

# Non-Contact Temperature Measurement

**DIGITAL – 2 – COLOR – FIBER OPTIC – PYROMETER**

**Temperature range 700 to 2000°C (1292 – 3632°F)**

**Temperature control during production process**

**compact unit – with light beam aiming device**

- fiber optic
- RS 232 interface
- limit output

**Series QKTRD 4485-1**



figure approx. M 1:1

MAURER – Infrared – pyrometer can also assist you to monitor your heating processes, ensuring a uniform standard of quality for your products.

leaflet QKTRD 4485-1

<http://www.maurer-ir.de>

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# Digital 2-Color-Fiber Optic-Pyrometer Series QKTRD 4485-1

**60 years experiences and digital technology makes it possible!**

A pyrometer – as small as a cigarette-box – but powerful like a big one.

- fiber optic
- light beam aiming device with a green LED for target marking
- emissivity slope adjustable at the unit
- analog- and digital output
- 1 adjustable limit output (open collector)
- software IR-LOG

Through the serial interface additional parameter functions are possible:

analog output: 0 – 20 / 4 – 20 mA switchable

zoom range within measuring range

emissivity slope

average: arithmetical or sliding

maximum value storage: storage modes and erase functions par ex. automatically with the next measuring object

## Examples of applications:

steel, iron, non-ferrous metal, wires, ceramics, glass feeder, glass tub, glass arching, hardening, rolling, laser, induction heating, brazing, forging, welding, transforming, vacuum furnace

## Temperature measuring range

- linear –

| No. | temperature range            |
|-----|------------------------------|
| 1   | 700 - 1600°C (1292 – 2912°F) |
| 2   | 800 - 2000°C (1472 – 3632°F) |

special measuring ranges  
on request

## Technical datas:

|                           |  |
|---------------------------|--|
| Spectral response         | 0,85 – 1,1 µm                                |
| Response time             | 10 ms  |
| Accuracy                  | 0,5 % ± 1°C                                  |
| Reproducibility           | 1 ‰  |
| Emissivity slope          | 0,800 – 1,200                                |
| Operating temperature     | 0 - 50°C (32 – 122°F)                        |
| Storage temperature       | - 10°C - + 70°C (14 – 158°F)                 |
| Temperature-sensitivity   | 0,01 % / °C                                  |
| Humidity tolerance        | 35 - 85 % RF                                 |
| Analog output temp.linear | 0 – 20 mA or 4 – 20 mA                       |
| Switch-off limit          | 5 – 80%                                      |
| Limit output (open coll.) | 24 V 100 mA                                  |
| Interface                 | RS 232 ± 50 V isolated                       |
| Operating voltage         | DC 24 V ± 10 %                               |
| Current input             | < 100 mA                                     |
| Unit connection           | 8-pole plug connector                        |
| Dimensions H / W / D      | 65 x 30 x 80 mm<br>(2,56 x 1,18 x 3,15 inch) |
| Weight                    | 0,15 kg (0,33 lbs)                           |
| Protection class          | IP 65  |

**Fiber optic:** Type GM-L, length 500 mm in metal hose

ambient temperature max. 150°C, bend radius min. 100 mm

|  |             |           |        |                |                         |
|--|-------------|-----------|--------|----------------|-------------------------|
|  | fiber optic | Type GM-L | 500 mm | ∅ 0,6 mm fiber | temperature range no. 1 |
|  | fiber optic | Type GM-L | 500 mm | ∅ 0,4 mm fiber | temperature range no. 2 |
|  | fiber optic | Type GM-L | 500 mm | ∅ 0,2 mm fiber | temperature range no.   |

(other length and fiber on request)

**Objectives:** For accomodation to the measuring application are several objectives and optic systems available.  
(see datasheet)

### electrical assembly

- main supply unit 230 VAC 24 VDC
- electronic process unit AE1010
- electronic process unit AE1012
- controlling output continuous 10-0 V

### mechanical assembly

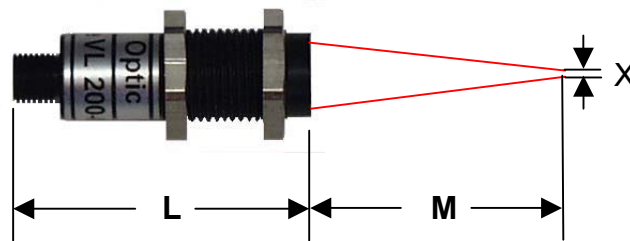
- execution in cooling case
- blowing devices
- mirror 90°
- mounting parts

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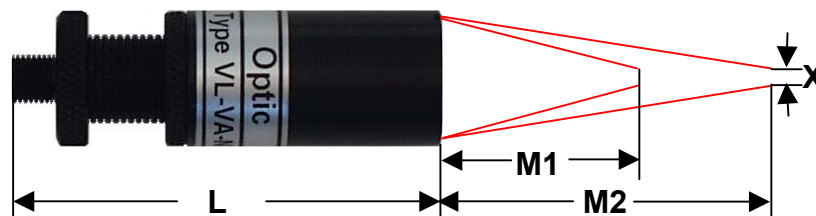
## objective for fiber optic pyrometer

**fix-focus  
M12x1**



| optic type | M / mm | L / mm | target size X Ø / mm |       |
|------------|--------|--------|----------------------|-------|
| VL 50-M12  | 50     | 38     | fiber 0,2mm          | 0,7mm |
|            |        |        | fiber 0,4mm          | 1,4mm |
|            |        |        | fiber 0,6mm          | 2,0mm |
| VL 100-M12 | 100    | 40     | fiber 0,2mm          | 1,0mm |
|            |        |        | fiber 0,4mm          | 2,0mm |
|            |        |        | fiber 0,6mm          | 3,0mm |
| VL 150-M12 | 150    | 38     | fiber 0,2mm          | 1,4mm |
|            |        |        | fiber 0,4mm          | 2,7mm |
|            |        |        | fiber 0,6mm          | 4,0mm |
| VL 200-M12 | 200    | 38     | fiber 0,2mm          | 2,0mm |
|            |        |        | fiber 0,4mm          | 4,0mm |
|            |        |        | fiber 0,6mm          | 6,0mm |

**vario-focus  
Ø 18mm**



target size X:  $\frac{\text{focusing distance M mm}}{\text{distance ratio D}}$  par ex.  $\frac{M = 150\text{mm}}{D = 75} = 2,00 \text{ mm } \varnothing$

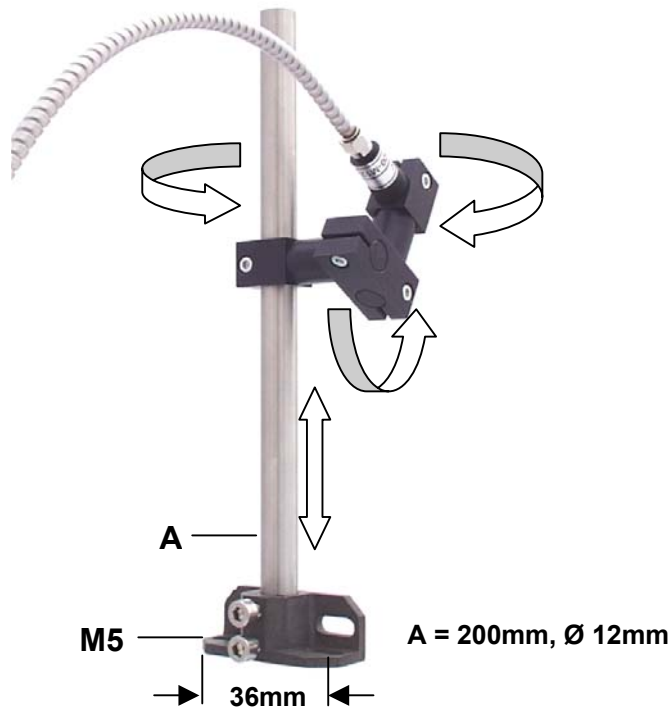
| optic type | M1 / mm | M2 / mm | L / mm  | distance ratio D |     |
|------------|---------|---------|---------|------------------|-----|
| VL-VA-N    | 65      | 160     | 46 - 56 | fiber 0,2mm      | 138 |
|            |         |         |         | fiber 0,4mm      | 69  |
|            |         |         |         | fiber 0,6mm      | 46  |
| VL-VA-T    | 100     | 5000    | 46 - 56 | fiber 0,2mm      | 150 |
|            |         |         |         | fiber 0,4mm      | 75  |
|            |         |         |         | fiber 0,6mm      | 50  |

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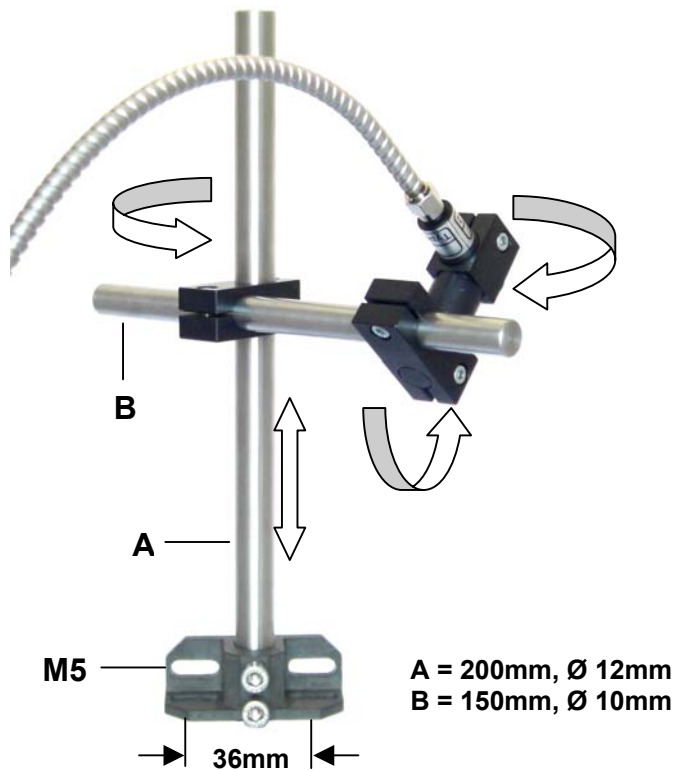


**mounting stud standard for KTRD 4400-series objective M12**



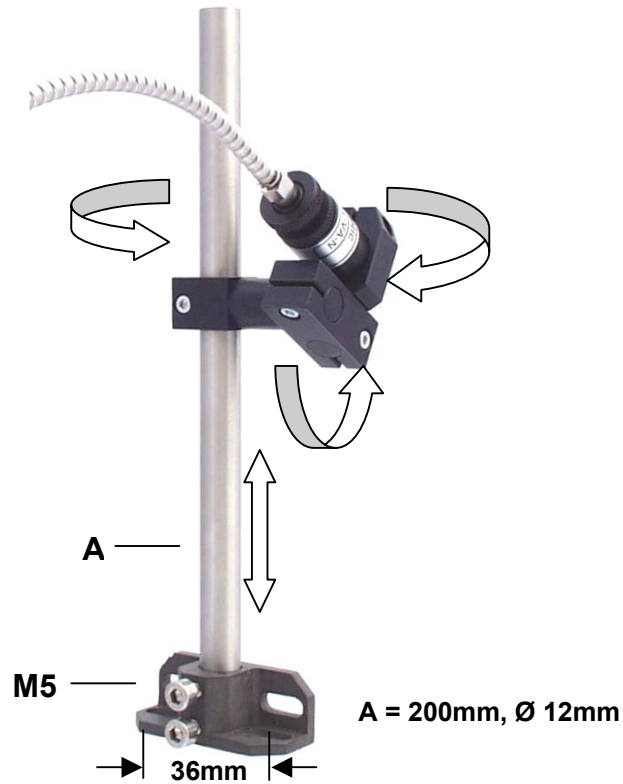
Art.Nr. 118-2004

**mounting stud universal for KTRD 4400-series objective M12**



Art.Nr. 118-2006

**mounting stud standard for KTRD 4400-series objective Ø 18mm**



Art Nr. 118-2003

**mounting stud universal for KTRD 4400-series objective Ø 18mm**



Art Nr. 118-2005

