ULN-PDB-x4

ULTRALOW NOISE BALANCED PHOTODETECTOR

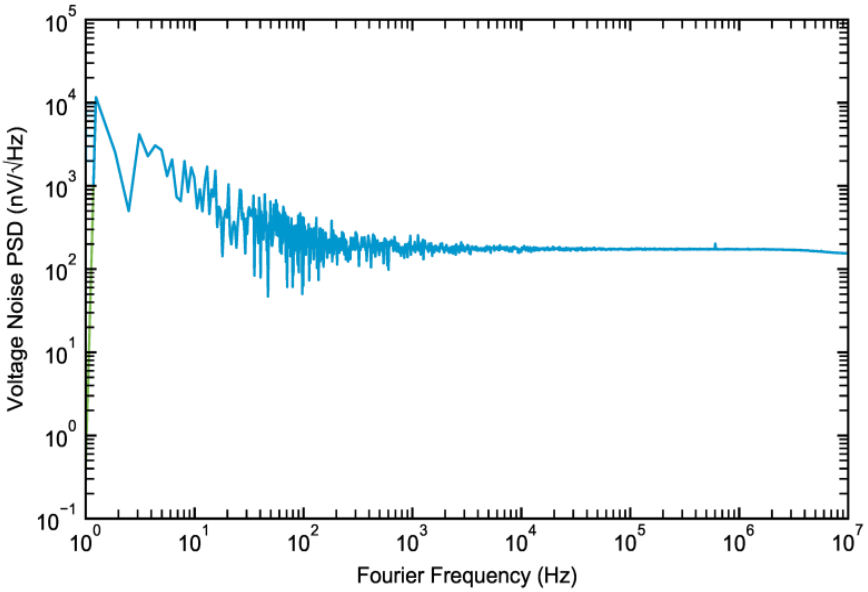
The ULN-PDB modules are plug-and-play ultralow noise balanced photodetectors in a compact and user-friendly package. They are proposed with InGaAs, Si, or Extended InGaAs photodiodes and offer a selection of bandwidths and gains in DC- or AC-coupled versions. Moreover, the ULN-PDB-x4 version offers 4 balanced photodetectors in one unit. The ULN-PDB modules offer adaptable optical coupling like free-space, FC/APC, FC/PC (either wide or narrow key) with additional mechanical adaptors.

SPECIFICATIONS

- Number of outputs: 4
- Spectral range: Depending on the selected photodiodes
- Photodiode damage threshold: typ. 5 mW (photodiode dependent)
- Common-mode rejection ratio (CMRR): > 60 dB
- Electrical coupling: DC or AC
- Trans-impedance gain, Bandwidth, Minimum noise equivalent power (NEP) (example combinations):

  78 kV/A, 10 MHz, 0.3 pW/√Hz
  7.8 kV/A, 100 MHz, 3 pW/√Hz
  780 V/A, 500 MHz, 6.5 pW/√Hz
- Output impedance: 50 Ω
- Maximum Electrical Bandwidth: 500 MHz (depending on the gain)
- Output voltage noise: typ. 5 nV/√Hz with 780 V/A // typ. 24 nV√Hz with 78 kV/A (noise floor)
- Output voltage range: -3 V to +3 V
- Output connectors: SMA female
- Input connectors: FC/PC or FC/APC (narrow or wide key) or Free space adjustable through mechanical adaptors
- Product dimensions: 272 x 108 x 33 mm^3
- Product weight: 1.2 kg

PERFORMANCES



Typical voltage noise power spectral density of the output with 500 µW optical power and gain of 39 kV/A on InGaAs.

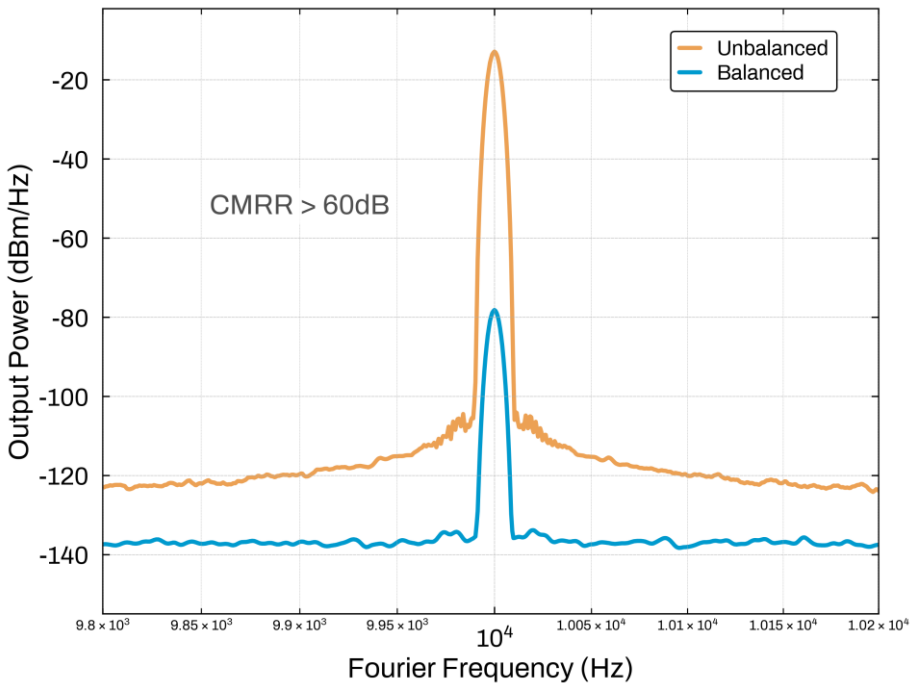
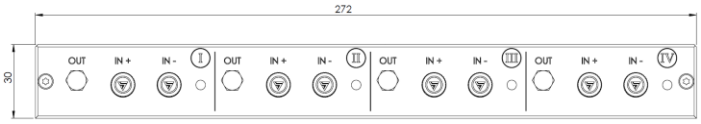


Illustration of the common-mode rejection ration (CMRR).

DRAWINGS

The dimensions of the device are presented here with a simplified view. It also shows the connections from the front and back view of the instrument.



FRONT

BACK

Dimensions are in [mm]

FUNCTIONAL DIAGRAM

The functional diagram is a simple view of what the instrument does. It enables a fast and simple understanding of the internal functionalities in respect to the system inputs and outputs.