

# COOLERS FOR PHOTOMULTIPLIER TUBE C10372/C10373 SERIES

The C10372 series and C10373 series are water-cooled thermoelectric coolers designed to reduce thermal electrons emitted from the photocathode of photomultiplier tubes (PMTs) in order to improve signal-to-noise ratio (S/N ratio). The C10372 series further contains an electrostatic and magnetic shield that minimizes the influence of the ambient environment.

The C10372 series are for 28 mm and 51 mm diameter head-on PMTs, while the C10373 series are for MCP-PMTs.

## FEATURES

- Thermoelectric cooling using Peltier module
- About -30 °C cooling temperature (with +20 °C cooling water)
- Temperature can be set in the range of -30 °C to 0 °C (dial type)
- Evacuated, double-pane window with heater for frost prevention
- Built-in electrostatic and magnetic shielding (C10372 series)
- Internal protective circuit safeguards Peltier element module in case of low water
- Internal protection circuits prevent output short-circuit, output overvoltage, and excessive temperature rise in power supply
- Stable operation due to a regulated power supply



Left: Power supply Right: Cooled PMT housing



## SPECIFICATIONS

### COOLED PMT HOUSING

Parameter		Description / Value
Cooling method		Thermoelectric cooling using Peltier module
Heat exchange medium		Water
Amount of cooling water		1 L/min to 3 L/min (water pressure: below 0.3 MPa)
Cooling temperature (with cooling water at +20 °C)		Approx. -30 °C
Temperature controllable range (with cooling water at +20 °C)		-30 °C to 0 °C (continuously adjustable)
Cooling time		Approx. 120 min
Optical window material		Evacuated double-pane synthetic silica window with heater (185 nm to 2200 nm)
Applicable PMTs (sold separately)	C10372 series	28 mm (1-1/8" Dia., 51 mm (2" Dia. head-on
	C10373 series	MCP-PMT (R3809U series, R5916U series) <sup>(A)</sup>
Applicable socket assembly (sold separately)	C10372 series	E2762 series <sup>(A)</sup>
Applicable PMT holder (sold separately)	C10373 series	E3059-500 (R3809U series), E3059-501 (R5916U series)
Operating ambient temperature / Humidity <sup>(B)</sup>		+5 °C to +40 °C / Below 75 %
Storage temperature / Humidity <sup>(B)(C)</sup>		-15 °C to +50 °C / Below 80 %
Weight		C10372 5.8 kg / C10373 5.5 kg

NOTE: <sup>(A)</sup>See the section of sold separately <sup>(B)</sup>No condensation <sup>(C)</sup>No cooling water

### POWER SUPPLY

Parameter		Description / Value
AC Input voltage	C10372/C10373 <sup>(D)</sup>	AC 100 V (50 Hz / 60 Hz)
	C10372-01/C10373-01 <sup>(E)</sup>	AC 120 V (50 Hz / 60 Hz)
	C10372-02/C10373-02 <sup>(F)</sup>	AC 240 V (50 Hz / 60 Hz)
Power consumption		200 V·A
Output voltage		24 V to 27 V
Output current		4.2 A
Protection circuit		Protective circuits to safeguard Peltier element module in case of low water and to prevent output short-circuit, output overvoltage, and excessive temperature rise in power supply.
Operating ambient temperature / Humidity <sup>(B)</sup>		+5 °C to +40 °C / Below 75 %
Storage temperature / Humidity <sup>(B)</sup>		-15 °C to +50 °C / Below 80 %
Weight		2.1 kg

NOTE: <sup>(B)</sup>No condensation <sup>(D)</sup>For Japan <sup>(E)</sup>For America <sup>(F)</sup>For Europe

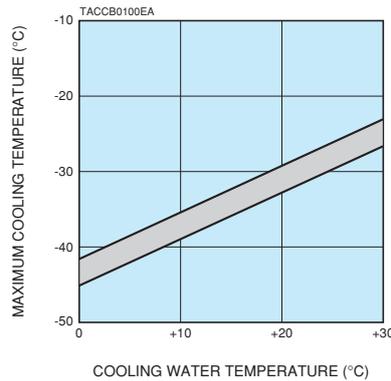
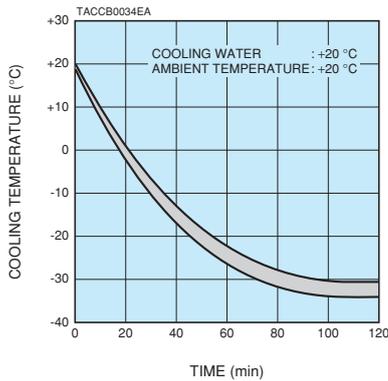
### COMPONENTS AND ACCESSORIES

- Cooled PMT housing (Including an input window)
- Power supply
- Light shield cap
- Water hose clamps (2 pcs)
- Connection cable (1.5 m)
- AC line cable (2.5 m: -02 type, 2.0 m: other types)
- Socket assembly / PMT holder mounting screw (4 pcs)

\* To use these coolers, water hoses with an inner diameter of 15 mm and a water supply line with the matching round faucet are required. Prepare those hoses of the desired length. In addition, prepare a filter for removing impurities such as chlorine ions.

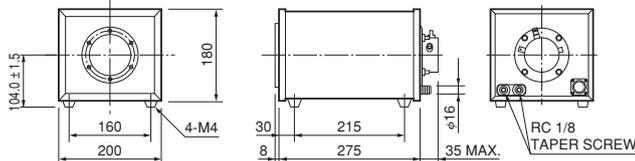
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## COOLING CHARACTERISTICS



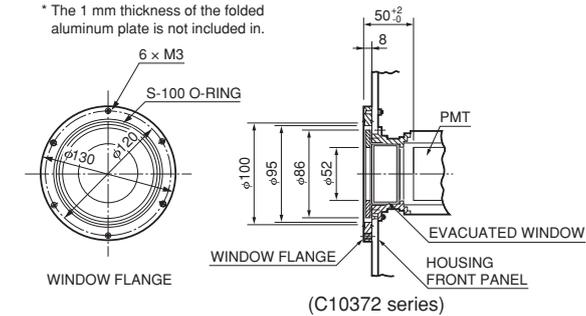
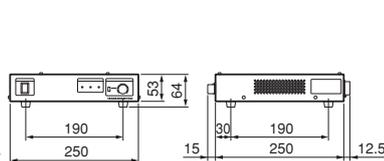
## DIMENSIONAL OUTLINE (Unit: mm)

### HOUSING



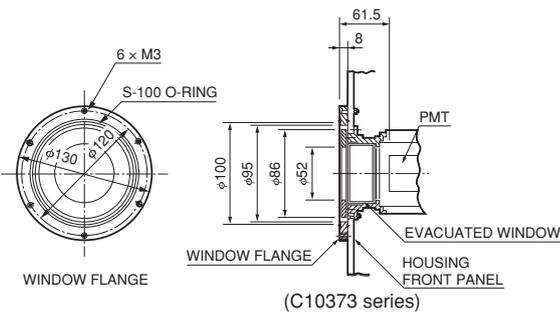
\* The 1 mm thickness of the folded aluminum plate is not included in.

### POWER SUPPLY



(C10372 series)

TACCA0292EA

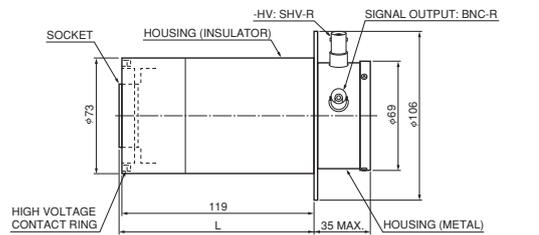


(C10373 series)

TACCA0293EA

## SOLD SEPARATELY (Unit: mm)

### Socket assemblies for C10372 series E2762 series

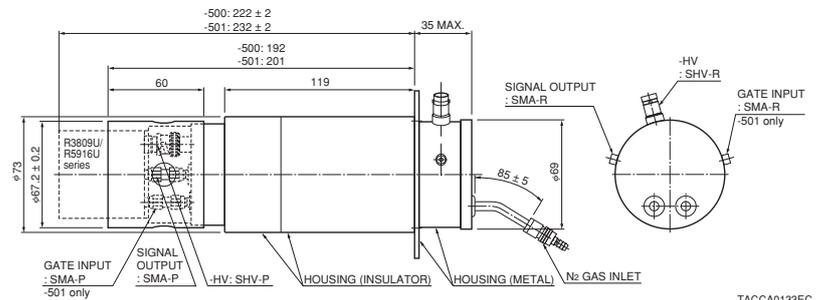


TACCA0130ED

L: E2762-509...106.5  
E2762-510...106.5  
E2762-511...120.5

\* The high voltage contact ring is used for internal electrical connection to the magnetic shield case in the cooler.

### MCP-PMT holder for C10373 series E3059-500/-501



TACCA0133EC

NOTE: (A)	E2762 series	PMT
	E2762-509	R464, R585, R649
	E2762-510	R329-02, R331-05, R2257
	E2762-511	R316-02, R374, R2228, R5929, R6249

Holder for MCP-PMT	MCP-PMT
E3059-500	R3809U-50 / -52 / -61 / -64
E3059-501	R5916U-50 / -52 / -61

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