HAMAMATSU

PHOTON IS OUR BUSINESS

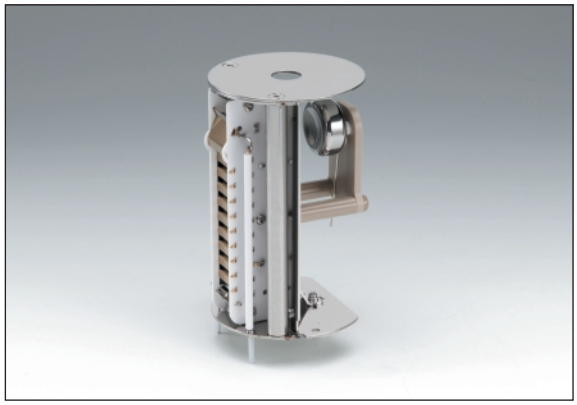
ELECTRON MULTIPLIER
R6985-80

With Conversion Dynode, Off-axis Structure for Gas / liquid QMS (Quadruple Mass Spectrometry)

SPECIFICATIONS

GENERAL

Parameter	Description / Value	Unit
Input Aperture Diameter	ϕ11	mm
Dynode Structure	Conversion + box and linear focused	—
Number of Dynode Stages	19	—
First Dynode Material	Al_2O_3	—
Total Built-in Resistance	17.15	MΩ
Operating Ambient Temperature	-30 to +50	°C
Storage Temperature	-80 to +50	°C
Polarity of Detected Ions	Positive / Negative	—



MAXIMUM RATINGS

Parameter	Value	Unit
Anode to First Dynode Voltage	-3000	V
Anode to Last Dynode Voltage	350	V
Conversion Supply Voltage	±10	kV
Operating Vacuum Level	1×10^{-2}	Pa
Bake-Out Temperature (at 5×10^{-3} Pa)	No baking	—
Average Anode Current Ⓐ	10	μA
Operating Gain	1×10^{8}	—

CHARACTERISTICS

Parameter	Value	Unit
Recommened Supply Voltage	-1900	V
Gain (Typ.)	1×10^{6}	—
DC Linearity (Typ.)	5	μA
Dark Current (Max.)	1	pA
Rise Time (Typ.)	4.5	ns
Anode to All Other Electrode Capacitance	1.8	pF

NOTE: Ⓐ Averaged over any interval of 30 seconds maximum.

Figure 1: Typical Gain

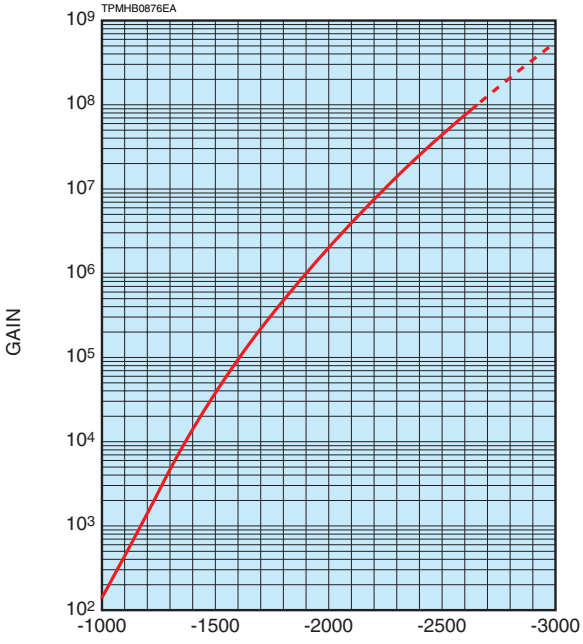
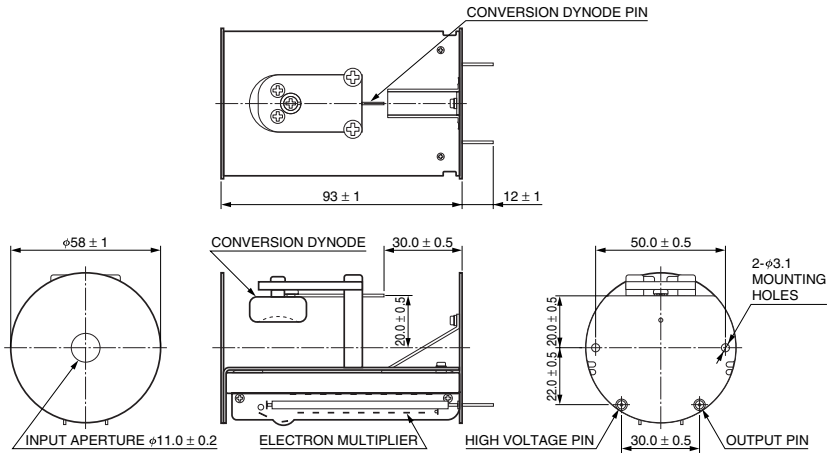
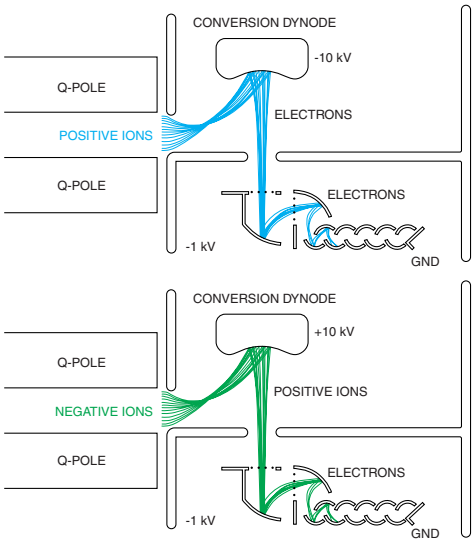


Figure 2: Dimensional Outline (Unit: mm)



POSITIVE ION / NEGATIVE ION DETECTION MECHANISM



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When positive ions strike the conversion dynode, electrons are emitted from the conversion dynode according to the quantity of input ions. These emitted electrons are then guided into the electron multiplier for secondary multiplication.

When negative ions strike the conversion dynode, positive ions are emitted from the conversion dynode according to the quantity of input ions. These emitted positive ions then enter the electron multiplier while receiving energy from the difference in potential between the conversion dynode and electron multiplier, and strike the first dynode of the electron multiplier where electrons are released according to the quantity of input positive ions. These electrons are then guided to the second and subsequent dynodes for secondary multiplication.

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