

WIDE DYNAMIC RANGE PHOTOMULTIPLIER TUBE UNIT

This unit is capable of measuring light levels at one time over a wide dynamic range up to 8 orders of magnitude. This wide dynamic range is achieved by simultaneously extracting a digital output (single photon counting) for detecting very-low-level light and an analog output for detecting low light levels visible to the human eye.

FEATURES

- **Swift continuous measurement over a wide dynamic range**
Up until now, measurement of light requiring a wide dynamic range has used two separate measurement methods: one for lower light levels and one for higher light levels.
- **Easy-to-use data acquisition unit**
Single photon counting output and analog output of the wide dynamic range PMT module are transferred to a PC via USB connection, and the two types of signals are synthesized into one by the supplied software.



Left: H13126, Right: C12918 series

SPECIFICATIONS

Wide dynamic range photomultiplier tube module H13126

Parameter		Description / Value	Unit
Effective area		$\phi 22$	mm
Spectral response		300 to 650	nm
Peak wavelength		375	nm
Photon counting	Output signal	C-MOS positive logic (Pulse output)	—
	Pulse pair resolution	16	ns
	Dark count [Ⓐ]	Below 100	s ⁻¹
Analog (Amplifier output)	Bandwidth (-3 dB)	DC to 50 / DC to 500 [Ⓑ]	kHz
	Count-to-analog conversion factor	1 V / 5×10^8 s ⁻¹	—
	Output voltage (Load resistance 1 k Ω)	0 to +10	V
	Output impedance	50	Ω
Input voltage		± 15	V
Max. input current		+150 / -25	mA
Operating ambient temperature		+5 to +40	$^{\circ}\text{C}$
Weight		400	g

[Ⓐ]After 3 hour storage in darkness [Ⓑ]Excluding projecting parts

Data acquisition unit C12918 series

Parameter		Description / Value	Unit
Counter	Signal input level	C-MOS positive logic (Pulse input)	—
	Gate time	1 μs / 10 μs	—
	Input impedance	50	Ω
	Minimum pulse width	8	ns
	Counter length	8 bit / Gate	—
AD converter	Signal input range	0 to +10 (Analog input)	V
	Sampling rate	100 kHz / 1 MHz	—
	Resolution	16	bit
	Input impedance	1	k Ω
Trigger	Trigger method	Internal trigger / External trigger	—
	External trigger signal	TTL negative logic	—
Interface		USB 1.1	—
Compatible OS		Windows [®] 10 Pro / 11 Pro	—
Input voltage		AC 100 to AC 240	V
Operating ambient temperature		+5 to +45	$^{\circ}\text{C}$
Weight		250 (Main body only)	g

WIDE DYNAMIC RANGE PHOTOMULTIPLIER TUBE UNIT

Figure 1: Typical spectral response

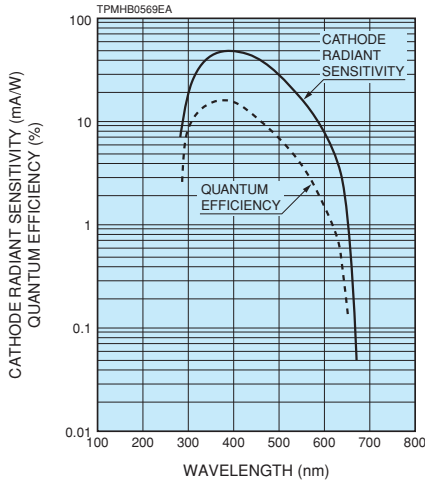


Figure 2: Measurement example

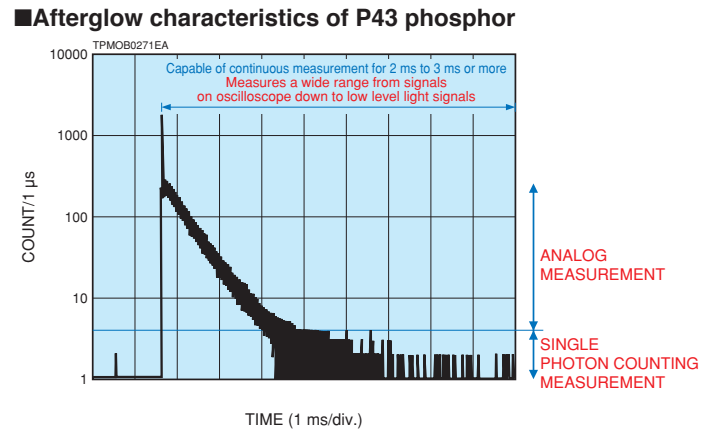


Figure 3: Block diagram

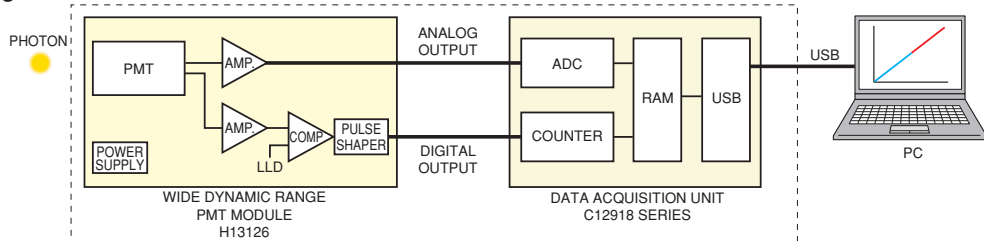
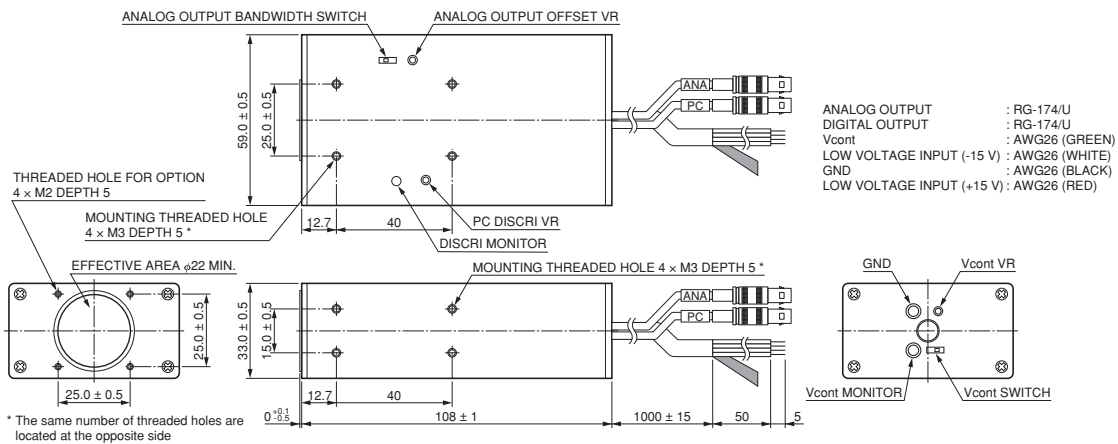


Figure 4: Dimensional outline (Unit: mm)

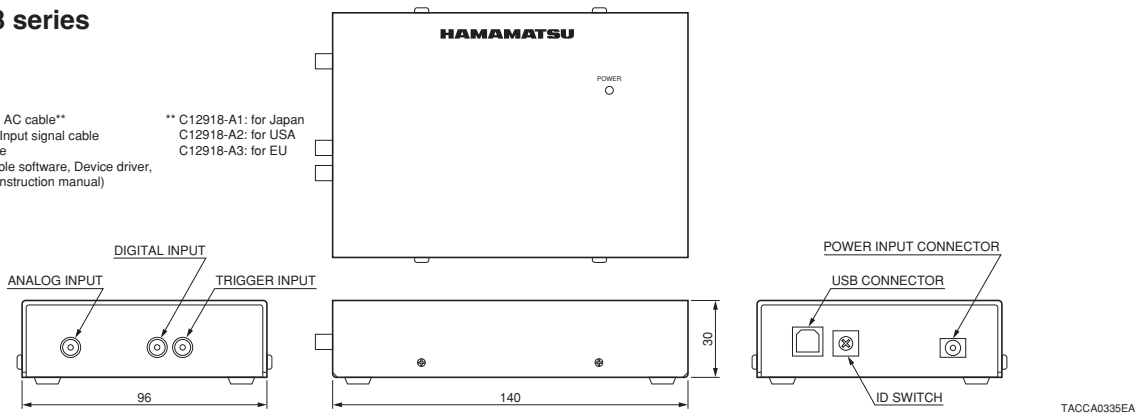
● H13126



● C12918 series

- Supplied AC adapter, AC cable**
- USB cable, Input signal cable
- Trigger cable
- CD-R (Sample software, Device driver, Containing instruction manual)

** C12918-A1: for Japan
C12918-A2: for USA
C12918-A3: for EU



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