



ultracool 0010-0240

ultracool mini 60Hz (type 0010 to 0240)

The ultimate water chiller

Application

Cooling and temperature control of water flow. The ultracool can be used to cool down lasers, ozone generators, plastic applications, vacuum pumps, cutting and welding machines, solvents recovery, X-ray machines, and many others. The ultracool chillers increase productivity, shorten cycle time and **reduce manufacturing costs**.

How does the ultracool work?

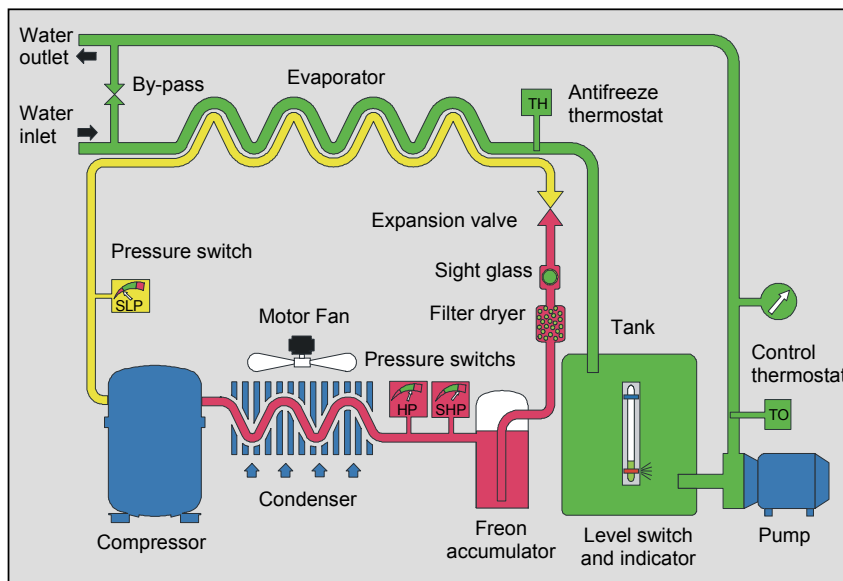
The hot water enters the ultracool unit through the evaporator of the refrigerant circuit where, due to the low refrigerant temperature, it is cooled to the required temperature. In the superplus version, the cold water is stored in the internal tank, properly insulated to avoid thermal losses. The internal tank keeps the temperature constant even under varying load conditions. Then the cold water is pushed by the circulation pump, also incorporated in its interior, toward its use. A calibrated by-pass orifice between the water inlet and outlet ensures correct flow independent of the position of the outlet valve.



The ultracool condenser and evaporator are oversized in order to achieve the maximum fridge efficiency and reduce electrical consumption.

Options

- Water filter
- Auto filling kit (only for SP version)
- 40 psi pump (included on SP version)
- 70 psi pump
- Motor fan speed regulator
- Water stability $\pm 2^{\circ}\text{F}$
- Flow switch
- Water flow meter
- Castors
- Refrfluid
- External by-pass
- Free of tension contact alarm
- Transformer
- Entirely stainless steel pump
- Pre-heater



superplus

Technical data

Features:	Benefits:
R-134a	Environmentally friendly, does not harm the ozone layer High efficiency refrigerant allows ambient temperatures of up to 122°F
Housings in galvanised steel and externally coated with epoxy resin	Corrosion resistant even in aggressive environments
Evaporator in stainless steel, water pipes of PE	No iron materials for even higher resistance
Protection degree: IP54 from UC-0060	Can be installed outdoors
Highly precise thermostat	Control of cold water temperature
Antifreeze thermostat	Evaporator protection
Oversized condenser	Low electrical consumption
superplus version	
Water tank of PE	Keeps water temperature constant even under varying load conditions.
Level switch	Pump protection in case of lack of water
Level indicator	Control of water level in water tank
Pump: Impeller, intermediate chambers and shaft allways in stainless steel. Suction and discharge in stainless steel option.	High resistance against corrosion
Internal calibrated by-pass orifice	Allows any water flow from 0% to 100%

Correction factor for cooling capacity (1): cold water temperature F ₁						
Outlet temperature (°F)	≥65	55	50	44	35	23
F ₁	1.35	1.30	1.17	1.00	0.70	0.45

Correction factor for cooling capacity (1): ambient temperature F ₂						
Ambient temperature (°F)	≤ 77	85	95	105	115	122
F ₂	1.10	1.05	1.00	0.90	0.82	0.75

Temp. and pressure range for cold water (outlet water)
t _{min} : 23°F (with ethylene glycol)
t _{max} : 77°F
P _{max} : 90 psig

Ambient temperature
t _{max} : 122°F
t _{min} : 5°F with speed regulator option, 41°F otherwise

Power supply
• UC 0010-0040: 230/1/60 Hz
• UC 0060-0240: 460/3/60 Hz

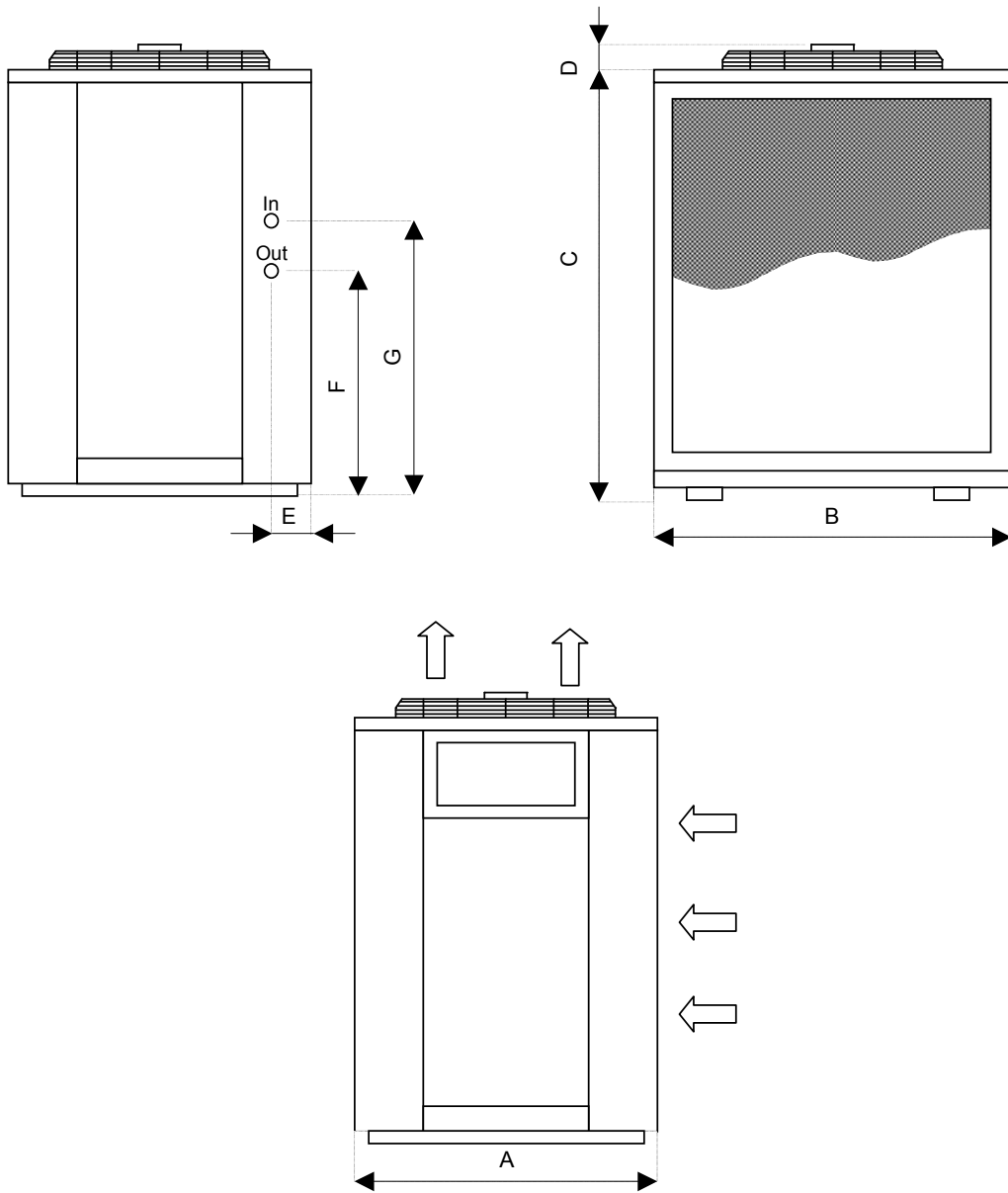
Noise level
Less than 60 dB (A) measured at 15 ft from the unit and 3 ft from the ground

Approval
CE, all components UL and CSA listed

Selection example
$C_{NOM} = C_{WORK} / (F_1 \cdot F_2)$
Example:
C _{WORK} = 25000 Btu/h
Cold water temperature: 55°F
Ambient temperature: 105°F
$C_{NOM} = 25000 / (1.3 \cdot 0.9) = 21367$ Btu/h
ultracool UC-0060

UC	Cooling capacity (1)		Cooling capacity (2)		Water flow US gal/min	Water pressure (3)		Water tank (3) US gal	Power kW		
	ton	Btu/h	ton	Btu/h		40 psig	70 psig		ST	SP 40psig	SP 70psig
0010	0.18	2217	0.23	2853	0.44	48	9 (4)	1.6	-	1.20	0.62 (4)
0020	0.35	4229	0.45	5443	0.85	48	75	9.2	0.99	1.69	1.99
0030	0.77	9212	0.99	11856	1.84	46	74	9.2	1.23	1.93	2.23
0040	1.03	12350	1.33	15894	2.47	46	73	9.2	1.52	2.22	2.52
0060	1.97	23645	2.54	30431	4.73	51	70	19.8	3.13	3.91	4.07
0080	2.40	28763	3.09	37018	5.75	49	68	19.8	3.69	4.47	4.63
0100	3.20	38420	4.12	49447	7.68	45	78	26.4	4.88	5.66	6.18
0140	4.03	48315	5.19	62181	9.66	42	70	26.4	6.03	6.81	7.33
0180	5.54	66534	7.13	85629	13.30	44	73	52.8	7.60	8.54	9.68
0240	7.69	92330	9.90	118829	18.46	41	67	52.8	10.50	11.77	12.58

(1) Related to nominal conditions: Water outlet temperature 44°F and ambient temperature 95°F (3) superplus units
 (2) Related to: Water outlet temperature 50°F and ambient temperature 77°F (4) special unit with recirculating pump
 Technical alterations reserved (Date 03/01)



UC	Water connection	Weight (lb)		A	B	C	D	E	F	G
		ST	SP	in	in	in	in	in	in	in
0010	3/8" NPT	-	132	20	16	27	0	2	23	13
0020	1/2" NPT	220	254	21	25	35	0	18	30	14
0030	1/2" NPT	231	265	22	25	44	0	19	39	22
0040	1/2" NPT	243	276	22	25	44	0	19	39	22
0060	3/4" NPT	364	408	31	35	45	5	4	14	34
0080	3/4" NPT	397	441	31	35	45	5	4	14	34
0100	1" NPT	474	518	33	39	49	5	5	12	36
0140	1" NPT	518	573	33	39	49	5	5	12	36
0180	1" NPT	761	827	37	45	64	5	5	12	42
0240	1" NPT	805	882	37	45	64	5	5	12	42