F A Q

Genuine UV Technology
genuv

Subject : NEP / Bias Capacitance / Rise Time	**Date :**	**2016.**	**11.**	**30**

1. NEP (Noise Equivalent Power) of UV sensors

NEP is a measure of the sensitivity of an optical detector or detector system. It is defined as the signal power which gives a signal to noise ratio of 1 for an integration time of half a second,

or more technically the radiant power that produces a signal to noise ratio of unity at the output of a given optical detector at a given data-signaling rate or modulation frequency,

operating wavelength, and effective noise bandwidth. NEP using the following equation can be obtained.

$$\text{NEP} = (A \times B)^{1/2} / D^*, \quad D^* = R_\lambda \{(R_o \times A)/(4KT)\}^{1/2}, \text{ A : Detecting Area (Unit is cm}^2\text{), B : effective noise bandwidth, 1 Hz}$$

Mark	GUVA-T11GD	GUVA-S12SD	GUVB-S11SD	GUVB-T11GD	GUVC-T10GD
Ro (Ω) - Dynamic resistance	9.70E+10	9.70E+10	4.50E+10	4.5E+10	2.10E+11
A (cm^2) - Detecting area	0.00076	0.00076	0.00076	0.00076	0.00076
T(Kelvin) - Temperature	298.15	298.15	298.15	298.15	298.15
R_λ (A/W) - Responsivity at 350 nm	0.18	0.14	0.13	0.13	0.06
K(J/K) - Boltzmann constant	1.38E-23	1.38E-23	1.38E-23	1.38E-23	1.38E-23
D^*(Cm*Hz$^{1/2}$*W^{-1}) - Detectivity at λ	1.20E+13	9.37E+12	5.92E+12	5.92E+12	5.91E+12
NEP (fW/RtHz)	2.29	2.75	4.32	4.65	4.67

2. Bias Capacitance and Rise time along UV sensors

Divirsion	**Unit**	**GUVA-T11GD**	**GUVA-S12SD**	**GUVB-S11GD**	**GUVB-T11GD**	**GUVC-T10GD**
Bias Capacitance (@Vr = 0V)	pF	47	100	5	5	52
Rise time	ms	3	3	3	3	3