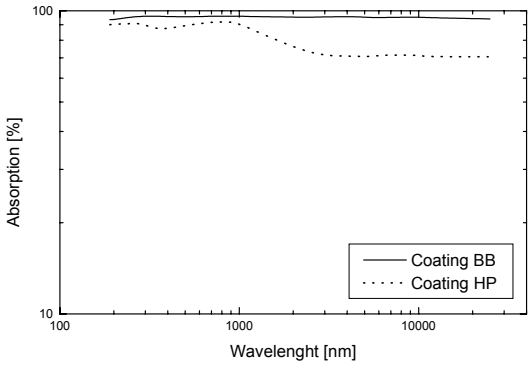
Power Measuring

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.

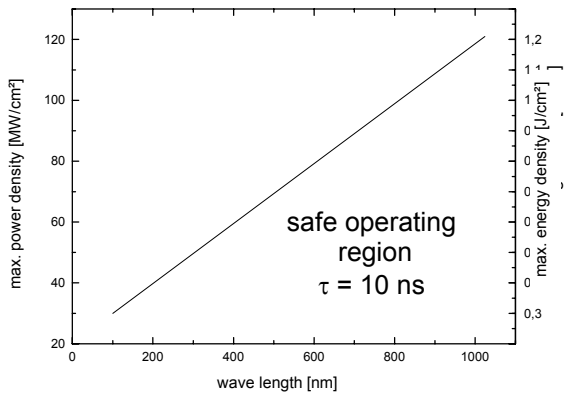
The head HP 25 S is specially made for service application. The compact dimensions enable easier transport. Due to the smaller heat sink, high powers are only possible for a short time.

The heads need 15 to 20 seconds to reach a thermal equilibrium. To avoid this delay time, we recommend the use of one of our power meters, such as LM 200 or LEM 2020. 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.



	BB 25	BB 50	HP 25	HP 50	HP 25 S	HP 25 / 50
active diameter	25 mm	50 mm	25 mm	50 mm	25 mm	25 mm
max. power	10 W	30 W	10 W	30 W	10 W	50 W
max. power density	20 W/cm²	20 W/cm²	20 W/cm²	20 W/cm²	20 W/cm²	40 W/cm²
dimensions [mm]	Ø 120 x 80	Ø 150 x 80	Ø 120 x 80	Ø 150 x 80	Ø 90 x 32	Ø 120 x 80
sensitivity	70 mV/W .. 150 mV/W					
connector	BNC					

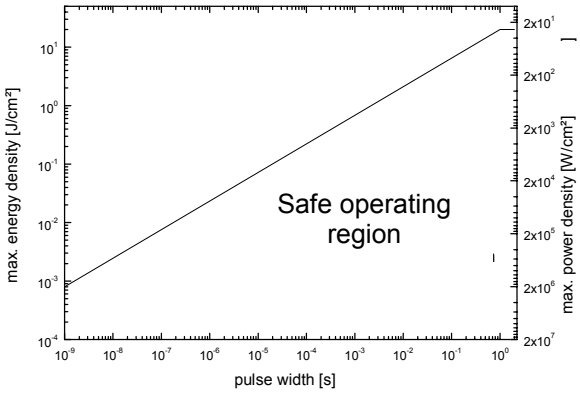
permissible power and energy densities vs. wave length for sensors of HP-series



for pulses with widt h τ[ns] apply :

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

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



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