

DH-00-Te Cooled Housing



The DH-00-Te cooled housing accepts all 28mm (1 1/8 inch) diameter side-window photomultiplier tubes. It has been designed to be integrated easily and unobtrusively into light measurement systems where dark current or temperature dependent gain variations* need to be minimised. Minimum internal temperature is -25°C and stability better than $\pm 0.1^{\circ}\text{C}$. For a multi-alkali pmt, dark current is typically reduced by a factor of 100**.

Ease of mounting has been a key factor in the design of the DH-00-Te. The plane fixing flange used on most cooled housings can cause difficulty when coupling to other units e.g. a monochromator exit slit. The user either needs to fix from inside the monochromator or to mount the housing using a short tube with a flange at each end.

The DH-00-Te avoids this problem. A separate plate, supplied with the housing, can be drilled and attached to the other unit. The housing locates on this plate and is clamped into place by screws accessible from the side. Rigid, light-tight coupling is achieved with minimum separation between the source and the photocathode.

Simple, two-piece construction makes for easy pmt replacement and ensures the high degree of sealing required for continuous operation. A PCB-based dynode chain, wired either for linear operation or pulse counting, is mounted along with the connectors in the lower, uncooled section. The mounting of the input window, which is fused silica as standard, avoids condensation. The pmt is protected from extraneous magnetic fields by an integral mu-metal shield.

Machined insulation ensures consistent results

and minimises the heat pumping requirements while a highly efficient corrugated heat sink reduces fan noise and allows operation with restricted air flow e.g. inside a sample chamber.

A compact power supply/controller, linked to the housing by a single cable, displays target and actual internal temperature.

Specification

Heat Pump:	2-stage Peltier with air heat pump
Minimum Internal Temperature:	-25°C
Maximum Internal/External ΔT :	45°C
Temperature Stability:	$\pm 0.1^{\circ}\text{C}$
Cool down time: ($+20^{\circ}\text{C}$ to -20°C)	Housing with tube: 2 hours
Connectors	BNC and HV-BNC SMA and SHV optional
Dynode Chain Resistance:	Linear: 750 k Ω Pulse Counting: 3.92 M Ω
Window Material:	Fused silica

* Typically $-0.3\% / \text{C}$ for multi-alkali at $<800\text{nm}$.

** Hamamatsu R928 $+20^{\circ}\text{C}$ to -20°C .

DH-00-Te

Ordering Information

DH-00-Te	Cooled housing
DH-10-Te	Cooled housing fitted with bi-alkali PMT (200-600nm)
DH-30-Te	Cooled housing fitted with multi-alkali PMT (200-900nm)
CPS20	Free-standing power supply and controller for DH-00-Te
CPS20M	Modular version of CPS20M for use in 217 bin



Quick-Change adapter

INSTRUMENT TO WHICH COOLED SIDE WINDOW IS ATTACHED

'O' RING COMPRESSED TO MAKE LIGHT TIGHT SEAL

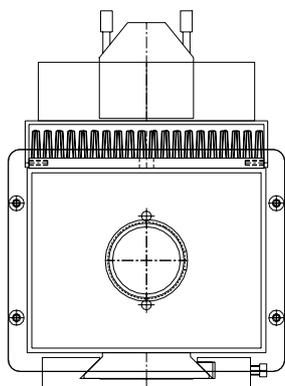
CLAMPING WEDGE FULLY RETRACTED

STEP 1
DROP HOUSING INTO DOVETAIL

STEP 2
TIGHTEN SCREWS ON SIDE TO ACTIVATE WEDGE

STEP 3
HOUSING & INSTRUMENT LOCKED TOGETHER

'O' RING COMPRESSED TO MAKE LIGHT TIGHT SEAL



DH-00-Te Dimensions (in mm)

