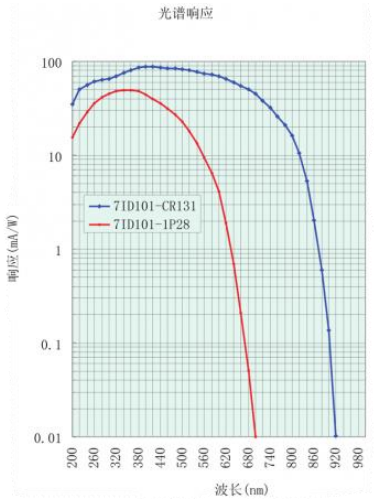
7ID101 系列光电倍增管探测器(PMT) 7ID101 series of side window photomultiplier detector (PMT)

Main features

- Side window reception, with electric, magnetic and light shielding
- Standard BNC plug for the output signal, special enduring high-voltage BNC plug input for stable high voltage.
- To combined use with 7IP1250 high voltage power supply produced by our company will be a better effect.
- E678-11A special tube socket is built in the chamber and welding dividing voltage resistor
- It is suitable for the placement of photomultiplier of R316-01 (formerly R212), R317 (formerly R212UH),
- R316-02 (formerly 1P28), CR131, R105, 1P21, R105UH, 931A, CR114, CR184, R1527, R1527P (if CR131 photoelectric photomultiplier in the photomultiplier chamber, then the model should be 7ID101-CR131)
- It can combine use with spectrum instrument series, sample chamber and filter wheel produced by our company.



Technical Parameters

Model	7ID101-CR131	7ID101-1P28
Wavelength Range (nm)	185-900	185-650
Peak Wavelength (nm)	400	340
Cathode sensitivity SK (m A/W)	74	48
Cathode Effective Area (mm×mm)	8×24	8×24
Dynode gain	6×10^{6}	1×10^{7}
Anode dark current Idb (A)	3×10^{-9}	5×10^{-9}
Anode pulse rise time (ns)	2.2	2.2
The electron transit time (ns)	22	22
Maximum Voltage (V) between the anode and the cathode	1250	1250
Examples for application technology （Application Area）	UV -VIS spectrophotometer, atomic absorption spectrophotometer, DNA detection, near infrared photometric detection	Fluorescence spectrophotometer, Raman spectrometer, gas liquid chromatography, turbidity meter, direct reading spectrometer, biochemical test instrument, oil and water analysis, mercury analyzer, sulfur, nitrogen oxides, environmental monitoring instruments, chemiluminescence instrument
Weight	0.77kg	

7ID102-R316(-02) Series of end window photomultiplier detector (PMT)

-- Infrared Photomultiplier

Characteristic.

- To use infrared photomultiplier and improve the detection ability of the near infrared weak signal is a preferred product of near infrared testing.
- With end window reception, large reception area (diameter 25mm), It has an electric, magnetic and light shielding,
- Standard BNC plug for signal output, special enduring high-voltage BNC plug input for stable high voltage.
- To combined use with 7IP1500A high voltage power supply produced by our company will be a better effect.
- E678-14C special tube socket is built in the chamber and welding dividing voltage resistor.It is suitable for the placement of R316, R316-02
- Photomultiplier tube (if it has a built-in R316-02 photomultiplier, then the model shoul be 7ID102-R316-02)
- It can combine use with spectrum instrument series, sample chamber and filter wheel produced by our company.

Specifications:

Model	7ID102-R316	7ID102-R316-02
Spectral Response	400 to 1200 nm	
Wavelength of Maximum Response	800nm	
Window Material	Borosilicate glass	
Cathode Material	Ag-O-Cs	
Effective diameter of The photosensitive surface	25mm	
Number of Stages	11	
Suitable Socket	E678-14C	
Cathode Sensitivity at 800nm (peak)	1.9mA/W	
Anode Sensitivity at 800nm (peak)	950A/W	
Quantum Efficiency at 1.06μm	0.02	0.06
Anode dark current at 4A/lm	1000nA	2000nA
Supply voltage between anode and cathode	1500V	

7IP1250/7IP1500A HIGH VOLTAGE POWER SUPPLY

—7ID101/102 Series Power Supply matched of photomultiplier

The characteristic and the main parameter:

- Matched with photomultiplier to provide the stable DC high voltage , used in precision measurement.
- It can be used individually as a high voltage stable power supply
- Output voltage: 0 to -1250V (or -1500V) continuous adjustable
- Output voltage regulation can be manually controlled, also can be controlled by PC and D/A converter, an external control voltage 0-5V can be connected.
- Manual adjustment with locking device, can avoid the change in output voltage fault.
- Ripple: 30mV
- The maximum output current: 1mA.
- Maximum output voltage drift: ± 0.03%/h
- Output voltage indication: $3^1/_2$ bits LCD display
- Weight: 2.6kg

7ID102-D1363/1963 The new end window photomultiplier detector （CPM）

The end window photomultiplier CPM is a new ultra high sensitive photoelectric detector, and expanded the range of application of analytical instruments, such as the research of radiation spectroscopy, fluorescence detection, atomic absorption spectrometry, bioluminescence and chemiluminescence . At the same time, CPM also provides an important research method for the life science, industrial and medical equipment and high energy physics.

The working principle of CPM: It is similar to the traditional photomultiplier (PMT), through a semitransparent photocathode mounted on the surface of end window to receive a very weak incident light and to change the low level light into the photoelectron. Then the photoelectron from cathode to anode, through a narrow semiconductor channel, when the photoelectron impacts inner surface of the bending channel each time, It will come into a avalanche effect similar to the

photomultiplier and emits a multiplicative second electron. The effect will be along the entire multiplication channel happended many times, leading to the avalanche effect and the gain of 10E8. Curved glass tube shape enhances its multiplier effect.

A. Main characteristics of photomultiplier:

- Super high anodic sensitivity, at 3000 volts maximum bias voltage with gain of 10E8A/W; at 2400 Volts, the typical gain of 3x10E6A/W, compared with the traditional PMT ,It will be more than one to two orders of magnitude, and more than APD 5 orders of magnitude.
- High stable dark current, surfaces of CPM semiconductor without charging effects, It does not produce abrupt pulse current
- Very low dark current, typical values of 3pA@10E6 gain, one to two orders of magnitude lower than that of traditional PMT, extends the detection range.
- High dynamic range, fast response, anti electromagnetic interference.
- Ultra low equivalent input noise (less than 10E-17W)
- Excellent photon counting resolution, excellent peak / valley ratio, when the gain is 10E7,It will perfectly take apart the separate the photoelectron pulses and electrical noise,

B. Typical applications:

- Fluorescence, ultraviolet, visible, infrared spectrophotometer, colorimetric photometer
- High precision, high efficiency of photon detection and scintillation counting applications
- Fluorescence detection analysis, fluorescence spectrophotometer
- Weak light detection
- Precision analysis instruments and biochemical analysis and medical instrument
- Research of bioluminescence and chemiluminescence
- Monitoring of environmental radiation dose
- β and γ ray detection
- High-energy physics

C. Features:

- With I/U conversion amplifier ,output voltage signal
- Strong light automatic protection
- 150μs gate controled time
- Integrated high voltage, the highest 3000V
- With electronic shutter itself

Multi alkali cathode (Multialk)

7ID102-D1363/1963 The new end window photomultiplier detector

Model	7ID102-D1363	7ID102-D1963
Photocathode Diameter	13mm	19mm
Photocathode material	Multi alkali cathode (Multialk)	
Window material	UV glass	
Range of Spectral reponse	185-850nm	
Equivalent noise input	$8x10^{-17}W$	$1x10^{-16}W$
Dark noise /Offset voltage@$1x10^{6}$ gain & 1V/20nA	120pA/6mV	300pA/15mV