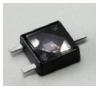
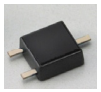
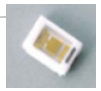
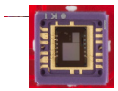
Comparision of UV Sensor

Output Value	Company	Products No.	Product Picture	Package Type Dimension	Material	Supply Voltage (V_{DD})	Responsivity	Range of spectral sensitivity	MSL level	Tolerance	Advantage	Weakness	UV index range
Analog Current	Hamamatsu Photonics	G6262		SMD type 4.0mm×4.0mm ×1.5mm	GaAsP	-	0.2A/W (λp)	280nm~580nm	-		- Low dark current	- Out of Spectral Range - Large size - High price	-
		G5842					0.06A/W (λp)	260nm~400nm	-				
	Kyosemi	KPDU31S1A-B1		SMD type 3.0mm×2.0mm ×1.25mm	AlGaN		60~80㎂/W [VR=0V, λ=300nm]	200nm~330nm	2a	±25%	- Spectral match(Good)	- High price - Error due to large tolerance	
		KPDU31S1A-Q1					60~75㎂/W [VR=0V, λ=300nm]						
		KPDU37S1-B1/Q1			GaN		0.09A/W [VR=0V, λ=λ_P]	360nm~400nm			-Spectral match(not good)		
	Genicom	**GUVA-S12SD**		SMD type 3.5mm×2.8mm ×1.9mm	GaN		0.14 A/W [VR=0V, λ=350nm]	240~370nm	3	**±10%**	**- Most implement mobile phone** **- Low price**		
		GUVA-C22SD		COB type 2.4mm×1.8mm ×0.95mm	GaN		0.14 A/W [VR=0V, λ=350nm]	240~370nm	**1**	**±10%**	**- Apply to MS band (smart watch)** **- Low price**		
Analog Voltage	LAPIS Semiconductors	ML8511		QFN (12-pin) 4.0mm×3.7mm ×0.73mm	Si	-0.3V~4.6V	-	UVA-315nm~400nm, UVB-280~315nm	2		- Embedded in Op-amp	- Low accuracy. - Low MSL level(bed reliability)	
Digital I2C	ST MicroElectronics	UVIS25		LGA (10-lead) 2.5mm×2.5mm ×0.76mm	Si	1.7V~3.6V	-	280nm~400nm	-		- As a digital output, easy to use.	- Low accuracy.	0~15
	Capella	CM3512		6 pin OPLGA, 2.35 x 1.8 x 1.0 mm	Si	2.7V~5.5V		280nm~400nm (20% of max. sensitivity)	3		- As a digital output, easy to use.	- Low accuracy. - Low MSL level(bed reliability)	
	SiliconLabs	Si1132 (Si114x)		QFN (10-lead) 2.0mm×2.0mm ×0.65mm	Si	1.71V~3.6V		VIS photodiode (370nm~950nm)	3~4		- As a digital output, easy to use.	- Low accuracy. - Low MSL level(bed reliability)	0~11
	Genicom	**GUVB-C31SM**		COB type (4-pin) 2.0mm×2.3mm ×1.4mm	AlGaN	2.2V~3.6V		240nm~320nm	**1**		- As a digital output, easy to use. **- High UVI accuracy.** **- High MSL level (Good reliability)**		0~16

* Like the reactivity graph as below, GaN based sensors curves are similar as Erythemal weighting Factor curves.

=> Si based sensor has a big gap as below so an error occurs when measure UV Index.

But GaN Base based sensor has a high accuracy when measure UV Index.

=>Genicom has a high accuracy UV Sensor based GaN Base among other digital sensors.

*It has very high MSL1level, has very good reliability.

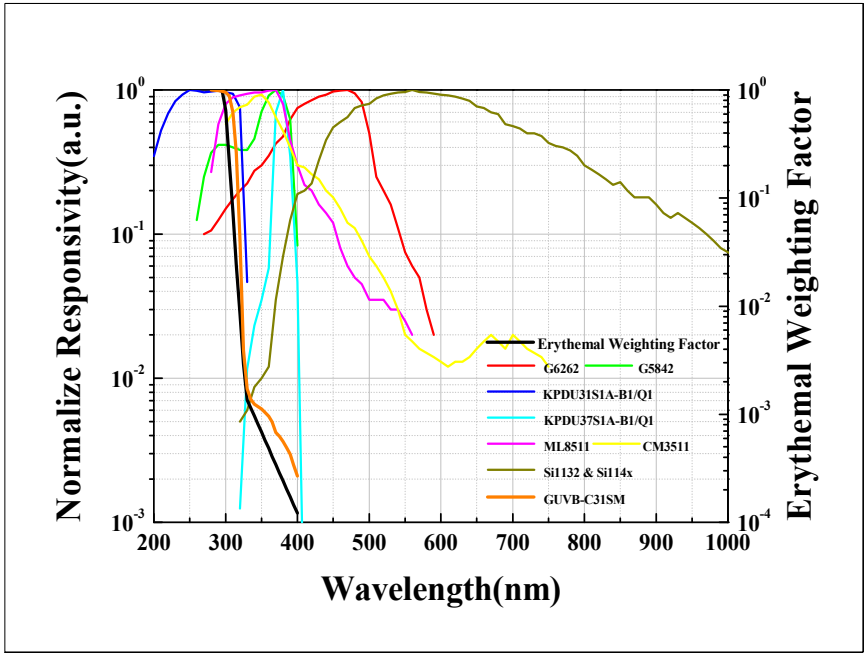


Fig 1. Responsivity of all Product(nomalize data)

* Genicom UV sensors(GUVB-C31SM) curves are similar as Erythemal weighting Factor curves.
* Si based sensor has a big gap as below so an error occurs when measure UV Index.

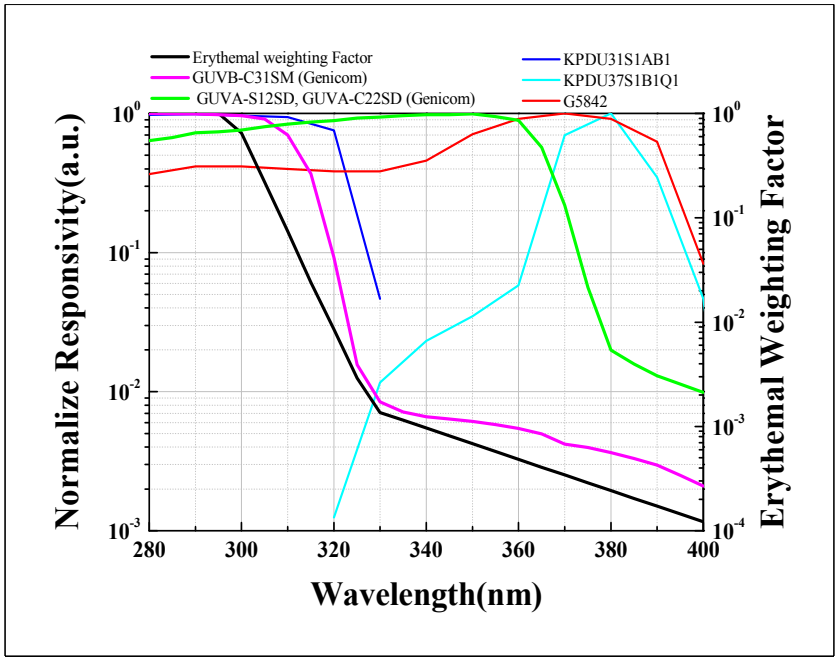


Fig 2. Responsivity of Genicom (GaN), Kyosimi(GaN), Hamamatsu(GaAsP) (nomalize data)

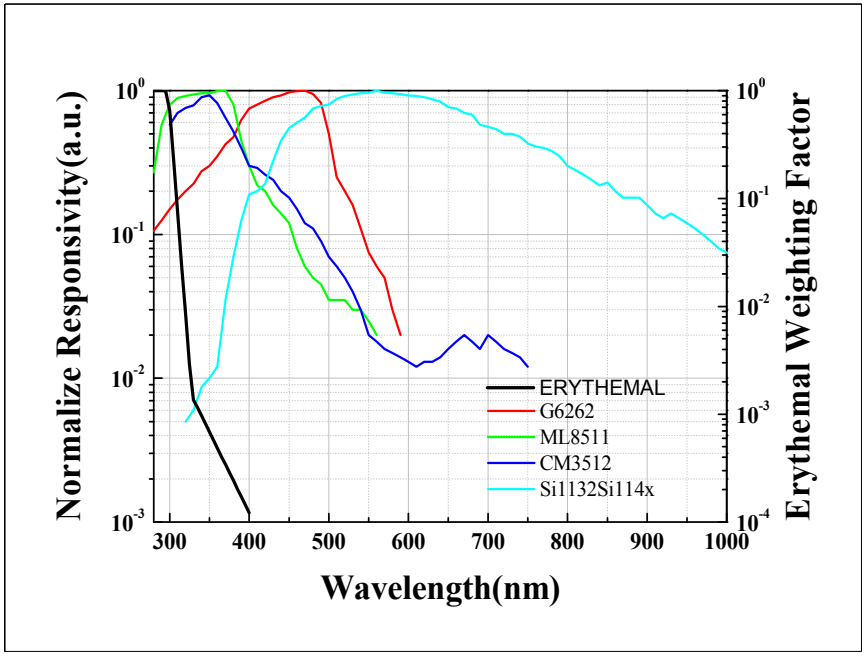


Fig 3. Responsivity of Si Based UVSensor (nomalize data)