

# **7ID101 PMT Detectors**

USER MANUAL

OPTICS FOCUS

## Content

1.	Introduction .....	2
2.	Appearance and mounting connection .....	2
3.	Distinction between the high voltage line and the signal line.....	3
4.	Specifications .....	3
5.	Cautions .....	4

## 1. Introduction

As a highly sensitive detector, photomultiplier tubes are widely used in teaching, scientific research, and industrial fields to measure transmission, reflection and absorption properties of materials and spectral properties of radiation sources. The tube chamber of 7ID101 series photomultiplier tube detector has optical, electric, and magnetic shielding, built-in E678 special tube holder and welding pressure divider resistance, suitable for R212, R212UH, 1P28, CR131, R105, 1P21, R105UH, CR114, CR184, R928, R1527, R1527P side window photomultiplier tube (if the CR131 is installed in the photomultiplier tube, the model is 7ID101-CR131). The detector can be used with our company's 7IMS series monochromator or 7ISW series spectrometer, and can also be independently used in other measurement aspects.

## 2. Appearance and mounting connection

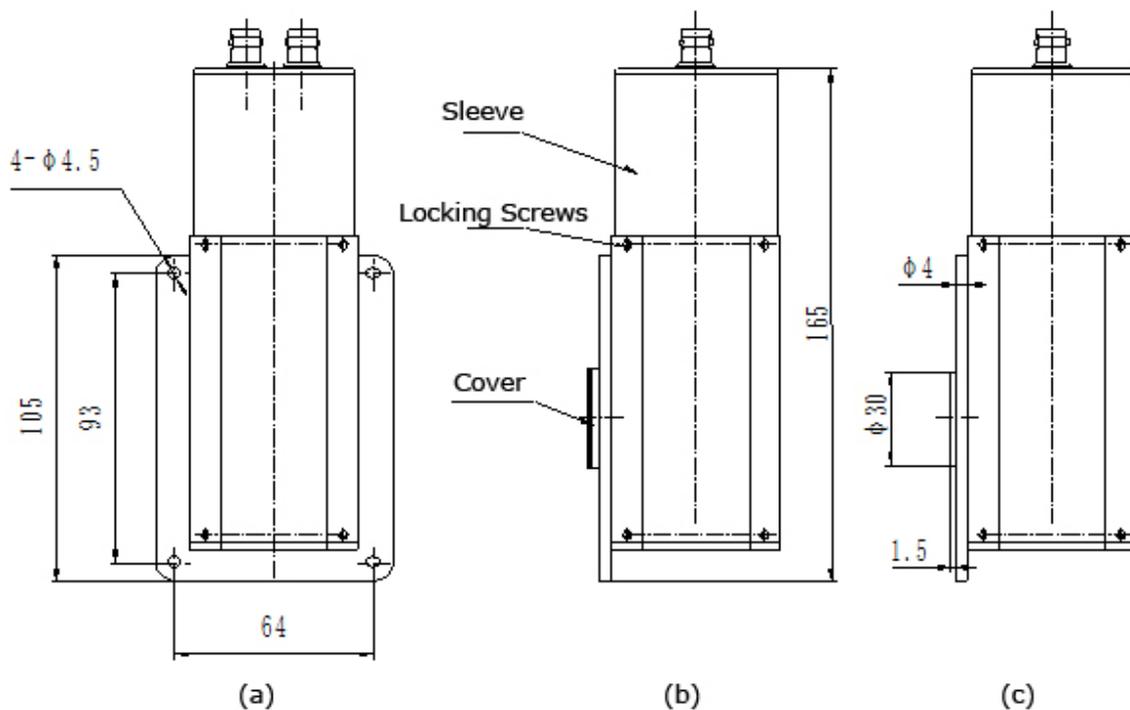


Figure 1 Appearance and connection dimensions

Figure 1-(c) is the picture of actual use without the protective cover. Please take off the protective cover before use, and then use four screws to connect the detector directly with the outlet of our company's 7IMS series monochromator or 7ISW series spectrometer, or directly connect with other equipment.

Steps for the installation or replacement of multiplier tube:

- 1) Unscrew the four set screws and pull out the sleeve.
- 2) Connect the photomultiplier tube socket to the sleeve and insert firmly the photomultiplier tube.
- 3) Insert the sleeve top-down and pay attention to the rotating direction. Make the receiving surface of photomultiplier tube and the open of tube chamber of in the same direction, then fasten the set screws.

### 3. Distinction between the high voltage line and the signal line

Because the white insulation of high voltage line plug needs to bear the high voltage, the white insulation sleeve of the high voltage line is a little taller than the insulation sleeve of the signal line wants.

Please see the right picture. The left one is the high voltage plug, and the right one is the signal plug.



The high voltage and signal socket on the photomultiplier tube chamber can be distinguished in the same way, the one with the higher white insulation sleeve is the high voltage socket, and the other one is the signal socket.

Please connect the high voltage line with the high voltage socket, and the signal line with the signal socket.

### 4. Specifications

Model	7ID101-CR131	7ID101-1P28
Wavelength Range	185-900nm	185-650nm

Peak Wavelength	400nm	340nm
Peak Responsivity	74mA/W	48mA/W
Active Area	8mm x 24mm	
Current Amplification	$6 \times 10^6$	$1 \times 10^7$
Dark Current	$3 \times 10^{-9}A$	$5 \times 10^{-9}A$
Rise Time	2.2ns	2.2ns
Transit Time	22ns	22ns
Bias Voltage	1250V	1250V
Weight	0.77kg	
Compatible Power Supply	7IP1250 / 7IP1500A	

## 5. Cautions

1. The photomultiplier tube often uses high voltage of 1000 volts, so please pay attention to the safety. Please connect the high voltage cable to the high voltage socket and the signal cable to the signal socket to avoid high voltage danger.
2. The photomultiplier tube should be protected when using, and try to avoid direct light detection surface to burn the cathode when storing. So, it is best to use the protection cover when it's not used. Under the condition of high voltage, it is strictly forbidden to expose the pipe to the light to avoid burning out.
3. When using the photomultiplier tube chamber, please keep one end of the wire facing up to avoid bad contact caused by long-term bending of the wire.