

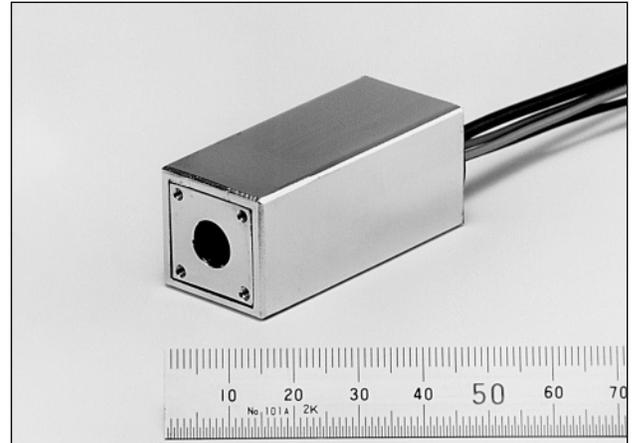
**PRELIMINARY**

# UV LASER SENSOR MODULE

## H8496, H8497 series

### OVER VIEW

UV Laser Sensor Modules provide high sensitivity in the VUV to UV region. Excellent solar blind characteristics eliminate the need for visual cut-off filters, thus extending the service life of the module. The phototube is assembled in a compact, easy-to-use TO-8 style package, along with a high voltage power supply that operates by low voltage input. The H8497 further incorporates an amplifier for voltage output.



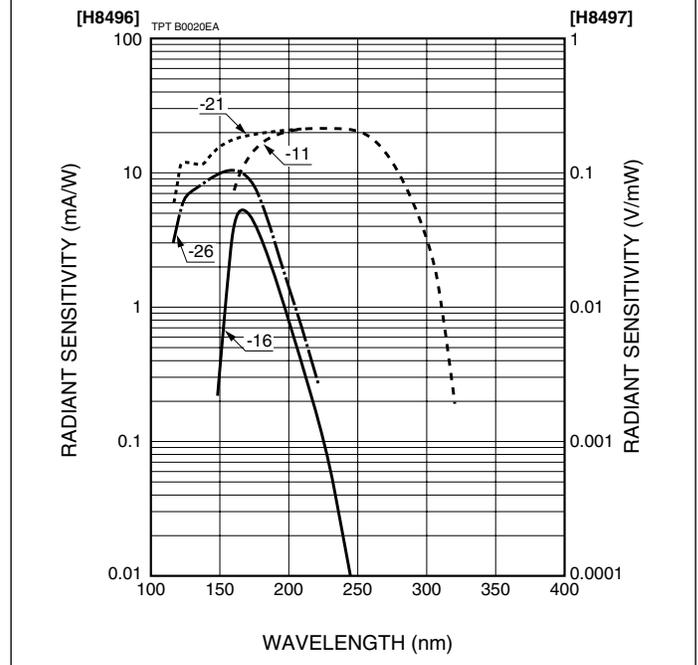
### FEATURES

- Solar Blind
- Compact
- Low Voltage Operation
- High Sensitivity in VUV Range
- High Speed Response
- High Stability

### APPLICATIONS

- UV Laser Monitor
  - Excimer laser
  - YAG laser (4  $\omega$ : 266 nm, 5  $\omega$ : 213 nm)
- Excimer Lamp Monitor
- Mercury Lamp Monitor

### Spectral Response



**HAMAMATSU**

# SELECTION GUIDE

## ●GENERAL

Parameter		-11	-16	-21	-26	Unit
Spectral Response		160 to 320	160 to 220	115 to 320	115 to 220	nm
Wavelength of Maximum Response		200	170	200	160	nm
Photocathode	Material	Cs-Te	Diamond	Cs-Te	Diamond	—
	Minimum Effective Area	φ8	φ6	φ8	φ6	mm
Window Material		Synthetic silica	Synthetic silica	MgF <sub>2</sub>	MgF <sub>2</sub>	—
Weight		Approx. 75				g

●H8496 series ..... Current output type (without an amplifier)

H8497 series ..... Voltage output type (with an amplifier)

# MAXIMUM RATINGS (Absolute Maximum Values)

## ●H8496

Parameter		-11	-16	-21	-26	Unit
Supply Voltage		+16				V dc
Peak Output Current		60				mA
Average Output Current		40				μA
Excimer Laser Measurement Range F <sub>2</sub> Laser <sup>(A)</sup>	Peak Power	—	—	3.3	6	W
	Pulse Energy	—	—	33	60	nJ
Ambient Temperature	Operating	+5 to +40				°C
	Storage	-20 to +50				°C

NOTE: (A) Wavelength: 157 nm, Pulse width: 10 ns, Frequency: 1 kHz

## ●H8497

Parameter		-11	-16	-21	-26	Unit
Supply Voltage		±16				V dc
Peak Output Voltage <sup>(B)</sup>		5				V
Average Output Voltage <sup>(C)</sup>		0.4				V
Ambient Temperature	Operating	+5 to +40				°C
	Storage	-20 to +50				°C

NOTE: (B) At input light pulse width: 800 ns

(C) CW light input

# SPECIFICATIONS

## ●H8496

Parameter		-11	-16	-21	-26	Unit
Radiant Sensitivity <sup>(D)</sup> (Typ.)		22	5	22	10	mA/W
Rise Time		450				ps
Dark Current (Max.)		10				pA
Output Signal Polarity		positive				—
Recommended Operating Voltage		+11.5 to +15.5				V

NOTE: (D) At maximum response wavelength

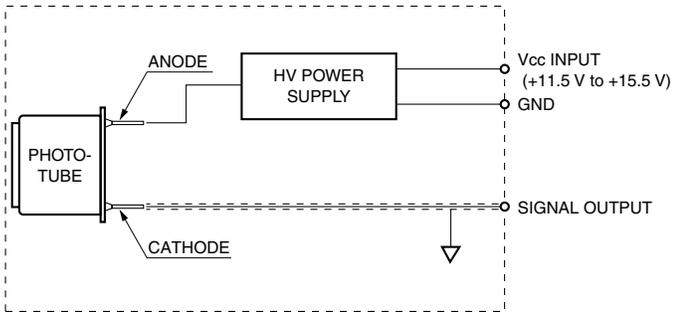
## ●H8497

Parameter		-11	-16	-21	-26	Unit
Radiant Sensitivity <sup>(E)</sup> (Typ.)		0.22	0.05	0.22	0.10	V/mW
Offset Voltage (Max.)		10				mV
Current Voltage Conversion Factor		0.01				V/μA
Frequency Bandwidth		0 to 1 MHz				—
Output Signal Polarity		positive				—
Recommended Operating Voltage		±11.5 to ±15.5				V

NOTE: (E) At maximum response wavelength and CW light input

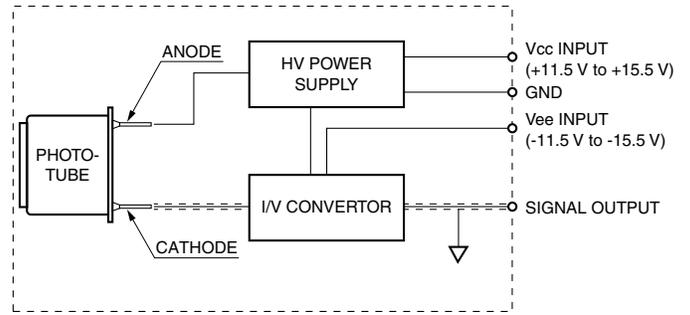
# INTERNAL DIAGRAM

## ●H8496



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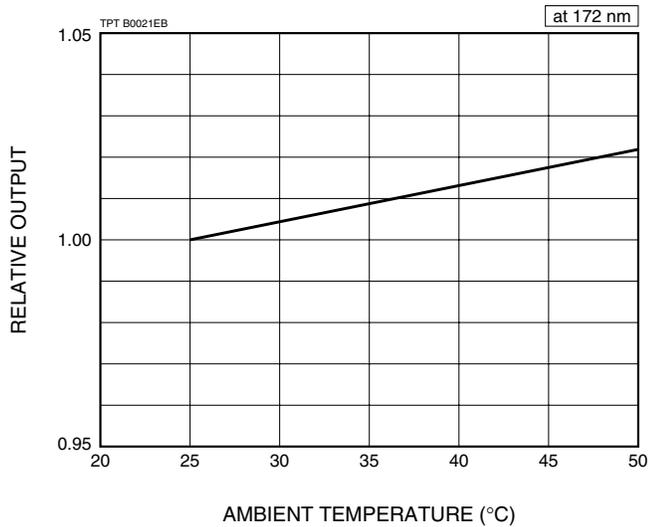
## ●H8497



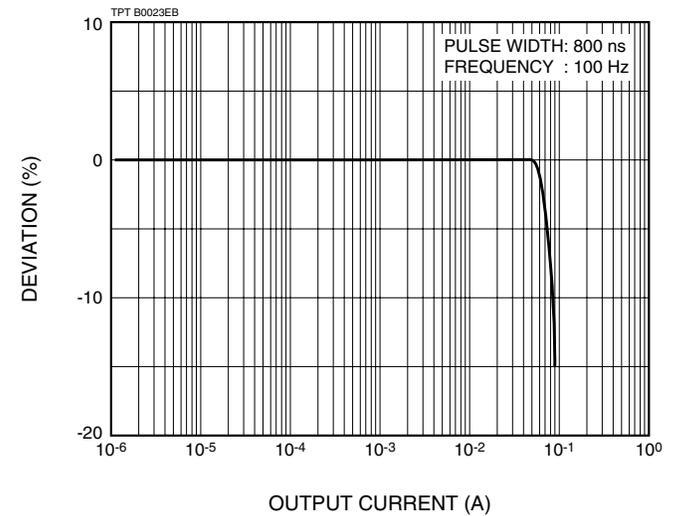
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# CHARACTERISTICS

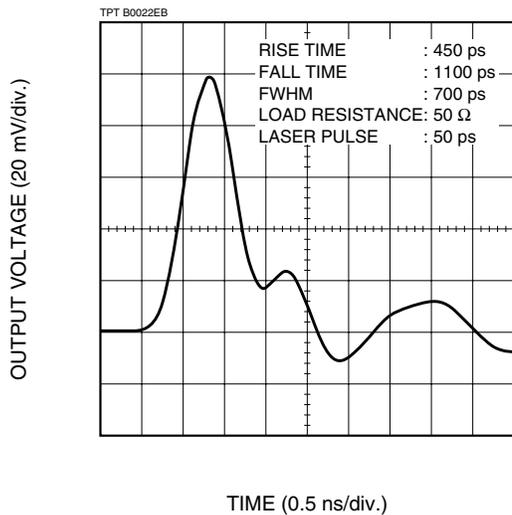
## ●Temperature Characteristics (Diamond Photocathode)



## ●Pulse Linearity (H8496)

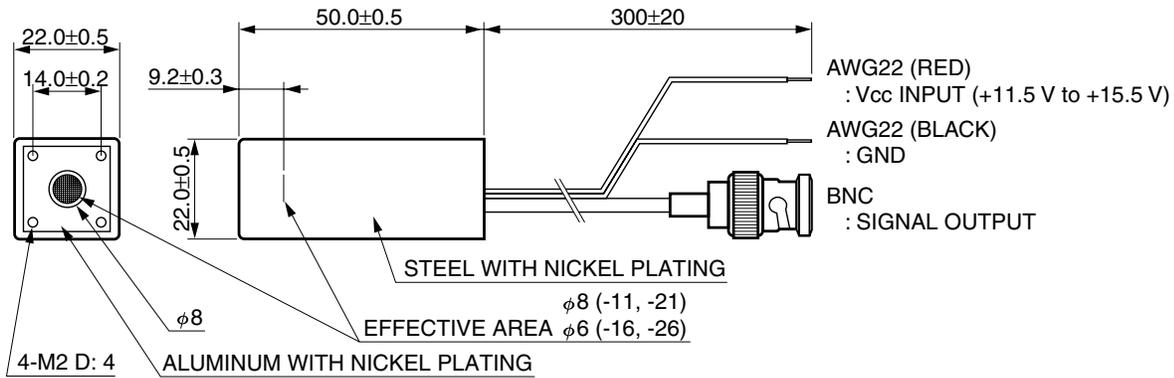


## ●Output Waveform (H8496)



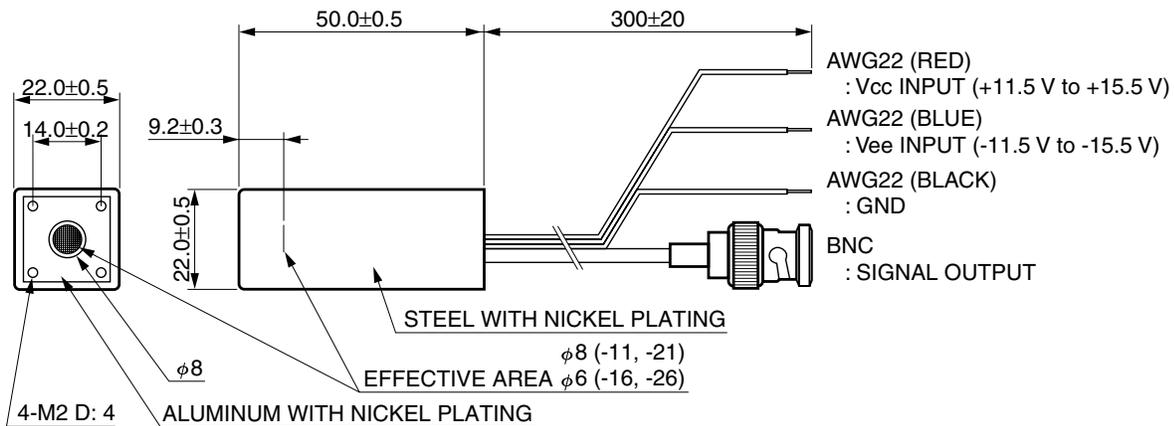
# DIMENSIONAL OUTLINE (Unit: mm)

H8496



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H8497



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## Handling precautions

- Operate below  $10^{-1}$  Pa condition or under atmospheric pressure.
- Protect wires from UV light. UV light will degrade wires.

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