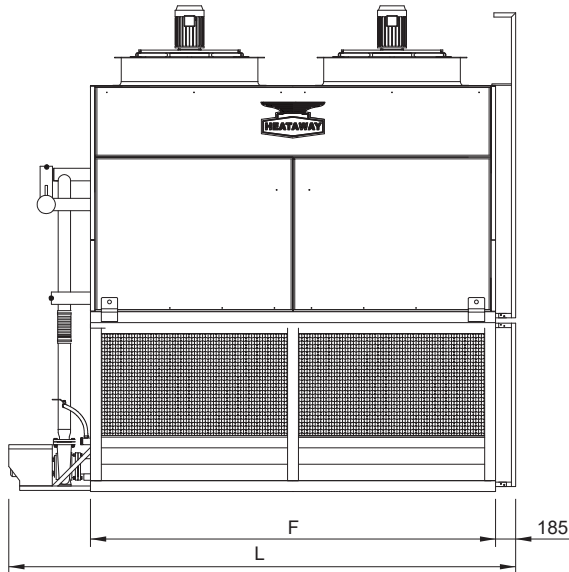
Table 3 : ECF series nominal capacity (Fiberglass casing)

Model	Nominal capacity (kW)	Shipment container
ECF-0430 R	430	1x20'DC
ECF-0550 R	550	1x40'HC
ECF-0700 R	700	1x40'HC
ECF-0800 R	800	1x40'HC
ECF-1000 R	1,000	1x40'HC
ECF-1250 R	1,250	2x40'HC
ECF-1350 R	1,350	1x40'HC
ECF-1550 R	1,550	1x40'HC
ECF-1650 R	1,650	1x40'HC
ECF-1800 R	1,800	2x40'HC
ECF-2000 R	2,000	2x40'HC
ECF-2350 R	2,350	2x40'HC

Remark : Nominal capacity is based on operating condition 38°C condensing temperature and 24°C wet bulb temperature. Number of shipment container is based on the unit only. Excluded any accessories such as platform, handrail and etc. Please contact sales representative for more information.

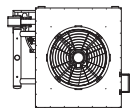
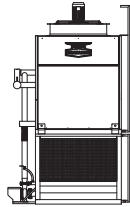
TECHNICAL DATA

ECS SERIES

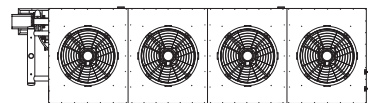
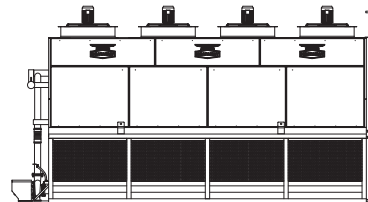
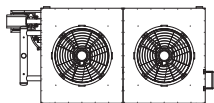
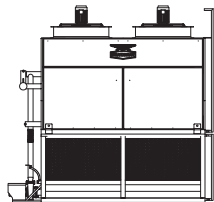
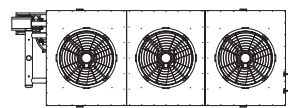
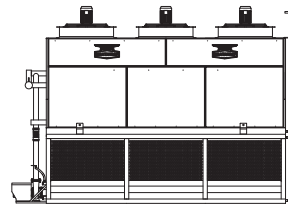


Piping connection
 1. Drain valve $\varnothing 2"$
 2. Make-up valve $\varnothing 2"$
 3. Overflow connection $\varnothing 2"$

● Type A : 1 fan



● Type C : 3 fans














● Type B : 2 fans

● Type D : 4 fans

ECS SERIES - STAINLESS STEEL CASING

Table 4 : ECS series technical data (Stainless steel casing)

Model	Nominal capacity (kW)	Shipment container	Overall dimension (mm)			Section dimension (mm)			Weight (kg)					Fan motor		Water pump	
			W	L	H	F	B	C	Heaviest	Shipping	Operating	Water	R-717	No.	kW	No.	kW
 ECS-0430 R	430	1x20'DC	2,200	2,520	4,460	1,900	1,550	2,177	1,550	1,950	2,623	620	53	1	5.5	1	1.1
 ECS-0550 R	550	1x40'HC	2,200	3,580	4,220	2,930	1,550	1,937	1,750	2,320	3,335	950	65	1	5.5	1	1.5
 ECS-0700 R	700	1x40'HC	2,200	3,580	4,460	2,930	1,550	2,177	2,080	2,640	3,678	950	88	1	5.5	1	1.5
 ECS-0800 R	800	1x40'HC	2,200	4,430	4,220	3,720	1,550	1,937	2,270	2,910	4,220	1,220	90	2	5.5	1	2.2
 ECS-1000 R	1,000	1x40'HC	2,200	4,430	4,460	3,720	1,550	2,177	2,700	3,350	4,686	1,220	116	2	5.5	1	2.2
 ECS-1250 R	1,250	2x40'HC	2,200	6,260	4,320	5,540	1,600	1,987	3,260	4,140	6,120	1,840	140	3	5.5	1	4.0
 ECS-1350 R	1,350	1x40'HC	2,200	5,460	4,560	4,740	1,600	2,227	3,525	4,330	6,056	1,570	156	3	5.5	1	4.0
 ECS-1550 R	1,550	1x40'HC	2,200	5,460	4,800	4,740	1,600	2,467	4,030	4,835	6,600	1,570	195	3	5.5	1	4.0
 ECS-1650 R	1,650	1x40'HC	2,200	5,860	4,800	5,140	1,600	2,467	4,290	5,135	7,000	1,650	215	3	5.5	1	4.0
 ECS-1800 R	1,800	2x40'HC	2,200	7,380	4,560	6,560	1,600	2,227	4,430	5,525	7,920	2,180	215	3	5.5	1	5.5
 ECS-2000 R	2,000	2x40'HC	2,200	8,180	4,560	7,360	1,600	2,227	5,070	6,230	8,930	2,460	240	4	5.5	1	5.5

Remark : 1) Do not use for construction. Specifications and dimension are subject to change without notice.

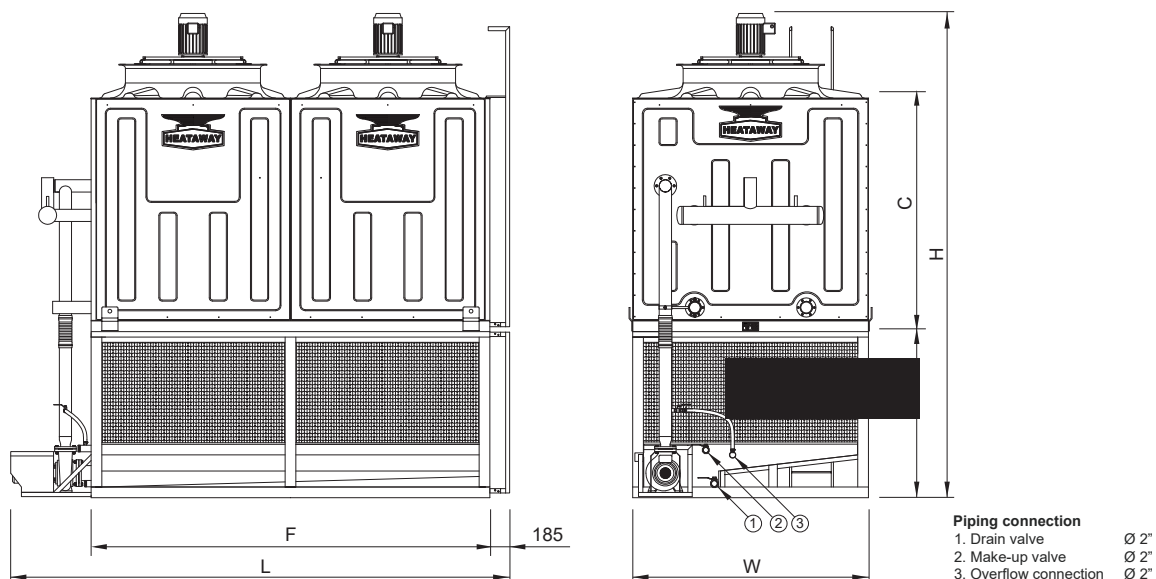
2) Nominal capacity is based on operating condition 38°C condensing temperature and 24°C wet bulb temperature.

3) Heaviest weight is refer to coil section weight.



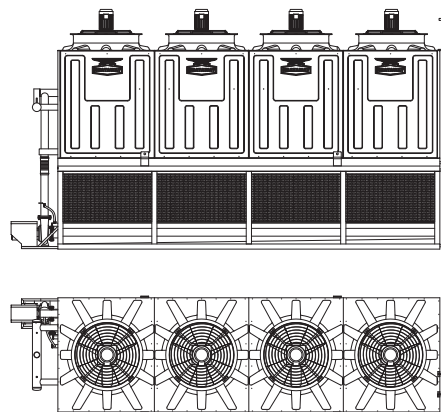
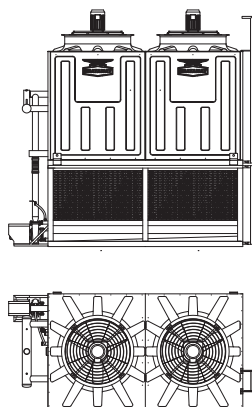
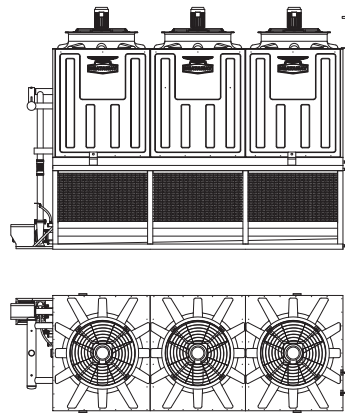
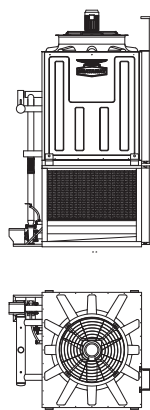
TECHNICAL DATA

ECF SERIES



● Type A : 1 fan

● Type C : 3 fans



● Type B : 2 fans

● Type D : 4 fans

ECF SERIES - FIBERGLASS CASING

Table 5 : ECF series technical data (Fiberglass casing)

Model	Nominal capacity (kW)	Shipment container	Overall dimension (mm)			Section dimension (mm)			Weight (kg)					Fan motor		Water pump	
			W	L	H	F	B	C	Heaviest	Shipping	Operating	Water	R-717	No.	kW	No.	kW
ECF-0430 R	430	1x20'DC	2,200	2,520	4,520	1,900	1,550	2,175	1,415	1,810	2,483	620	53	1	5.5	1	1.1
ECF-0550 R	550	1x40'HC	2,200	3,580	4,520	2,930	1,550	2,175	1,650	2,200	3,215	950	65	1	5.5	1	1.5
ECF-0700 R	700	1x40'HC	2,200	3,580	4,520	2,930	1,550	2,175	1,950	2,500	3,538	950	88	1	5.5	1	1.5
ECF-0800 R	800	1x40'HC	2,200	4,430	4,520	3,720	1,550	2,175	2,130	2,770	4,080	1,220	90	2	5.5	1	2.2
ECF-1000 R	1,000	1x40'HC	2,200	4,430	4,520	3,720	1,550	2,175	2,530	3,180	4,516	1,220	116	2	5.5	1	2.2
ECF-1250 R	1,250	2x40'HC	2,200	6,260	4,620	5,540	1,600	2,225	3,080	3,960	5,940	1,840	140	3	5.5	1	4.0
ECF-1350 R	1,350	1x40'HC	2,200	5,460	4,860	4,740	1,600	2,465	3,300	4,100	5,826	1,570	156	3	5.5	1	4.0
ECF-1550 R	1,550	1x40'HC	2,200	5,460	4,860	4,740	1,600	2,465	3,800	4,325	6,090	1,570	195	3	5.5	1	4.0
ECF-1650 R	1,650	1x40'HC	2,200	5,860	4,860	5,140	1,600	2,465	4,025	4,870	6,735	1,650	215	3	5.5	1	4.0
ECF-1800 R	1,800	2x40'HC	2,200	7,380	4,620	6,560	1,600	2,225	4,220	5,300	7,695	2,180	215	3	5.5	1	5.5
ECF-2000 R	2,000	2x40'HC	2,200	8,180	4,620	7,360	1,600	2,225	4,820	5,980	8,680	2,460	240	4	5.5	1	5.5
ECF-2350 R	2,350	2x40'HC	2,200	8,180	4,870	7,360	1,600	2,475	5,680	6,840	9,602	2,460	302	4	5.5	1	5.5

Remark : 1) Do not use for construction. Specifications and dimension are subject to change without notice.

2) Nominal capacity is based on operating condition 38°C condensing temperature and 24°C wet bulb temperature.

3) Heaviest weight is refer to coil section weight.



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