

Digital MAURER Pyrometer

KTRD 4475-HS

measuring range 350-1500°C

HIGHSPEED COMPACT DEVICE

with Fiber Optic Cable

Laser application



Performance, precision and reliability - you can count on MAURER pyrometers. The compact and easy to use design, as well as a large selection of matching accessories, enables you to quickly integrate the pyrometer into your surroundings. For tight spaces, this pyrometer is equipped with a fiber optic cable and an attached optic system.

The most important **features** and **characteristics** at a glance:

- Spectral range: 1,45 – 1,7 μm
- **Ultra-short responsetime of 100 μs**
- Emissivity from 100 – 10 %, adjustable directly at the pyrometer or via interface
- **Green target light (LED)** that is exactly identical to the actual measuring spot in position and size
- With **fiber optic cable and optic system** for exact focusing even in narrow spaces
- Use with **digital and analogue output**
- **1 limit output** (open collector)
- Operating voltage **24 V DC**
- **Free software** (IR-LOG) for parameter setting, data recording and storage



Measuring Ranges

Short measuring ranges

1. 350 – 900 °C
2. 400 – 1000 °C
3. 500 – 1200 °C

Long measuring ranges

4. 350 – 1500 °C

Special measuring ranges upon request

Scope of Applications

Processing of steel, iron, non-ferrous metal, wires and ceramics; rolling, soldering, welding, transforming, induction heating; vacuum furnace etc.

Technical Data

Spectral range	1,45 – 1,7 µm
Target marking	Green target light (LED)
Response time	100 µs
Measurement uncertainty	0,5 % ± 1 °C (ε = 1, Tu = 23 °C, T 95 = 1 s)
Temperature dependence	0,01 % / °C
Reproducibility	0,1 %
Emissivity	100 – 10 %, adjustable directly at the pyrometer or via interface
Resolution	< 0,1 % at the analogue output < 0,1 °C at the interface
Operating / Storage temperature	0 – 60 °C, fiber optic cable and optics 150°C / -10 °C – 70 °C 32 – 140 °F, fiber optic cable and optics 302 °F / 14 – 158 °F
Permissible humidity	35 – 85 % RH (non-condensing)
Analogue output	0 – 20 mA / 4 – 20 mA (Load max. 500 Ω)
1 limit output (open coll.)	24 V 100 mA
interface	RS 232 ± 50 V isolated <u>or</u> RS 485 ± 70 V isolated
Maximum value memory	Maximum memory, peak value memory double, adjustable time and threshold value, erasing after time, external contact, by software, after every measuring object
Supply voltage	24 V DC ± 10 %
Power consumption	< 100 mA
Device connection	8-pol. plug connector if RS232, 7-pol. plug connector if RS485
Dimensions (LxHxW) / Weight	30 x 65 x 80 mm / 0,15 kg without fiber optic cable
IP Code	IP65

Fiber optic cables

Quartz fiber optic cable in metal hose, ambient temperature max. 150 °C, minimum bending radius = 200 x fiber thickness.

Both sides with FSMA-plug for connecting the pyrometer and the optic system. Custom-tailored lengths and other fibers available upon request

Fiber thickness	For measuring range No.
Ø 0,2 mm fiber	1-4

Configurations

- Version with fiber optic cable: KTRD 4475
- Special objective and measuring ranges upon request

Main Equipment

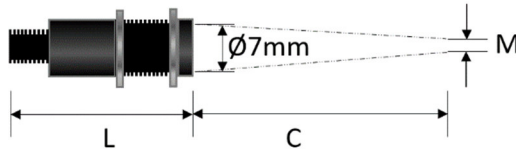
Electronic Equipment		Mechanical Equipment	
Connection cables	Power Supply 100-270 VAC – 24 VDC	Objectives	Mirror 90° for beam deflection
Electronic process units	Interface converter (to USB)	Mounting parts	Blowing devices
		Cooling plate	

Optics for MAURER pyrometers with fiber optic cable

Optic systems

OVERVIEW

Fix-Focus
M12x1

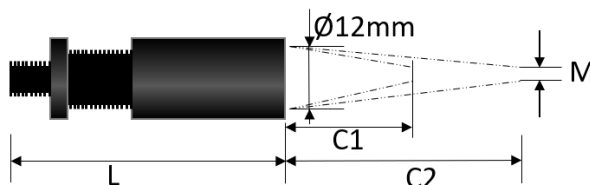


Legende

- L Length of optic
- C Measuring distance from optic front edge
- M Measuring spot size

Optics	C [mm]	L [mm]	Fiber Ø [µm]	M [mm]
VL 50-M 12	50	38	200	0,7
			400	1,4
			600	2,0
VL 100-M 12	100	40	200	1,0
			400	2,0
			600	3,0
VL 150-M 12	150	38	200	1,4
			400	2,7
			600	4,0
VL 200-M 12	200	38	200	2,0
			400	4,0
			600	6,0

Vario-Focus
Ø 18 mm

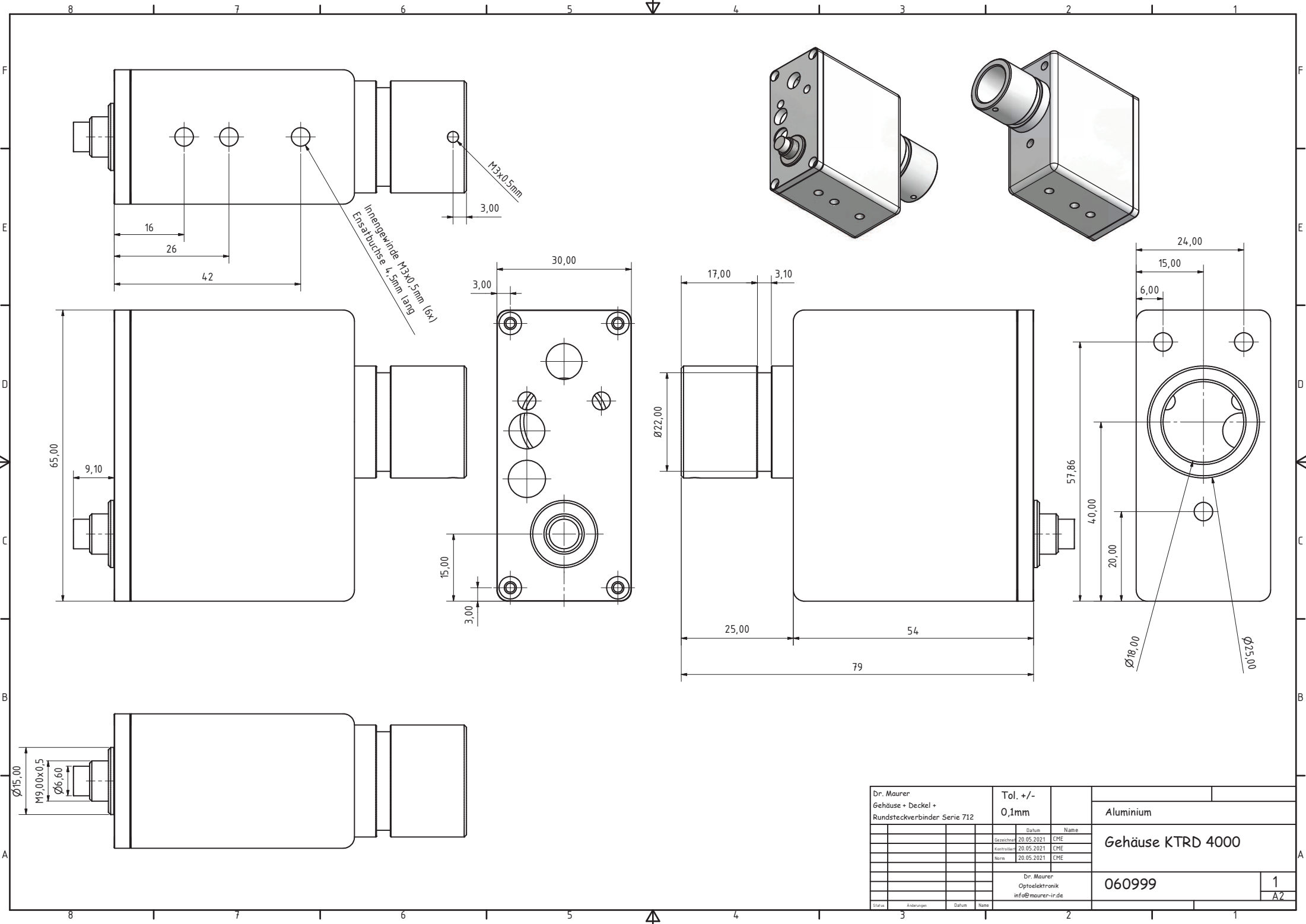


Legende

- L Length of optic
- C Measuring distance from optic front edge
- M Measuring spot size

Measuring spot size M (mm) = $\frac{\text{Measuring distance (mm)}}{\text{distance ratio}}$ z.B. $\frac{C=150 \text{ mm}}{D=75} = \text{Ø } 2,00 \text{ mm}$

Optics	C1 [mm]	C2 [mm]	L [mm]	Fiber Ø [µm]	D Distance ratio
VL-VA N	65	160	46 – 56	200	138
				400	69
				600	46
VL-VA T	100	5000	46 – 56	200	150
				400	75
				600	50



Dr. Maurer				Tol. +/-					
Gehäuse + Deckel +				0,1mm		Aluminium			
Rundsteckverbinder Serie 712									
				Datum	Name	Gehäuse KTRD 4000			
				Gezeichnet	20.05.2021 CME				
				Kontrolliert	20.05.2021 CME				
				Norm	20.05.2021 CME				
				Dr. Maurer		060999			1
				Optoelektronik					
				info@maurer-ir.de					
Status	Änderungen	Datum	Name						