InGaAs Ultra-Low Noise Balanced Detector

200M

● Product Description

The UBD series ultra-low noise balanced detector module are upgraded products based on the previous MBD series. Compared to the original MBD series, the background noise is significantly reduced under the same

conditions. With the same bandwidth and gain, the background noise of the UBD series is approximately one-third of that of the MBD series modules, resulting in higher sensitivity and better signal-to-noise ratio.

● Product features

Ultra-low noise、High Gain、High bandwidth、Compact structure、Built-in low-noise isolation power supply

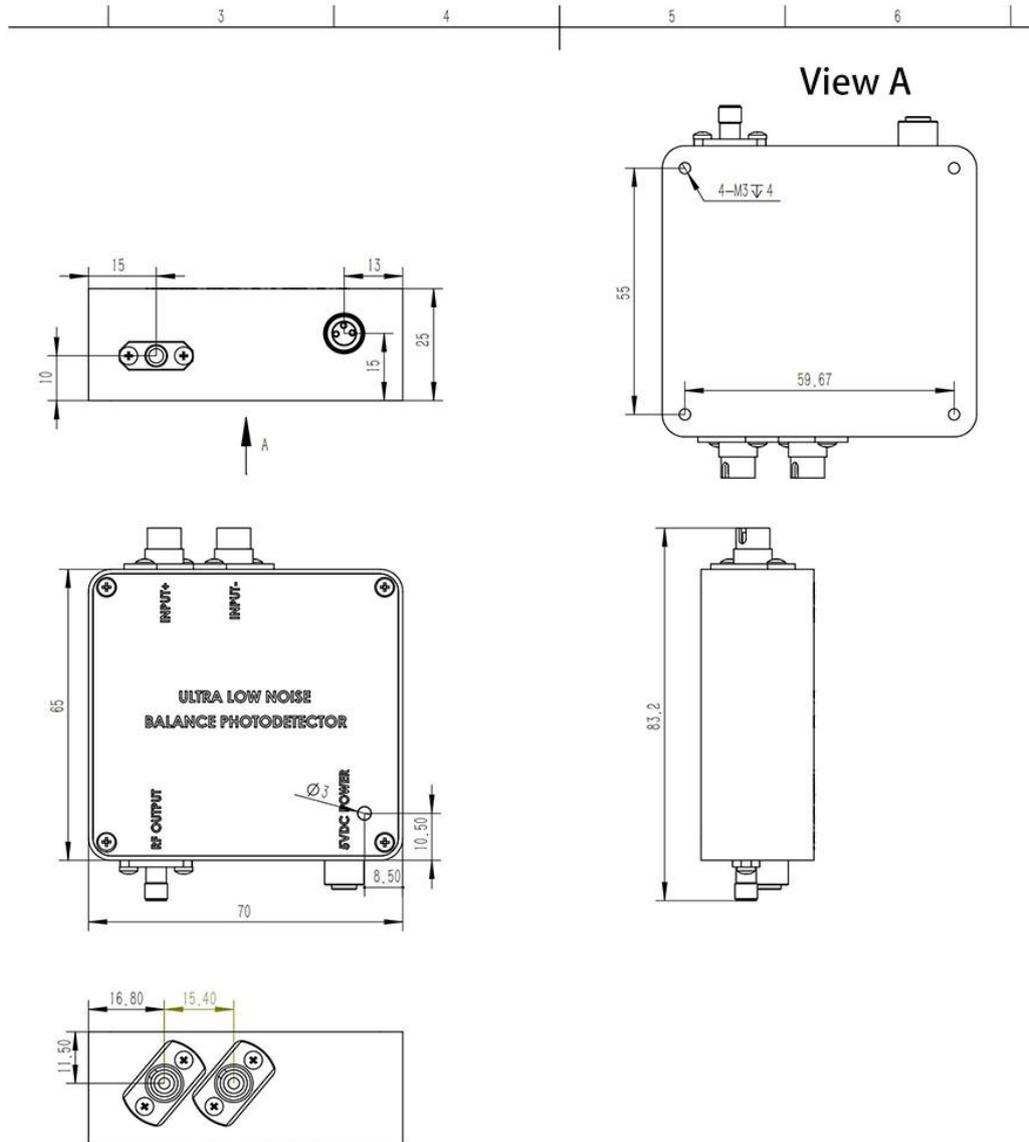## ● Part Number

MP-UBD-M-I-200-F/S-A

● Application area

Distributed fiber optic sensing、 Laser wind radar、 Optical coherence tomography、 Spectral measurement、 Pulsed light detection

● Core parameters

Wavelength	Bandwidth	Responsivity
800-1700nm	200MHz	0.95A/W

- **Dimension Drawing**

View A

ULTRA LOW NOISE
BALANCE PHOTODETECTOR

● General Parameters

Parameter

| Detector type	InGaAs											
Wavelength	800~1700											nm
Bandwidth	100 M	200 M	300 M	400 M	500 M	800 M	1G	1.2 G	1.5 G	2G	2.5 G	Hz
Detector responsivity	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	A/W@1550nm
Transimpedance gain	30K	30K	30K	20K	10K	30K	30K	30K	30K	30K	30K	V/W
Maximum input optical power	140	140	140	210	420	140	140	140	140	140	140	μW

|												
NEP	2.5	2.5	2.5	2.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	pW/Sqrt(Hz)
Common mode rejection ratio	>30	>30	>30	>30	>30	>30	>30	>30	>30	>30	>30	dB
Output impedance	50	50	50	50	50	50	50	50	50	50	50	Ω
Output coupling mode	DC/AC	DC/AC	DC/AC	DC/AC	DC	AC	AC	AC	AC	AC	AC	
Supply voltage	5	5	5	5	5	12	12	12	12	12	12	V

Supply current	0.5(max)	0.5(max)	0.5(max)	0.5(max)	0.5(max)	0.5(max)	0.5(max)	0.5(max)	0.5(max)	0.5(max)	0.5(max)	A
Optical input	FC/APC（Free space optional）											
RF output	SMA											
Dimensions	80*90*25											mm

Test result

Amptitude VS Frequency
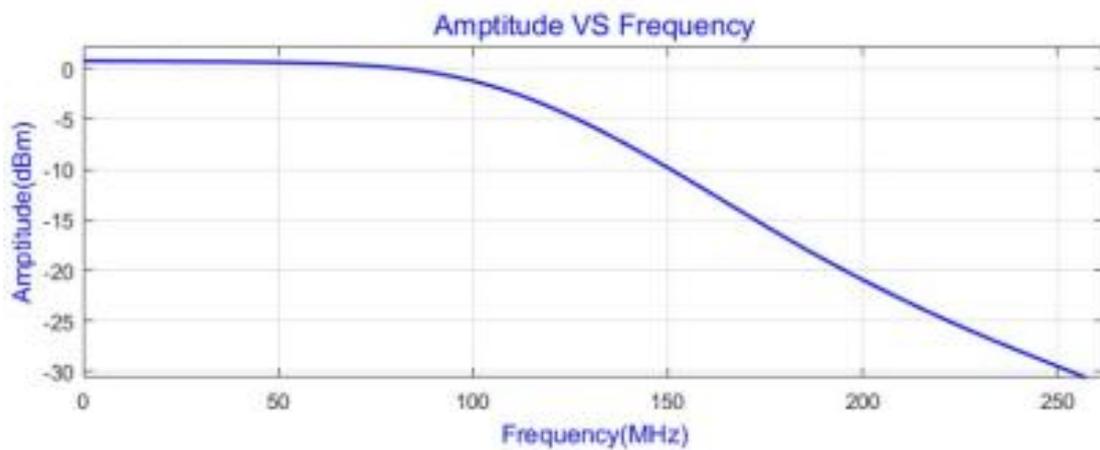
300 MHz bandwidth response curve
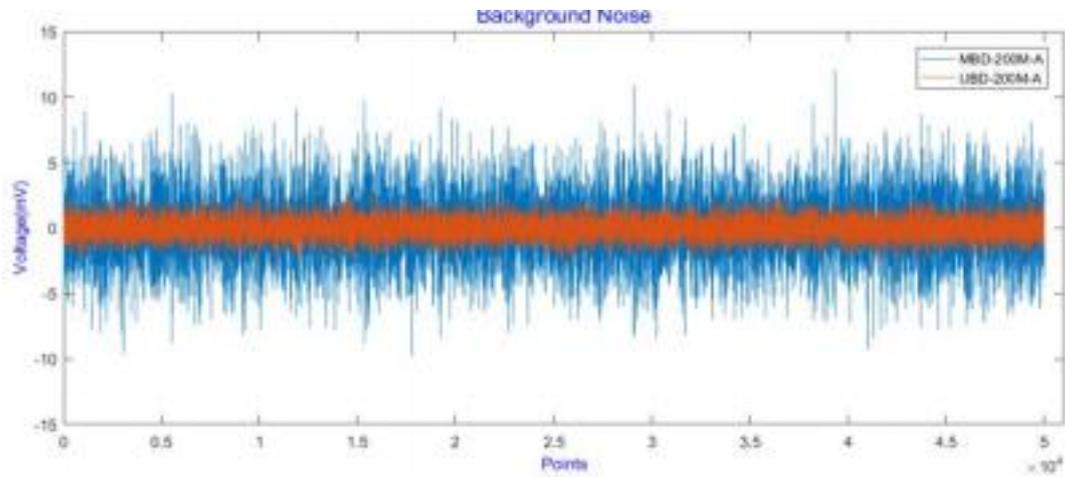
Comparison of the baseline noise between ultra-low noise balanced detectors

and conventional balanced detectors