

Industrial Water Minichiller TCW



CONNECT AND PROTECT

INDUSTRIAL WATER CHILLER – TCW



Figure 1. TCW08 - TCW19



Figure 2. TCW31 - TCW41

Industry Standards

- UL
- CE

Application

- Machine Tooling
- Laser Cutting
- Plastics Manufacturing
- Battery Energy Storage
- Paired with Air to Water Heat Exchangers for Enclosures
- And much more

Finish

- RAL 7035 light-gray, textured finish powder-coat paint
- Other colors and textures available

Options

- Mechanical bypass valve protecting the pump
- Electrical level indicator
- Operation at low ambient temperatures
- Polyurethane air filter

Features

- Compact footprint to minimize real estate and maximize capacity
- Fluid type: water, water/glycol mixture
- R134A earth-friendly refrigerant
- Ambient temperature operating limits: 46°F (8°C) to 77°F (25°C)
- Fluid temperature precision of ± 2 K
- Hermetic reciprocating compressor, cooled by the refrigerant, complete with thermal cut-out
- Refrigeration circuit complete with charging port, drier filter, expansion valve, high- and low-pressure safety pressure switch
- Evaporator is made of brazed stainless-steel plate model
- Finned high-efficiency copper tube condensing coil, complete with safety grille
- Axial fan complete with electrical protection and safety grille
- Castors
- Differential fluid temperature management (two sensors)
- Hot gas bypass for ± 1 K temperature precision
- High pressure pump

PERFORMANCE DATA TCW08/12/19

Metric

Model		TCW08		TCW12		TCW19	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
Rated Cooling Capacity*	W	900	1100	1600	1900	2200	2550
Ambient temperature operating limits	°C	+15 -+45					
Settable fluid temperature range	°C	+8 -+25					
Fluid type		Water					
Temperature precision	K	+/-2					
Refrigerant gas	HFC	R134a					
Power supply							
Supply voltage	V ph Hz	230 V (+/-10%) 1 ph 50/60 Hz					
Secondary supply voltage	V	230					
Digital thermostat		TX110					
Compressor							
Compressor type		Reciprocating					
Quantity - Number of circuits	no.	1 - 1					
Axial Fan							
Fan type		Axial					
Quantity	no.	1	1	1	1	1	1
Air flow rate	m³/h	1000	1000	1000	1000	1000	1000
Max. power draw	W	150	190	150	190	150	190
Standard Pump							
Pump type		Peripheral					
Nominal/max fluid flow rate	l/min	3.0 - 20.0		5.0 - 20.0		6.5 - 20.0	
Nominal available head	bar	5.4	7.6	4.6	6.7	4	6
High-Pressure Pump (optional)							
Pump type		Peripheral					
Quantity	no.	1	1	1	1	1	1
Nominal available head	bar	6.5	8.4	6	7.9	5.8	7.6
Storage tank capacity	l	10					
IN/OUT liquid connections	mm	1/2"					
Net weight	kg	52	54	55	55	55	55
Width - Depth - Height	mm	725 - 454 - 367					
Sound pressure level**	dB(A)	56	56	56	56	56	56

* Data relating to operation under the following conditions: intake/outlet temperature 20/15°C, water without glycol, ambient temperature 32°C. Cooling power refers to the evaporator unit.

** Sound pressure level at 50Hz, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres from the ground, per ISO 3746.

Correction factors for calculating the cooling power										
Water outlet temperature	Fw	°C				8	10	15	20	25
		factor				0.86	0.92	1	1.05	1.12
Ambient temperature	Fa	°C				15	20	25	32	35 40 45
		factor				1.16	1.1	1.05	1	0.97 0.91 0.84
Percentage glycol by weight	Fg	%	0	10	15	20	25	30	35	40
		factor	1	0.99	0.98	0.97	0.96	0.94	0.92	0.89
Cooling power = Nominal cooling power x Fw x Fa x Fg										

PERFORMANCE DATA TCW08/12/19

Imperial

Model		TCW08		TCW12		TCW19	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
Rated Cooling Capacity*	BTU/hr	3070	3750	5460	6480	7500	8700
Ambient temperature operating limits	°F	+59 -+113					
Settable fluid temperature range	°F	+46 -+77					
Fluid type		Water					
Temperature precision	°F	+/-3.6					
Refrigerant gas	HFC	R134a					
Power supply							
Supply voltage	V ph Hz	230 V (+/-10%) 1 ph 50/60 Hz					
Secondary supply voltage	V	230					
Digital thermostat		TX110					
Compressor							
Compressor type		Reciprocating					
Quantity - Number of circuits	no.	1 - 1					
Axial Fan							
Fan type		Axial					
Quantity	no.	1	1	1	1	1	1
Air flow rate	cfm	235	235	235	235	235	235
Max. power draw	W	150	190	150	190	150	190
Standard Pump							
Pump type		Peripheral					
Nominal/max fluid flow rate	gpm	0.8 - 5.3		1.3 - 5.3		1.7 - 5.3	
Nominal available head	psi	78	110	66	97	58	87
High-Pressure Pump (optional)							
Pump type		Peripheral					
Quantity	no.	1	1	1	1	1	1
Nominal available head	psi	94	122	87	114	84	110
Storage tank capacity	gal	2,64					
IN/OUT liquid connections	in	1/2					
Net weight	lbs	114	119	121			
Width - Depth - Height	in	28.5 - 17,9 - 14,4					
Sound pressure level**	dB(A)	56	56	56			

* Data relating to operation under the following conditions: intake/outlet temperature 68/59°F, water without glycol, ambient temperature 90°F. Cooling power refers to the evaporator unit.

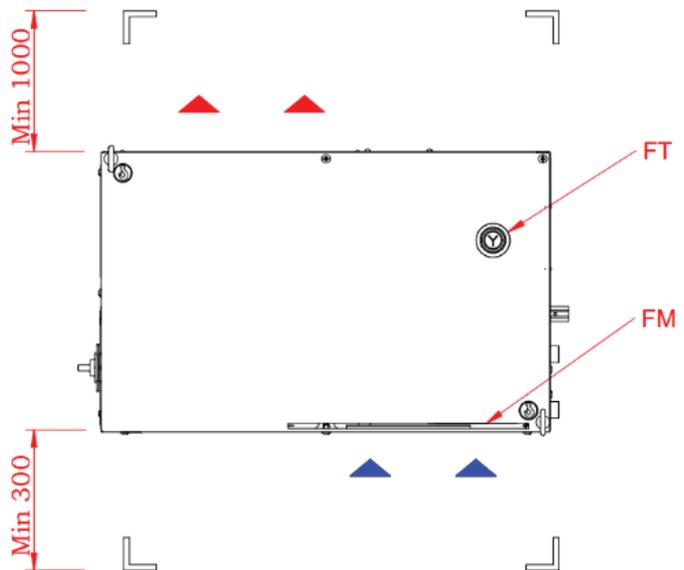
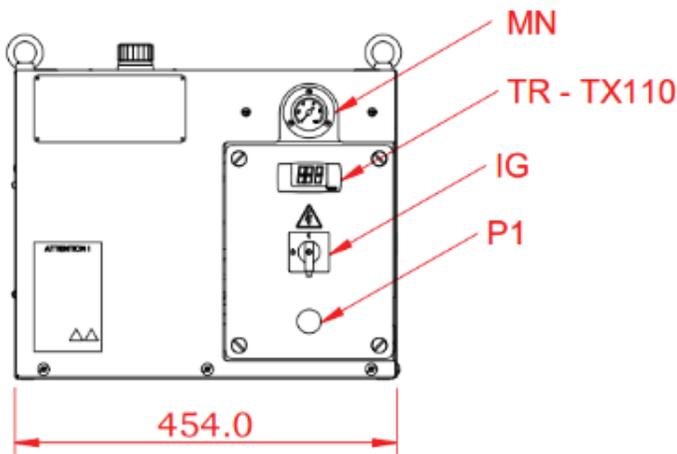
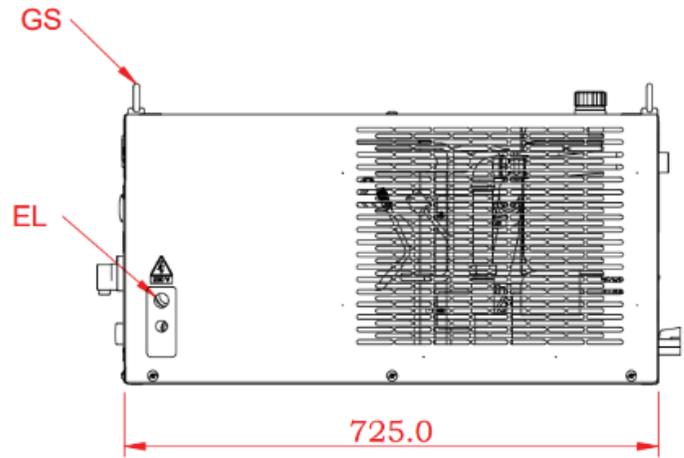
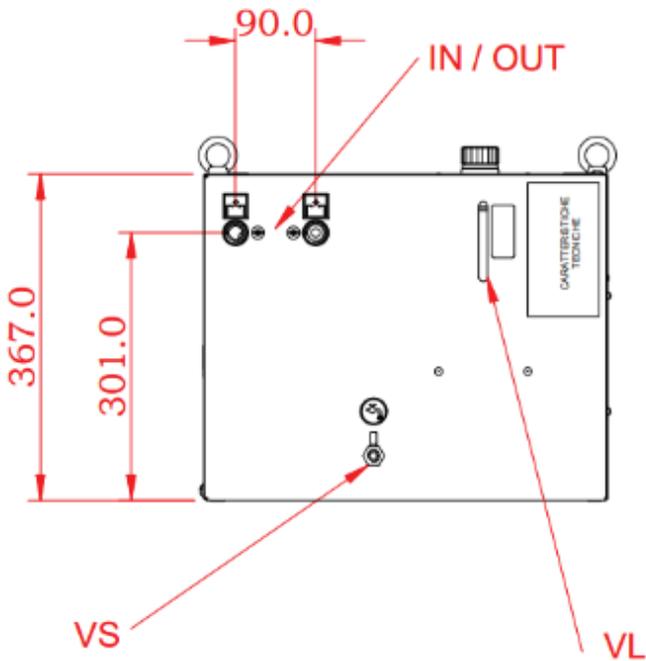
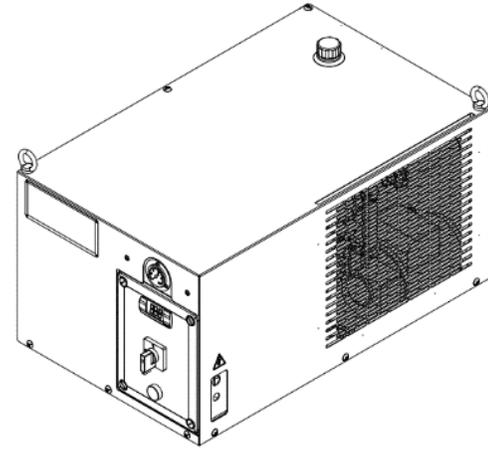
** Sound pressure level at 50Hz, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres from the ground, per ISO 3746.

Correction factors for calculating the cooling power										
Water outlet temperature	Fw	°F				46	50	59	68	77
		factor				0.86	0.92	1	1.05	1.12
Ambient temperature	Fa	°F				59	68	77	90	95 104 113
		factor				1.16	1.1	1.05	1	0.97 0.91 0.84
Percentage glycol by weight	Fg	%	0	10	15	20	25	30	35	40
		factor	1	0.99	0.98	0.97	0.96	0.94	0.92	0.89
Cooling power = Nominal cooling power x Fw x Fa x Fg										

DRAWINGS TCW08/12/19

Notes

1. Units: mm
2. VS – Discharge fluid tank
3. FM – Air filter
4. FT – Filling up tank
5. GS – Lifting eye bolts
6. IN/OUT – Inlet and Outlet of water
7. MN – Gauge
8. TR – Thermostat
9. VL – Visual tank level
10. IG – Main switch
11. P1 – Voltage ON
12. EL – Electrical connections
13. □ – Installation area
14. ▽ – Air flow through condenser



PERFORMANCE DATA TCW31/41

Metric

Model		TCW31		TCW41	
		50Hz	60Hz	50Hz	60Hz
Rated Cooling Capacity*	W	3000	3450	3900	4450
Ambient temperature operating limits	°C	+15 -+45			
Settable fluid temperature range	°C	+8 -+25			
Fluid type		Water			
Temperature precision	K	+/-2			
Refrigerant gas	HFC	R134a			
Power supply					
Supply voltage	V ph Hz	230 V (+/-10%) 1 ph 50/60 Hz			
Secondary supply voltage	V	230			
Digital thermostat		TX110			
Compressor					
Compressor type		Reciprocating			
Quantity - Number of circuits	no.	1 - 1			
Max. power draw	kW	1.15	1.5	1.6	1.92
Max. current draw	A	6.1	8.1	7.2	8.4
Axial Fan					
Fan type		Axial			
Quantity	no.	1		1	
Air flow rate	m³/h	2300	2650	2300	2650
Max. power draw	W	180	250	180	250
Max. current draw	A	0.81	1.1	0.81	1.1
Standard Pump					
Pump type		Peripheral			
Quantity	no.	1		1	
Nominal/max fluid flow rate	l/min	6.5 - 20		11 - 20	
Nominal available head	bar	4	6	2.8	4.0
Available power draw	kW	0.75	0.75	0.75	0.75
Max. current draw	A	2.8	3.7	2.8	3.7
High-Pressure Pump (optional)					
Pump type		Peripheral			
Quantity	no.	1		1	
Nominal available head	bar	5.8	7.6	4.9	6.6
Max. power draw	kW	1.29	1.29	1.29	1.29
Max. current draw	A	5	6	5	6
Storage tank capacity	l	10			
IN/OUT liquid connections	mm	1/2"			
Net weight (approximate)***	kg	74		75	
Width - Depth - Height	mm	800 - 450 - 495			
Sound pressure level**	dB(A)	57	60	57	60
IP rating	IP	44			

* Data relating to operation under the following conditions: intake/outlet temperature 20/15°C, water without glycol, ambient temperature 32°C. Cooling power refers to the evaporator unit.

** Sound pressure level at 50Hz, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres | from the ground, per ISO 3746.

*** Weight includes pallets and packaging (where provided for), with refrigerant charge, storage tank empty, axial fans. The electrical data refer to cos φ = 0.8.

Correction factors for calculating the cooling power										
Water outlet temperature	Fw	°C				8	10	15	20	25
		factor				0.86	0.92	1	1.05	1.12
Ambient temperature	Fa	°C				15	20	25	32	35 40 45
		factor				1.16	1.1	1.05	1	0.97 0.91 0.84
Percentage glycol by weight	Fg	%	0	10	15	20	25	30	35	40
		factor	1	0.99	0.98	0.97	0.96	0.94	0.92	0.89
Cooling power = Nominal cooling power x Fw x Fa x Fg										

PERFORMANCE DATA TCW31/41

Imperial

Model		TCW31		TCW41	
		50Hz	60Hz	50Hz	60Hz
Rated Cooling Capacity*	BTU/hr	10230	11770	13310	15180
Ambient temperature operating limits	°F	+59 -+113			
Settable fluid temperature range	°F	+46 -+77			
Fluid type		Water			
Temperature precision	°F	+/-3.6			
Refrigerant gas	HFC	R134a			
Power supply					
Supply voltage	V ph Hz	230 V (+/-10%) 1 ph 50/60 Hz			
Secondary supply voltage	V	230			
Digital thermostat		TX110			
Compressor					
Compressor type		Reciprocating			
Quantity - Number of circuits	no.	1 - 1			
Max. power draw	kW	1.15	1.5	1.6	1.92
Max. current draw	A	6.1	8.1	7.2	8.4
Axial Fan					
Fan type		Axial			
Quantity	no.	1		1	
Air flow rate	cfm	1350	1560	1350	1560
Max. power draw	W	180	250	180	250
Max. current draw	A	0.81	1.1	0.81	1.1
Standard Pump					
Pump type		Peripheral			
Quantity	no.	1		1	
Nominal/max fluid flow rate	gpm	1.7 - 5.3		2.9 - 5.3	
Nominal available head	psi	58	87	40	58
Available power draw	kW	0.75	0.75	0.75	0.75
Max. current draw	A	2.8	3.7	2.8	3.7
High-Pressure Pump (optional)					
Pump type		Peripheral			
Quantity	no.	1		1	
Nominal available head	psi	84	110	71	96
Max. power draw	kW	1.29	1.29	1.29	1.29
Max. current draw	A	5	6	5	6
Storage tank capacity	gal	2,64			
IN/OUT liquid connections	in	1/2"			
Net weight (approximate)***	lbs	163		165	
Width - Depth - Height	in	31.5 - 17.7 - 19.5			
Sound pressure level**	dB(A)	57	60	57	60
IP rating	IP	44			

* Data relating to operation under the following conditions: intake/outlet temperature 68/59°F, water without glycol, ambient temperature 90°F. Cooling power refers to the evaporator unit.

** Sound pressure level at 50Hz, measured in a free hemispherical field at a distance of 1 m from the machine and 1.5 metres | from the ground, per ISO 3746.

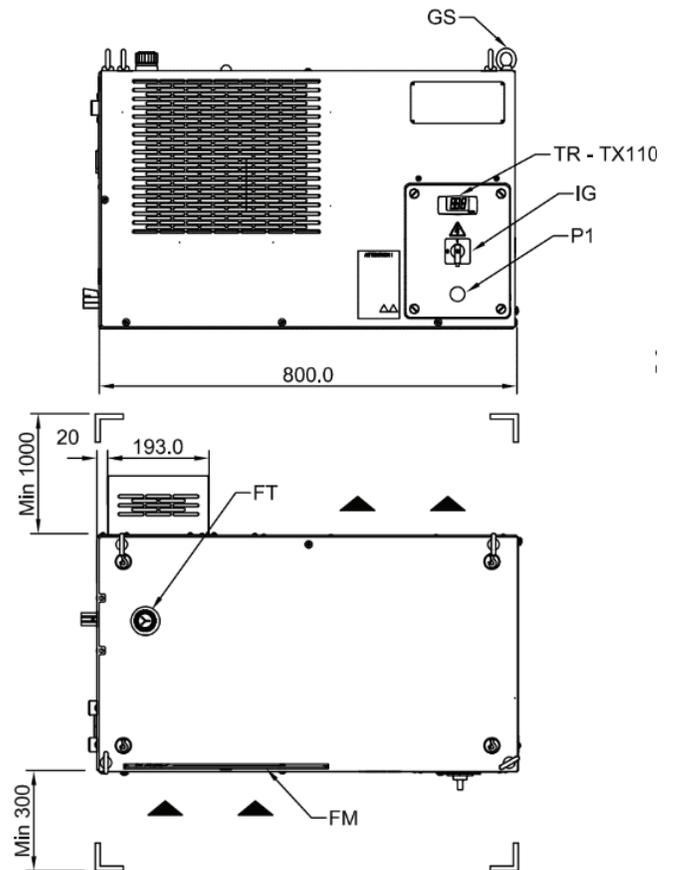
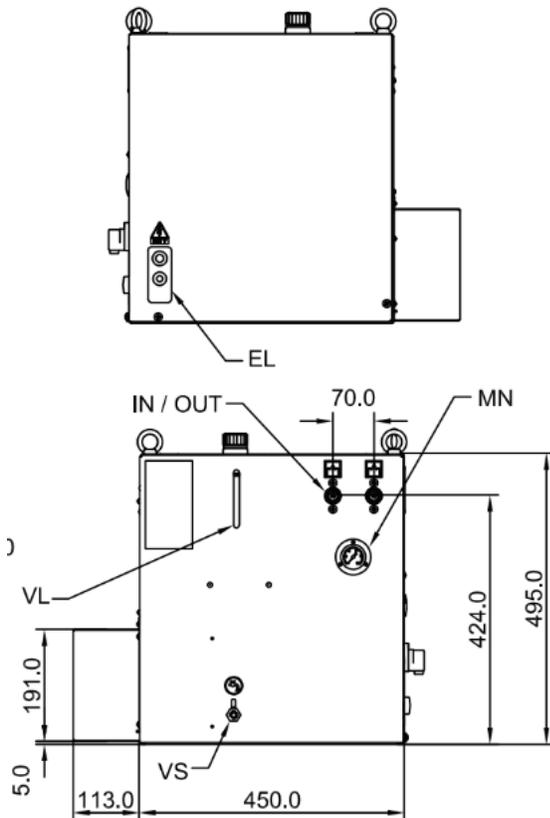
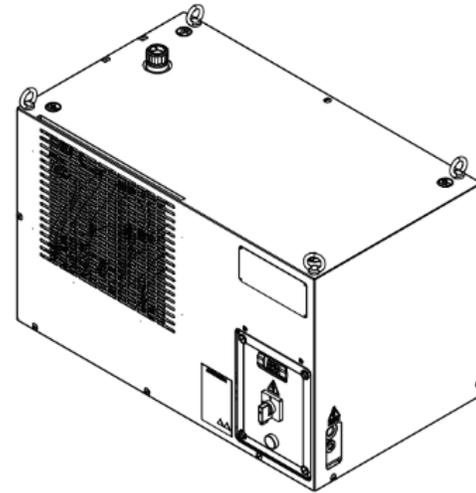
*** Weight includes pallets and packaging (where provided for), with refrigerant charge, storage tank empty, axial fans. The electrical data refer to cos φ = 0.8.

Correction factors for calculating the cooling power										
Water outlet temperature	Fw	°F				46	50	59	68	77
		factor				0.86	0.92	1	1.05	1.12
Ambient temperature	Fa	°F				59	68	77	90	95 104 113
		factor				1.16	1.1	1.05	1	0.97 0.91 0.84
Percentage glycol by weight	Fg	%	0	10	15	20	25	30	35	40
		factor	1	0.99	0.98	0.97	0.96	0.94	0.92	0.89
Cooling power = Nominal cooling power x Fw x Fa x Fg										

DRAWINGS SIZE 1: TCW31/41

Notes

1. Units: mm
2. VS – Discharge fluid tank
3. FM – Air filter
4. FT – Filling up tank
5. GS – Lifting eye bolts
6. IN/OUT – Inlet and Outlet of water
7. MN – Gauge
8. TR – Thermostat
9. VL – Visual tank level
10. IG – Main switch
11. P1 – Voltage ON
12. EL – Electrical connections
13. □ – Installation area
14. ▽ – Air flow through condenser



North America

Tel +1.800.545.6258
 Fax +1.800.527.5703
 info@nVent.com

Europe, Middle East, Africa

Tel +32.16.213.511
 Fax +32.16.213.603
 info@nVent.com

Asia Pacific

Tel +86.21.2412.1688
 Fax +86.21.5426.3167
 info@nVent.com

Latin America

Tel +1.713.868.4800
 Fax +1.713.868.2333
 info@nVent.com



Our powerful portfolio of brands:

CADDY ERICO HOFFMAN ILSCO RAYCHEM SCHROFF