

OPTIONS:	
Single P3 Pump	P3
Non ferrous atmospheric water circuit (plastic water tank)	TANF
Without tank	T0
Without pump	P0
Additional atmospheric water tank kit (glycol charge)	TA
Hot tank (circuit modification only - no extra price)	TPH
Disconnecter tank with P2 Pump (pressurized carbon steel tank included)	X2
Disconnecter tank with P3 Pump (pressurized carbon steel tank included)	X3
Disconnecter tank with P2 Pump (atmospheric circuit, PVC tank and non-ferrous materials)	X2 TANF
Disconnecter tank with P3 Pump (atmospheric circuit, PVC tank and non-ferrous materials)	X3 TANF
Water level switch	LSM
Pump shut-off valve	[1] VSP
Water filter shut off valves (valid for both standard and non-ferrous versions)	VSF
Mechanical seal and possible pumps' motor oversizing for glycol concentration 41 - 50%	SPG
Evaporator anti-freeze heater	RA1
Evaporator and pump anti-freeze heaters	RA2
Evaporator, pump and tank anti-freeze heaters	RA3
Electronic thermostatic valve	VE
Continuos fan(s) speed control - phase cut type (minimum ambient temperature -8.0°C)	CA
Continuos fan(s) speed control - electronic fan(s) (minimum ambient temperature -10.0°C)	CE
Compressor(s) shut off valves (on discharge and suction manifolds of refrigerant circuit)	VSC
Anticorrosion treatment on condenser (cataphoresis)	OEC
Acoustic shield for compressors	AI1
Electrical switchboard anti-condensing heater	RS
Remote Panel Kit	ER
Threaded water connections kit (GAS)	[2] WC2
Rubber anti-vibration mountings kit (no tank units)	FA1
Rubber anti-vibration mountings kit (units with tank)	FA2
Wheels kit	FW
Wooden basement	PWB
Wooden crate	PWC

- [1] Option to be multiplied by the number of installed pumps
- [2] Option available for CEN 052:096

### SOME OTHER UNITS AVAILABLE FROM OUR PREMIUM LINE

QBE



LIQUID CHILLERS  
FROM 2 TO 25 KW

CFT



LIQUID CHILLERS  
FROM 100 TO 300 KW

CWV



LIQUID CHILLERS  
FROM 280 TO 1200 KW

CDC



DRYCOOLER  
FROM 300 TO 1200 KW



# CEN

INDUSTRIAL LIQUID CHILLERS FOR WINERIES/BREWERIES

FROM 10 TO 96 KW

Архангельск (8182)63-90-72  
Астана (7172)727-132  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89  
Иваново (4932)77-34-06

Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Липецк (4742)52-20-81

Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижний Новгород (831)429-08-12  
Новокузнецк (3843)20-46-81  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16

Россия (495)268-04-70

Пермь (342)205-81-47  
Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13

Казахстан (772)734-952-31

Сургут (3462)77-98-35  
Тверь (4822)63-31-35  
Томск (3822)98-41-53  
Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Ярославль (4852)69-52-93

# CEN

## DESCRIPTION

The new CEN range is specifically designed to meet the application requirements of wineries by offering precise control of refrigerated water temperature while operating over long time periods with varying load demands. The range includes 14 models with cooling capacities from 10 to 96 kW.

It is designed for outdoor installation, with specific standard components especially indicated at low temperatures.

## FRAME AND CABINET COVERING

All frame and cabinet cover material is made of galvanized steel that is then powder coated, making the CEN suitable for outdoor installation and for protection in harsh environments. The compressor cabinet is separate from the fan's section and is accessible on three sides to make control and maintenance easy. The hydraulic section is also easily accessible.

## EASY MAINTENANCE

The CEN series has been designed and built to facilitate inspection and maintenance. The hoods are easily removable, offering immediate access to system components. The clear arrangement of the components, the simplicity of the refrigerant and hydraulic circuit plus the electrical system's cable numbering, assist the users normal operating schedule.



## REFRIGERANT CIRCUIT

Made with top quality materials, conforming with directive 2014/68/EU. It includes dehydrator filter, liquid solenoid valve, liquid sight glass flow, thermostatic expansion valve sized to satisfy water setpoint 7°C / -8°C, high pressure safety switch with manual reset and low pressure transducer with semi-automatic reset, HP and LP refrigerant gauges, pressure plugs.

## TECHNICAL DETAILS

### WATER CIRCUIT

All units are equipped with circulation pump, ferrous pressure tank of the "cold" type, safety valve, expansion vessel, water pressure gauge, recharging valve. Thermal insulation for hydraulic pipes, fittings and pumps particularly suitable for low temperatures. Centrifugal pump P2 type, with steel impeller, 2-pole, self-ventilated, class F insulation and IP55. Suitable for working with propylene glycol up to 40% concentration and temperatures of -10 ° C. Other hydronic configurations are available in the options table.

### COMPRESSOR

Of hermetic SCROLL type. They are all equipped with heating resistance, mounted on rubber anti-vibration blocks, protected by an electronic device controlling phase sequences to avoid any contrary rotation and complete with integrated ampere-thermic protector and filled with lubricant oil.

### CONDENSER

Micro-channel aluminium plate condenser for CEN 010÷046. Condenser manufactured of plated copper tubes with aluminium fins for CEN 052÷096. All units are equipped with condenser air filters with aluminum mesh and galvanized structure. They can be easily removed for assistance and cleaning. Cathaphoresis anti-corrosion treatment is available as an option on the entire range of condensers.

### FANS

The CEN 010 ÷ 019 models are equipped with a single fan; all other models have two fans. Fans with 4 pole, axial motors, with curved blades to improve rotation speed and decrease noise, with protective grid. Direct drive motor with internal thermal protector and IP 54. Standard step condensation control; phase cut or electronic fan versions are available as an option.

### EVAPORATOR

Stainless steel brazed plate heat exchanger. Thermally insulated and protected by water filter connected at the inlet. Sized for low water temperature operation.

PERFORMANCES [1]		CEN010	CEN014	CEN019	CEN025	CEN027	CEN033	CEN038	CEN046	CEN052	CEN056	CEN063	CEN076	CEN088	CEN096	
Ambient temperature	[°C]	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	35,0	
Evaporator inlet water temperature	[°C]	12,0	-5,0	12,0	-5,0	12,0	-5,0	12,0	-5,0	12,0	-5,0	12,0	-5,0	12,0	-5,0	
Evaporator outlet water temperature	[°C]	7,0	-8,0	7,0	-8,0	7,0	-8,0	7,0	-8,0	7,0	-8,0	7,0	-8,0	7,0	-8,0	
Ethylene glycol percentage	---	0%	40%	0%	40%	0%	40%	0%	40%	0%	40%	0%	40%	0%	40%	
Cooling capacity	[kW]	11.04	6.37	15.98	9.01	19.76	11.53	28.93	16.65	32.07	18.58	35.06	20.38	39.89	23.47	
Compressors power input	[kW]	3.23	2.89	5.50	4.61	6.36	5.29	7.28	6.51	8.45	7.50	9.72	8.57	12.09	10.55	
Total power input	[kW]	4.09	3.75	6.61	5.72	7.71	6.64	9.71	8.94	10.88	9.93	12.15	11.00	14.64	13.10	
Total absorbed current	[A]	7.50	6.99	11.55	10.30	14.42	13.38	16.76	15.65	18.79	17.43	20.85	19.18	25.47	23.30	
Energy efficiency rating (without pump)	EER	3.06	1.95	2.72	1.81	2.83	1.95	3.28	2.07	3.21	2.06	3.11	2.02	2.93	1.94	
Seasonal energy efficiency rating	[*] SEPR HT	5.14	-	5.19	-	5.02	-	5.05	-	5.10	-	5.06	-	5.01	-	
Water flow	[l/h]	1899	2083	2748	2943	3399	3769	4977	5440	5516	6072	6031	6662	6861	7670	
Available pressure	[kPa]	154	133	194	166	165	124	186	147	180	139	154	104	185	110	
<b>ELECTRICAL DATA [3]</b>																
Maximum power input (total)	[kW]	5.64	8.22	10.38	13.84	15.26	16.76	19.16	25.84	25.54	28.38	31.39	37.13	43.10	48.67	
Maximum absorbed current (total)	[A]	9.87	13.99	18.07	22.94	25.30	27.77	32.15	41.98	41.08	45.80	50.74	60.51	70.26	78.81	
Starting current	[A]	54.80	92.20	100.80	128.00	143.00	150.00	177.40	147.04	146.14	163.50	172.97	205.75	250.23	254.50	
Fan power	[kW]	0.19	0.19	0.31	0.31	0.77	0.77	0.77	0.77	0.62	0.62	0.62	0.94	0.94	0.94	
Fan current	[A]	0.40	0.40	0.70	0.70	1.70	1.70	1.70	1.70	1.25	1.25	1.25	1.70	1.70	1.70	
Fans quantity	[#]	1	1	1	2	2	2	2	2	2	2	2	2	2	2	
Pump power input	[kW]	0.48	0.73	0.73	0.89	0.89	0.89	1.01	1.48	1.48	1.48	1.48	2.02	2.43	2.43	
Pump absorbed current	[A]	1	1.40	1.40	1.60	1.60	1.60	2.00	2.70	2.70	2.70	2.70	3.60	4.80	4.80	
Power supply	[V/Ph/Hz]	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	
IP protection degree	---	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	IP54	
<b>TECHNICAL DATA</b>																
Compressors quantity	[#]	1	1	1	1	1	1	1	2	2	2	2	2	2	2	
Sound pressure level at 10 m in free field [4]	[dB(A)]	43,5	43,5	48,5	55	55	55,5	55,5	56	54	54	55	59,5	60	60	
Water connections diameter	[5] [inch]	1"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2"	2 1/2"	2 1/2"	
Tank capacity	[dm3]	80	80	80	100	100	200	200	200	300	300	300	300	300	300	
Expansion vessel capacity	[dm3]	8	8	8	12	12	12	12	12	18	18	18	18	18	18	
Width	[mm]	685	685	685	925	925	925	925	925	1.380	1.380	1.380	1.380	1.380	1.380	
Depth	[mm]	1.455	1.455	1.455	1.890	1.890	1.890	1.890	1.890	2.590	2.590	2.590	2.590	3.090	3.090	
Height	[mm]	1.456	1.456	1.456	1.580	1.580	1.580	1.580	1.580	1.960	1.960	1.960	1.960	1.960	1.960	
Weight - standard/empty version	[kg]	330	340	360	490	510	530	550	560	880	880	910	950	1110	1130	

\* [1] Data reported here are in accordance with European Regulation (EU) 2016/2281 for eco-design requirements of cooling products and high temperature process chillers.

[2] Data related to the unit without pump

[3] Data related to the worst conditions allowed, without the intervention of the safety devices

[4] Referred to: water temp. in/out: 12/7°C - ambient air temp. 35°C

[5] For CEN 010 + 046: threaded connections - CEN052 + 096: grooved connections

### CONTROL PANEL:

Control panel complying with EN 60204 CE, with door lock disconnecter (blocks access to the control panel when it is live) and watertight door to access the electronic control. It includes circuit breaker protectors for compressors and pump, contactors, autotransformers, compressor rotation direction control devices; the cables are identified. The ON/OFF switch on the panel door makes the use easier.

### MICROPROCESSOR CONTROLLER:

It allows to check at any time the operation parameters: condensing pressure, evaporating pressure, inlet and outlet temperatures and all digital inputs and outputs. In case of partial or total stop of the unit, the alarm history is available and allows to know which security device has tripped. The controller is standard equipped with RS485 port for modbus connections. As an option LAN/Ethernet connection is available and it is possible to connect the unit to an internet gateway for remote supervision. The accessibility to the controller's setup is very easy by means of a usb cable connected to client's laptop. This enables to directly upload new firmware revisions and any new mapping for the controller. The use of a converter is not required.



## OPERATING LIMITS (min/max)

- Ambient air temperature **without** condensation control: CEN 010÷019: +10°C/+43°C, CEN 025÷096: 0°C/+43°C
- Ambient air temperature **with** condensation control: CEN010÷096: -10°C/+43°C
- Outlet water temperature: Cooling mode: -10°C/+20°C

## CHECKS AND TEST

Each CEN is tested with full load. The following tests are also carried out:

- Correct components assembly
- Pressurization of the refrigeration circuit to test for leaks using helium leak-searcher;
- Hydraulic circuit pressing
- Electric tests in compliance with standard EN60204
- Protections and safety devices correctly working
- Electronic controller correctly working;
- Thermal performance and electric quantities measurement.

### MAIN FUNCTIONS:

- Accensione e spegnimento della pompa (opzionale)
- Funzionamento dei ventilatori
- Controllo dei cicli di accensione e spegnimento del compressore in funzione della temperatura dell'acqua richiesta
- Misura e visualizzazione delle temperature dell'acqua
- in ingresso ed uscita dell'evaporatore
- Misura e visualizzazione della pressione e della temperatura di condensazione e di evaporazione
- Protezione antigelo
- On-off remoto
- Cronologia degli allarmi

### ALARMS CONTROL

- Low/high refrigerant pressure transducer
- Water differential pressure switch
- Wrong phase sequence
- Compressors thermal protection
- Temperature failure probes
- Pressure failure transducers
- High water temperature
- Anti-freeze