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HOW TO SELECT UV SENSOR

Choose the Right UV Measurement for Your Specific Needs

UV PHOTODIODE

UV SENSOR PROBE

UV RADIOMETER

Genicom Co., Ltd. is one of leading manufacturers in the field of UV sensor for various applications.

We have manufactured and supplied an UV sensor based on AlGaN materials in the environment of ISO 9001, ISO 14001, and QS 9000. We have focused on every aspect of R&D and production of UV sensor. Furthermore, we are doing our best to support the practical technologies relating to UV sensor application such as UV Index monitoring, UV-lamp & UV-LED monitoring, Flame/Fire detection, UV absorption Spectroscopy, etc.

Our goal is one of the most companies in the field of sensor for human and environments. We are developing our future products including the special sensors for gas, chemical and bio application by adding new technologies like as MEMS, nano-scale materials. We are and will be best partner to support your success.

As a professional UV sensor manufacturer, we incorporate new technologies such as MEMS and nano-scale materials. These give rise to industry-leading products such as UV sensors with no required cut-off filters. Our specialty lies in GaN / AlGaN-based sensors with unique features to suit a range of applications from UV index monitoring and flame detection to UV absorption spectroscopy and UV curing.

Recently, we have developed and launched UV radiometer with high accuracy and low price. This product can be widely used for UV sterilization (Water/Air) and UV curing in order to monitor the UV intensity and the life of UV lamp.

COMPANY HISTORY

2017 - Oct. Development New multi Portable UV Radiometer
2016 - Oct. Development 180° Wide-Angle UV Radiometer (No Power Supply)
2015 - Oct. Development Digital UV Sensor (UV Index)
2014 - Oct. Transfer to New Factory (273, Baeul 1-ro, Yuseong-gu, Deajeon, Korea)
2013 - Oct. Biz with Microsoft
- Sep. Biz with Maxim integrated
2012 - Nov. Joint Development of UV LED launch with ETRI
- Jun. EUREKA Project launch with the Czech, German Companies
2010 - Jun. Supply of UV Sensor to China mobile Company
- May. Supply of UV Sensor to Samsung Electronics
2009 - Sep. Development portable UV radiometer (CE Certificate)
- Mar. Development of AlGaN-based Filter
2008 - Dec. Development of UVC Probe
- Jan. Capital Investment from KDB
2007 - Dec. Development of UV Radiometer (CE Certificate)
- May. Acquisition of CE Certificate (Outdoor UVI Meter)
2006 - May. Development of InGaN-based UVA Sensor
- Feb. Acquisition of ISO14001 Certificate
2005 - Oct. Development of AlGaN-based UVC Sensor
- May. Supply of UV Sensor to Agilent
2004 - Nov. Acquisition of ISO9001 Certificate
- May. Initiation of Sensor Business
2000 - Jul. Establishment

UV Sensor General

UV Wavelength

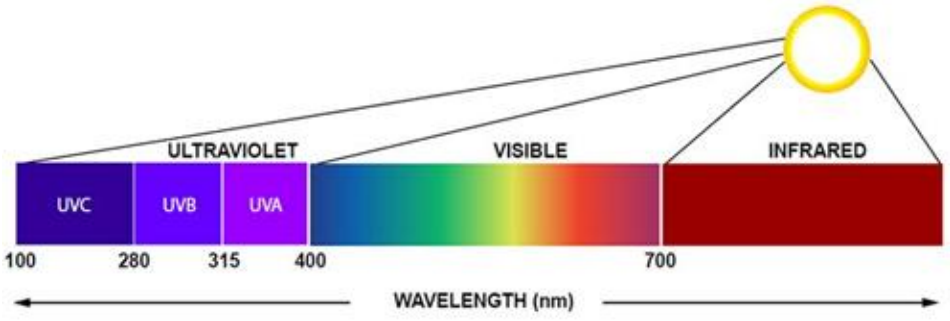
Definition

UV - **A** (315~400nm)

UV - **B** (280~315nm)

UV - **C** (200~280nm)

Visible (400~700nm)

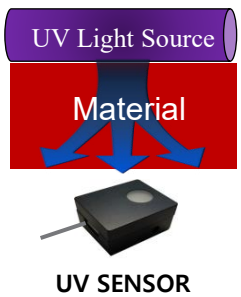


• **Application of Genicom UV Range**

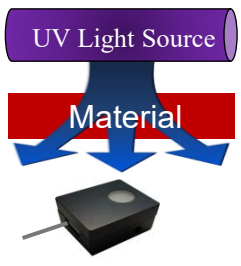
UVV	UVA	UVB	UVC	VISIBLE
230~395nm	230~370nm	220~320nm	220~280nm	300~510nm
•UV Curing •UV Exposure •UV LED Monitoring •UV Lamp Monitoring	•UV Exposure •UV LED Monitoring •UV Lampe Monitoring •UV INDEX Monitoring	•Air Purification •Water Treatment •Ballast Water •Flame Sensing •UV LED, Lamp Monitoring	•UV Curing •3D Printer •UV LED, Lamp Monitoring	

• **Measurement Type of UV Sensor**

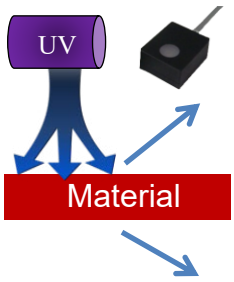
➢ **Direct**



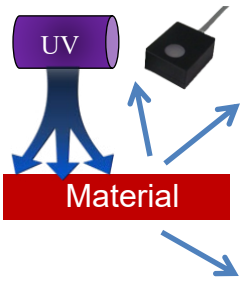
➢ **Transmittance**



➢ **Reflectance**



➢ **Luminescence**



* UV Light Source : LAMP, LED, etc.
* Material : Air, Water (Gas, Solid, Liquid)

UV Sensor Product line

UV Photodiodes

Category		Visible		UVV				UVA						UVB						UVC				Digital	
Wavelength (nm)		Blue	~470	~ 395				~370						~320						~280				~370	~320
		Green	~510																						
Product Image																									
PKG Type		SMD	TO	SMD	TO	TO	TO	COB	SMD	SMD	TO	TO	TO	COB	SMD	SMD	TO	TO	TO	SMD	TO	TO	TO	COB	COB
		3528	46	3528	46	39	5	2418	3535	3528	46	39	5	2418	3535	3528	46	39	5	3535	46	39	5	2023	2023
Chip Size/ Active Area (㎟)	0.23 / 0.0162	Small	Small																					Small	Small
	0.4 / 0.076			STD.	STD.		STD.	STD.	STD.	STD.	STD.		STD.	STD.	STD.	STD.	STD.		STD.	STD.	STD.		STD.		
	1.4 / 1.536				Large						Large						Large				Large				
	3.4 / 6.894					Ultra						Ultra						Ultra				Ultra			
Responsivity	Peak (nm)	Blue: 405 Green: 385		355				360						305						265				355	305
Application	Wearable UV Index							O		O				O		O								O	O
	UV Index							O		O				O		O	O	O	O					O	O
	UV Curing			O	O	O	O		O		O	O	O		O										
	Sterilization										O		O							O	O	O	O		
Output	Current	nA	nA	nA	nA	μA		nA	nA	nA	nA	μA		nA	nA	nA	nA	μA		nA	nA	μA			
	Voltage						V						V						V				V		
	Digital																							0-11+	0-11+
Optical Source Power range	Min(μW/㎠)	0.1	0.1	0.1	0.1 0.01	0.001	0.1	0.1	0.1	0.1	0.1 0.01	0.001	0.1	1	0.1	1	0.1 0.01	0.001	0.1	0.1 0.01	0.1 0.01	0.001	0.1	Sunlight	
	Max(㎽/㎠)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		
Angle of Incidence(˚)		100	60	100	60	60	60	120	150	100	60	60	60	120	150	100	60	60	60	150	60	60	60	120	120

Sensor Probe & Radiometer

Application (environment)		Air Treatment / UV Curing					Water Treatment									Temperature & UV		UV Index / Irradiance	
Product Image																			
Series Name		LA2	LA5	LA6	LA8	LO	LW5	LW5.1	LW5.2	LW8.1	LW9	LW10	LW11	DVGW		TLW5	TLW10	H3	H6
Feature		General	Separable cable	Adjustable output	High UV intensity	High temp (200℃)	Small	o-ring	High pressure	Proximity	Submerge	General	4 Direction	Window Tube	Sensor Shaft	Small	General	outdoor	Wide angle
Supply Voltage	5V	O	O	O	O	O	O	O	O		O	O	O					O	N/A
	9~24V	O	O	O	O	O	O	O	O	O		O	O	O	O	O	O	O	N/A
Output	0~5V	O	O	O	O	O	O	O	O		O	O	O			O	O	O	O
	4~20mA					O	O	O	O	O		O	O	O	O			O	
Size	Thread/ Length (mm)						PT1/4", 12	PF1/4", 12	PT3/4", 11	NPT1/2", 12	PT3/4", 11	PT3/4", 16	PT 1¼", 21	G1", 34		PT1/4", 12	PT3/4", 16		
	Angle(˚)	60	60	60	60	20	30	30	30	30	30	30	360	40		30	30	100	180

Application		Portable UV Radiometer					UV Monitoring Radiometer (Stationary)									UV Index Indicator		Smart UVI (mobile)	
Product Image																			
Series Name		MG07			MG07.1-LA9		AC02	MG01	MG02			MG04	MG05	MG05.1	MG06	AG03.3	AG03.4	LM01	LM02
Feature		Total UV	UVC	UV Index	Probe separable		UVC Meter	Power selection	General	Current	RS485 [VC]	3 CH LED	General	RS485 Dose disp.	Mini size	Basic	Solar power	UV Index Checker	UV Index Meter
Supply Voltage	DC	9V Battary					DC 5V or 12V	9V								12V	12V	N/A	N/A
	AC							86~230V AC 220V	100 ~ 240V			200 ~ 240V	85 ~ 265V		85 ~ 265V	90 ~ 264V	N/A		
Output	Relay						O		O			O	O		O				
	Voltage					O		0~5	0~5		0~5		1~5						
	Current							4~20		4~20	4~20	4~20	4~20		4~20				
Display	Absolute Power (㎽/㎠)	㎽/㎠	㎽/㎠		A.P (㎽/㎠) Dose (J/cm2) Max Power *LA9-H (Max.10W/㎠)		㎽/㎠	㎽/㎠	㎽/㎠	㎽/㎠	㎽/㎠	㎽/㎠	㎽/㎠	+ mJ/cm2, Max Power					
	Relative Power (%)						%	%				%	%		%				
	Accumulative Time						min	min				hr	hr		hr				
	RS485										O			O					
	UV Index			0~11+												0~11+	0~11+	0~11+	0~11+
Probe Type	LA Series				Voltage output only			LAx	LAx			LAx	LAx	LAx	LAx				
	LW Series							LW5, LW10	LW5, LW6, LW8, LW9, LW10, LW11			LW5, LW10	LW5, LW9, LW10, LW11		LW5, LW10				
	LO Series							LO	LO			LO	LO		LO				

UV Sensor Probe (LA / LO Series)

Genuine UV Technology genUV

Description

Sensor Cable : Standard length of connection cable 5m. Custom order extend length Max. 10m(Vout).
Measuring light intensity range can be changed according to customer's request. (Ex. 10, 1000㎽/㎠)

Detection Range along UV Sensor

Model No.	Detection Range	Model No.	Detection Range
GUVV-T10GC-xLxx	230 ~ 395 ㎚	GUVB-T11GC-xLxx	220 ~ 320 ㎚
GUVA-T11GC-xLxx	220 ~ 370 ㎚	GUVC-T10GC-xLxx	220 ~ 280 ㎚

Specifications

Supply Voltage [Vcc]	Output	Operating Temperature	Working humidy
5 VDC or 9~24 VDC	0 ~ 5 VDC or 4 ~ 20 ㎃	-30~85℃	35~85 %RH

LA & LO Series (Air Environment, AL-60)

Feature	Name	Size (W x H x D)	Window (㎜)	Picture	Power	Output	Max. Power
General	LA2	55 × 30 × 16 ㎣	12		9~24 VDC	0~5 VDC	100 ㎽/㎠
Small size, Separable Cable	LA5	36 × 30 × 16 ㎣	12		5 VDC	0~5 VDC	100 ㎽/㎠
Adjustable output Gain	LA6	36 x 30 x 19 ㎣	12		5VDC 9~26VDC (Option)	0~5 VDC	100 ㎽/㎠
High Intensity UV LED (20W)	LA8	36 x 30 x 21 ㎣	12		9~24 VDC	0~5 VDC	10,000 ㎽/㎠
Portable Meter Sensor Probe	LA9	Ø35 x 20h	9		Connect with Portable meter(MG-07)		100 ㎽/㎠
High Temperature ~ 200℃	LO1	Diameter : 20 ㎜ Total Length : 56 ㎜ Optical fiber: 1 m (L)	1		9~24 VDC	0~5 VDC	1,000 ㎽/㎠

Connection Cable & Connector Type

LA2, LA9 (assembled)

LA5, LA6, LA8

LO (M12 5PIN General)

Connector (PCB, CABLE)

'L' Angled

'I' shaped

UV Sensor Probe (LW Series)

Description

Sensor Cable : Standard length of connection cable 5m. Custom order extend length Max. 10m(Vout).
Measuring light intensity range can be changed according to customer's request. (Ex. 10, 1000㎽/㎠)

Specifications

Supply Voltage [Vcc]	Output	Operating Temperature	Working humidy
5 VDC or 9~24 VDC	0 ~ 5 VDC or 4 ~ 20 ㎃	-30~85℃	35~85 %RH

LW Series (Water Environment, STS 316-L, IP68, 10~20bar)

Feature	Name	Thread/Length for Mounting	Diameter (㎜)	Window (㎜)	Length (㎜)	Power (V)	Output	Max. Power
Small	LW5.0	PT 1/4", 12 ㎜	21	7	63	9~24 VDC	4~20 ㎃	100 ㎽/㎠
o-ring	LW5.1	FT 1/4", 12 ㎜	21	7	63	9~24 VDC	4~20 ㎃	100 ㎽/㎠
High pressure <20bar	LW5.2-M	PT 3/4", 11 ㎜	21	7	71	9~24 VDC	0~5 VDC	100 ㎽/㎠
	LW5.2-G	PT 3/4", 11 ㎜	21	7	67	9~24 VDC	0~5 VDC	100 ㎽/㎠
Vicinity	LW8.1	NPT 1/2", 12 ㎜	14	10	67	9~24 VDC	4~20 ㎃	100 ㎽/㎠
Submerge	LW9	NPT 3/4", 11 ㎜	23	12	41.5	5 VDC	0~5 VDC	20 ㎽/㎠
General	LW10	PT 3/4", 16 ㎜	30	7	62	9~24 VDC	0~5 VDC	100 ㎽/㎠
4-direction	LW11	PT 1¼", 21 ㎜	42	24	81	9~24 VDC	0~5 VDC	100 ㎽/㎠
Window tube	DVGW	G1", 34 ㎜	32	24	94	9~24 VDC	4~20 ㎃	1,000 ㎽/㎠
Sensor Shaft			20	16	83			
Temperature & UV	TLW10	PT 3/4", 16 ㎜	30	7	62	9~24 VDC	0~5 VDC	100 ㎽/㎠
	TLW5	PT 1/4", 12 ㎜	21	7	63	9~24 VDC	0~5 VDC	100 ㎽/㎠

LW5.0 LW5.1 LW5.2-M LW5.2-G LW8.1 LW9

LW10 LW11 DVGW TLW10 TLW5

Connection Cable & Connector type (IP67, IP68 grade)

'L' Angled

'I' shaped

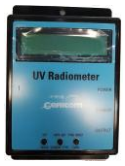
General Type (M12 5Pin)
LW5, LW5.1, LW5.2-M, LW8.1, LW10, TLW10, TLW5

Special Type
LW11(3Pin) DVGW LW9, LW5.2-G (IP68, waterproof <1m)

UV Monitoring Radiometer (GUVD-MG0xS)

Description

Power cable and output cable (4-20 ㎃ current output, 1-5V voltage output, relay) are not supplied.

Picture	Function & Display	Output	Probe Type
Product Number	Fixing method & Size	Power	Field of Use
	Absolute Power (㎼/㎠) Relative Power (%) Accumulative Time (hr)	Relay (NO/NC) 1~5 VDC, 4~20 ㎃ (Depends on Relative Power)	LA2, LA5, LA6, LA8, LA9, LO1 LW5, LW9, LW10, LW11 (Only Voltage output)
GUVD-MG05S **(General)**	Panel Insertion 96 × 48 ×112 ㎜³	AC 85~265V (50/60Hz)	Water environment Air, Curing equipment
	Absolute Power (㎼/㎠) Relative Power (%) Accumulative Time (hr) Dose display (mJ/cm2) Max power, RS485	Relay (NO/NC) 1~5 VDC, 4~20 ㎃ (Depends on Relative Power)	LA2, LA5, LA6, LA8, LA9, LO1 LW5, LW9, LW10, LW11 (Only Voltage output)
GUVD-MG05S.1 **(General2)**	Panel Insertion 96 × 48 ×112 ㎜³	AC 85~265V (50/60Hz)	Air, Curing equipment
	Absolute Power (㎽/㎠) Relative Power (%) Cumulative Time (min)	Relay (NO/NC)	AC02 (Only Voltage output)
GUVC-T11GS0-AC02 **(UVC Radiometer)**	2 Fixing Hole 138 × 79× 30 ㎜³	DC 9~24V *5V only(option)	Air Disinfection environment
	Absolute Power (㎽/㎠) Relative Power (%) Cumulative Time (min)	0~5 VDC, 4~20 ㎃ (Depends on Absolute Power)	LA2, LA5, LA6, LA8, LA9, LO1 LW5, LW9, LW10, LW11 (Only Voltage output)
GUVD-MG01S **(Power Selection)**	2 Fixing Hole 137 × 88 × 30 ㎜³	DC 9V 300㎃ Adaptor (AC220V 50/60 Hz)	Water environment Air, Curing equipment
	Absolute Power (㎽/㎠)	Relay (NO/NC) 4~20 mA (Option) (Option) RS485 Comm.	LA2, LA5, LA6, LA8, LA9, LO1 LW5, LW8, LW9, LW10, LW11, DVGW (Voltage or Current output)
GUVD-MG02S **(Current & RS485)**	Panel Insertion 96 × 48 × 108 ㎜³	AC 100~240V (50/60Hz)	Air, Curing equipment

Specifications

Operating Temperature	Working Humidity
0~50℃	35~85 %RH

UV Monitoring Radiometer (GUVD-MG0xS)

Description

Power cable and output cable (4-20 ㎃ current output, 1-5V voltage output, relay) are not supplied.

Picture	Function & Display	Output	Probe Type
Product Number	**Fixing method & Size**	**Power**	**Field of Use**
	Absolute Power (㎽/㎠) Relative Power (%) Accumulative Time (hr) (3 Color LED)	Relay (NO/NC) 4-20 mA	LA2, LA5, LA6, LA8, LA9, LO1 LW5, LW9, LW10, LW11 (Only Voltage output) *Connect with 3 Sensors
GUVD-MG04S **(3 Channel)**	Panel Insertion 96 × 96 × 111 ㎜³	AC 200-240V (50/60Hz)	Air, Curing equipment
	Relative Power (%) Accumulative Time (hr)	Relay 4-20 mA	LA2, LA5, LA6, LA8, LA9, LO1 LW5, LW9, LW10, LW11 (Only Voltage output)
GUVD-MG06S **(Mini)**	Panel Insertion 48 × 48 × 107 ㎜³	AC 85-265V (50/60Hz)	Water environment
	(option) 1. Absolute Power (㎽/㎠) 2. UV Index (0~11+)	(option) 1. Integrated Sensor 2. LA9 (separated)	LA9, LA9-H(Max.10W/㎠) (Only Voltage output)
GUVD-MG07S **(Portable)**	Handheld 135 x 70 x 25 ㎜³	DC 9V Battery	Air environment
	Absolute Power (㎽/㎠) Dose display (J/cm2) Max power	LA9 (separated)	LA9, LA9-H(Max.10W/㎠) (Only Voltage output)
GUVD-MG07S.1 **(Multi-Portable)**	Handheld 135 x 70 x 25 ㎜³	DC 9V Battery	Air environment

✓ **Radiometer User Manual**

✓ **General Sensor and Radiometer**

✓ **Instruction Video** click

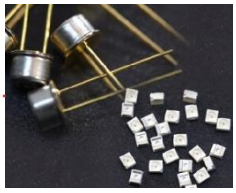
MG02 & LW10 Probe

MG05 & LA5 Probe

MG04 & LW5 Probe

MG01 & LA2 Probe

✓ Component



UV Photodiode

UV Radiometer
(Indicator)

UV Sensor probe
(UV Intensity Detector)

Connection Cable
(5 meter - extendable)

Options

Data Logger

Reference Meter

✓ Check your Installation conditions

1. User environment ?
   – Air or Water
   – Indoor or Outdoor
2. Optical power of UV Source(Lamp, LED etc.) ?
3. Distance of UV Source and Sensor ?
4. Operating Temperature ?
5. Output Type ?
   – Voltage (0~5V)
   – Current (4~20mA)

✓ Why Calibrate?

1. Typical recalibration is performed every 2 years
2. Balance the amount of UV the optics and detector “see” with the output signal from the detector
3. Compensate for changes in the optics over time
   – Solarization
4. Instruments used in harsh production & manufacturing environments
   – Irradiance levels: • Sunlight: +/- 20 mW/cm2
   • Production UV levels: 100’s to 1000’s mW/cm2
   – Physical damage to instrument : • Drop, crush instrument, scratch optics
   – Optics/instrument coated with ?
5. Electronics checkup
   – Physical and/or heat related damage
6. Calibration Service
   – Genicom self declaration (est. cost 100US$)
   – by KRISS / NIST Directly or Proxy (est. cost 700~800US$)