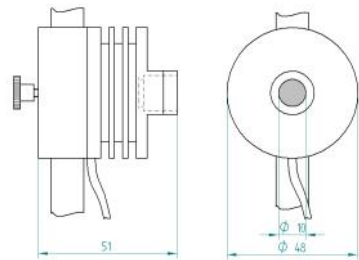
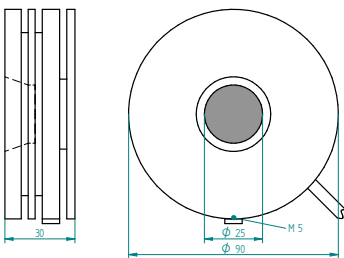


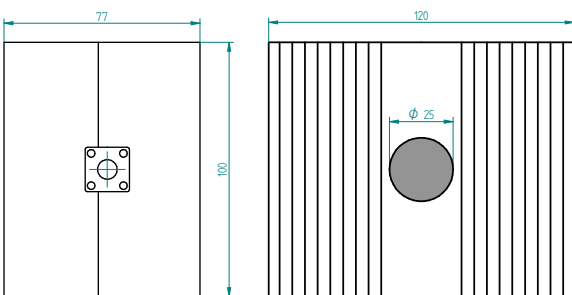
LP 20



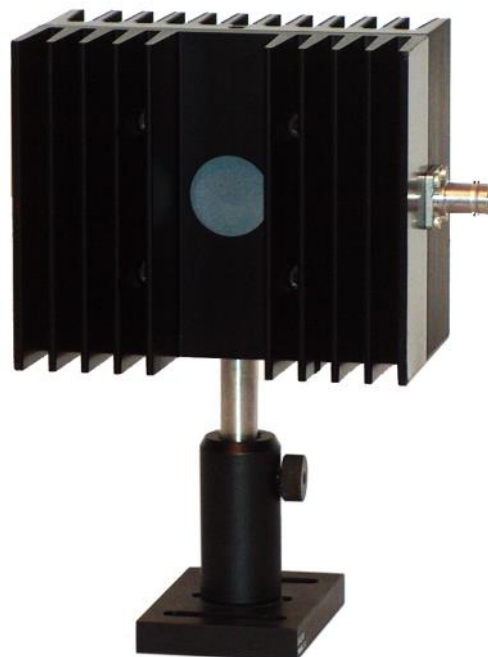
BB 10



BB 25 S



HP 25/50



Thermopile Detectors

The listed power heads are based on thermoelectric principles, which means that the heat generated from the incident radiation is transformed directly into a voltage.

The heads of BB – series have a black, broadband absorbing coating, whereas the HP – series is equipped with a ceramic layer allowing higher energy and power densities.

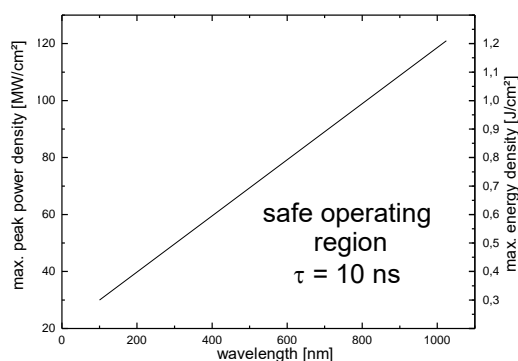
The head HP 25 S is specially made for service application. The compact dimensions enable easier transport. Due to the smaller heat sink, high powers are only possible for a short time.

The heads need several seconds to reach a thermal equilibrium. To avoid this delay time, we recommend the use of one of our read out units, such as LM 100 or PEM710. These devices determine the voltage and their increase and evaluate the laser power from this data. The time constant of the whole system is reduced to 1 second.

The main characteristic of the LP sensor is the very high sensitivity. This enables the sensor to measure small laser power with high precision and resolution over the high dynamic range of 6 orders of magnitude. For stabilisation of the sensor one can use a thermal isolation of the sensor housing. Additionally, the housing has a removable tube to protect the surface against stray light and air moving. Additionally, you can replace the tube by special adapters for using optical fibres.

	BB 10*	LP 20	BB 25 S	HP 25 S	HP 25 / 50
active diameter	10 mm	20 mm	25 mm	25 mm	25 mm
Power range	100 μ W - 3 W	10 μ W - 3 W	1 mW - 10 W	1 mW - 10 W	1 mW - 50 W
max. power density	40 W/cm ²	2.5 W/cm ²	40 W/cm ²	40 W/cm ²	40 W/cm ²
sensitivity	250 mV/W	5 V/W	70 mV/W .. 150 mV/W		
Cooling	convection				
connector	E-connector with EEPROM				

permissible power and energy densities vs. wavelength for sensors of HP-series



for pulses with width τ [ns] apply:

$$E_{\max} [\text{J/cm}^2] = 10^{-2} \cdot (5 + 0,03 \cdot \lambda [\text{nm}]) \cdot \sqrt{\tau [\text{ms}]}$$

permissible power and energy densities vs. pulse width for sensors of BB-series

