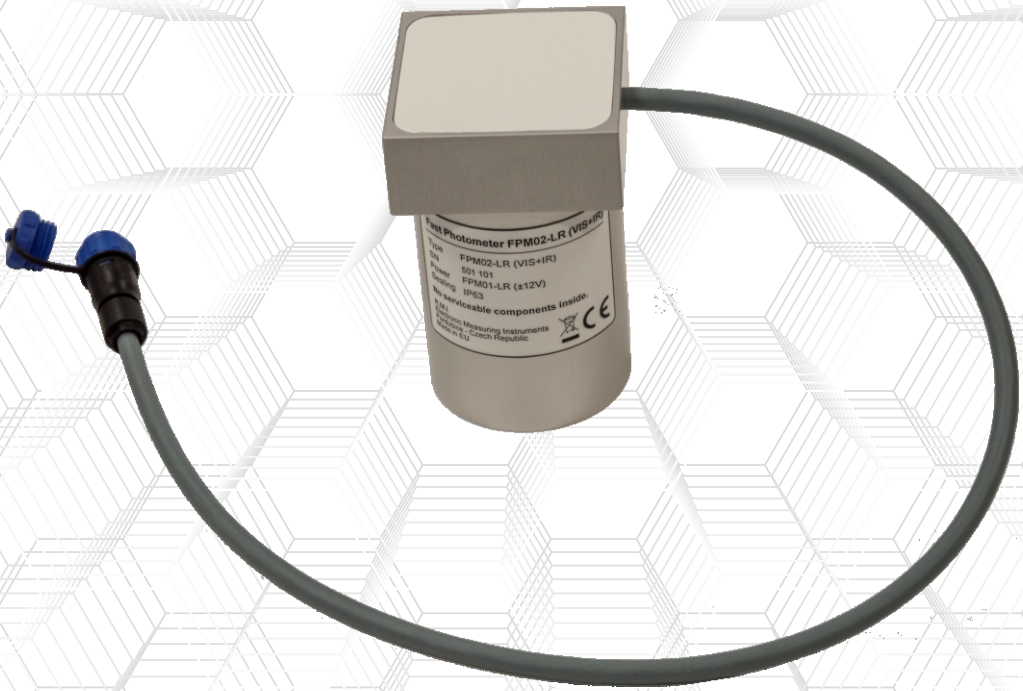
Long-Range Fast Photometer

FPM02-LR



Additional Long-Range Detector
for FPM01-LR Fast Photometer

Short description and technical data

Long-Range Fast Photometer FPM02-LR is additional detector for FPM01-LR Fast Photometer. This device is generally used for the same purposes as FPM01-LR, but thanks to the use of powerful optics allows measuring at significantly longer distances.

Accurate aiming of the detector to the long distance is usually very difficult. Our original design allows easy and very accurate aiming of the detector on the target thanks to the use of a powerful telescope. First, the telescope is aimed to the target (zoom function is available) and next the detector is placed on the eyepiece - so the detector is easily and accurately aimed directly to the target.

FPM02-LR exists in two modifications - one is for measuring in the visible light according to CIE specification (spectral charakteristic is the same as the human eye), the other measures in the area of visible and infrared light (up to 1100nm).

Basic technical specification

Principle of measurement : high-speed Si photodiode with amplifier

Spectral range :	*FPM02-LR (VIS-CIE)* *- spectral response analogous to CIE spectral luminous efficiency* *- spectral response range 480 to 660 nm* *- peak sensitivity wavelength 550 nm* *FPM02-LR (VIS+IR)* *- spectral response range 320 to 1100 nm* *- peak sensitivity wavelength 960 nm*
Reaction time :	*FPM02-LR (VIS-CIE) <10 us* *FPM02-LR (VIS+IR) < 3 us*
Field of view :	*with telescope BRESSER Pirsch 25-75x100, zoom 50x* *approx. ±0.40° distance : 10 m circle diameter : 0.14 m* *with telescope BRESSER Pirsch 25-75x100, zoom 25x* *approx. ±0.75° distance : 10 m circle diameter : 0.26 m* *with telescope BRESSER Pirsch 20-60x80, zoom 50x* *approx. ±0.45° distance : 10 m circle diameter : 0.16 m* *with telescope BRESSER Pirsch 20-60x80, zoom 20x* *approx. ±0.90° distance : 10 m circle diameter : 0.31 m*
Sensitivity :	*FPM02-LR (VIS-CIE) typ. 150 mV/uW @ 550 nm, DC(x1) Output* *FPM02-LR (VIS+IR) typ. 16 mV/uW @ 960 nm, DC(x1) Output*
Output signals : *(FPM01-LR)*	*Output voltage approx. 10 V max.* *DC(x1) Output* *AC(x1) Output (f_0 = 1.6 Hz)* *AC(x10) Output (f_0 = 1.6 Hz)*
Working temperature :	*-30°C to +40 °C*
Protection :	*IP63*
Air humidity :	*up to 90 %, non-condensing*
Altitude :	*max. 3000 m*
Power :	*±12 VDC, max. 0.1 W*
Dimensions (approx.) :	*64 x 64 x 106 mm (W x D x H)*
Weight :	*approx. 0.5 kg*

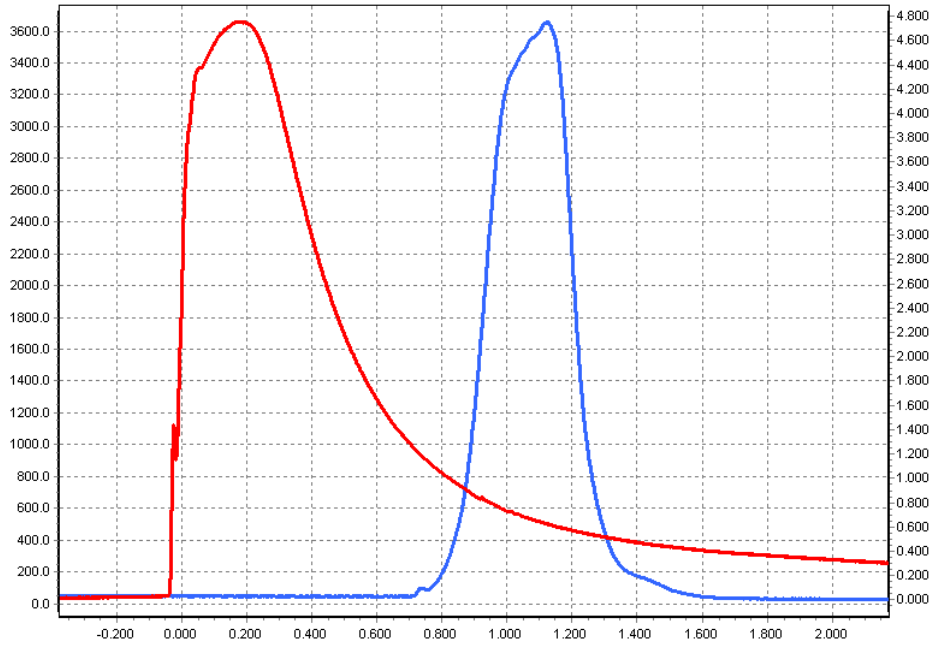
FPM01-LR with connected FPM02-LR detector

Applications of FPM02-LR

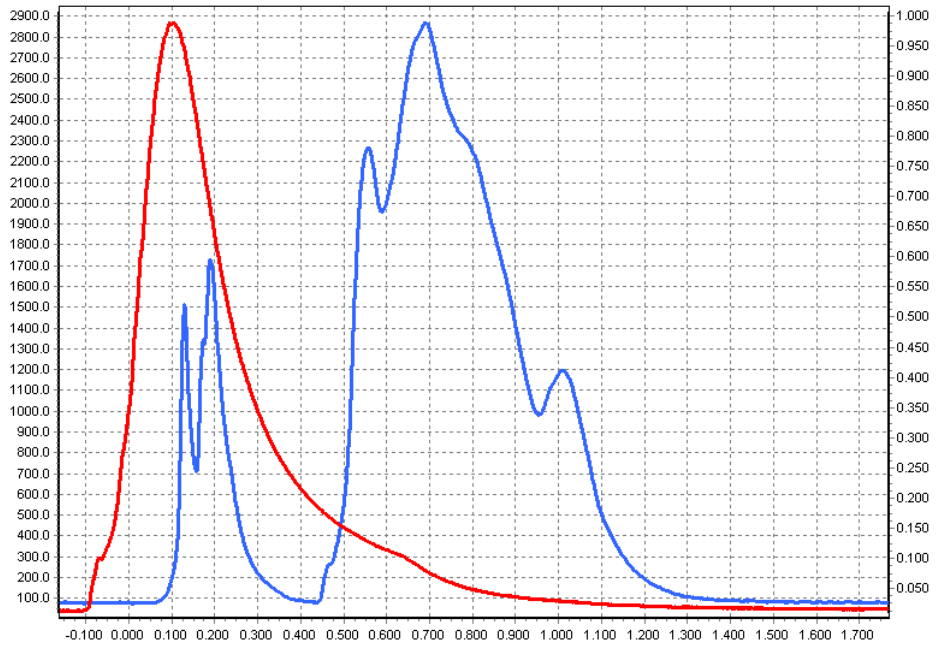
- ***long-distance measurement of the flash on the muzzle of the weapon***
- ***testing of flame suppressors and muzzle shrouds of large caliber weapons***
- ***testing the fuse time of explosive projectiles***
- ***testing of the tandem ammunition against reactive armour***
- ***using as Flash Detector to replace the muzzle sensor***
- ***testing of the pyrotechnics and explosives from a safe distance***

Typical signals

(Ballistic Analyzer BA08M was used for measurement)



Ammunition : 5.56 NATO
Red curve : chamber pressure
Blue curve : intensity of flame (VIS+IR)



Ammunition : 357Mag
Red curve : chamber pressure
Blue curve : intensity of flame (VIS+IR)

FPM02-LR detector and BRESSER Pirsch 25-75x100