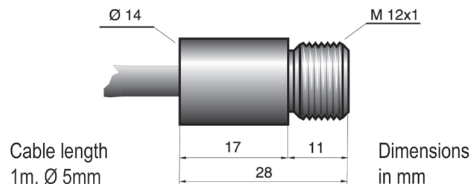
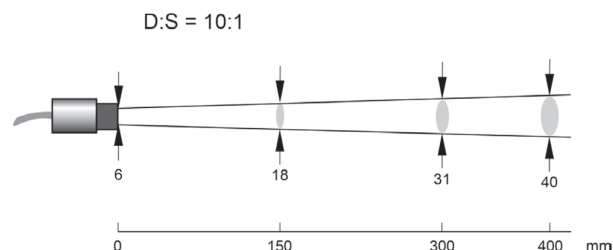


Digital infra-red sensor for measuring surface temperature FIAD43 Miniature probe head, integrated electronics, ALMEMO® D6 plug



- Digital infra-red probe head with integrated signal processor
- All sensor characteristics and adjustment data are stored in the probe head itself.
- Digital transmission ensures that measured values are not affected by the sensor cable being moved, bent, or twisted.
- Surface temperature is measured over a wide range up to 600°C.
- Robust stainless steel housing, protection class IP65
- The probe head, thanks to its small dimensions, can be installed in cramped and restricted conditions.
- The probe head is threaded for quick and easy installation.
- The sensor cable in polyurethane (PUR) is suitable for industrial use and is resistant to oily, acidic, basic environments.
- The sensor can be connected directly via the cable's ALMEMO® D6 plug to any ALMEMO® device.
- One measuring channel is preprogrammed on leaving our factory - surface temperature (°C).
- Emissivity 0.95 are preprogrammed (on leaving our factory).
- This can be programmed from 0.1 to 1.0 at the current ALMEMO® V6 devices via the device or via interface (some only via interface).
- Transmittance 1.0 is preprogrammed (on leaving our factory). When using the focal point lens attachment or the protective window, the transmittance of the focal point lens attachment or the protection window must be adjusted. Transmittance can be modified in the ALMEMO® D6 sensor menu directly on the PC using USB adapter cable ZA1919AKUV (see page 04.05) 35/5000 or with an ALMEMO® V7 measuring device..

Measuring Field



General features and accessories, ALMEMO® D6 sensors
see page 01.08

Options fitted at our factory



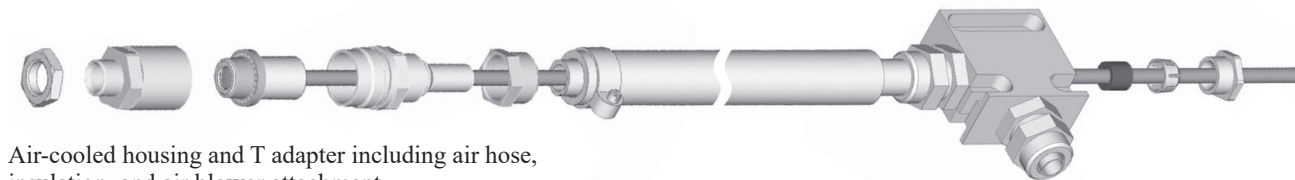
Air blower attachment

OR7843LB



Deflecting mirror with integrated air blower attachment

OR7843US1



Air-cooled housing and T adapter including air hose, insulation, and air blower attachment

Length of air hose 0.8 meters

OR7843KL1

Length of air hose 2.8 meters

OR7843KL2



Deflecting mirror for air-cooled housing

OR7843US

Standard delivery

Infra-red probe head with cable and ALMEMO® D6 plug and 1 mounting nut

Cable length = 1 meter

Cable length = 3 meters

Order no.

FIAD4332

FIAD4332L3

DAkkS or factory calibration KI9xxx temperature for digital sensor (see chapter Calibration certificates).

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.

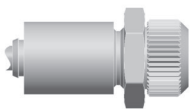
10/2021 • We reserve the right to make technical changes.

Technical data

Digital infra-red probe head (including A/D converter)

Temperature measuring range	-40 to +600 °C		
Spectral sensitivity	8 to 14 μm		
Optical resolution (90 % energy)	10:1	with focal point lens attachment 1 mm at distance of 10 mm Transmittance can be programmed to 0.75. (see below)	
Accuracy	±1 % of meas. value or ±1 K (whichever value is higher) ±2 K for meas. values <20 °C		
Reproducibility	±0.5 % of measured value or ±0.5 K (whichever value is higher)		
Nominal conditions	23 °C ±5 K, emissivity 1.0		
Temperature coefficient	±0.05 K / K or ±0.05 % of measured value / K (whichever value is higher)		
Temperature resolution	0.1 K		
Response time	130 ms (90 %)		
Emissivity	0.95 (preprogrammed on leaving our factory) This can be programmed from 0.1 to 1.0 at the current ALMEMO® V6 devices via the device (some only via interface).		
Transmittance the focal point lens attachment or the protective window :	1.0 (preprogrammed on leaving our factory) This can be programmed from 0.1 to 1.0 directly on the PC using USB adapter cable ZA1919AKUV. (please place a special order) (see "General accessories for ALMEMO® D6 sensors")		
Protection class	IP65 (NEMA 4) (National Electric Manufacturers Association)		
Ambient temperature	-10 to +120 °C with air-cooled housing -10 to +200 °C		
Storage temperature	-20 to +120 °C		
Relative atmospheric humidity	10 to 95 % non-condensing		
Housing	Stainless steel		
Dimensions	Probe head Length 28 mm x Ø 14 mm Thread M12 x 1		
Weight	Probe head 50 grams with 1-meter cable		
Connecting cable(s)	permanently fitted with ALMEMO® D6 plug	Polyurethane (PUR)	For available lengths see variants.
ALMEMO® D6 plug	Refresh time	0.25 seconds for all channels	
	Supply voltage	6 to 13 VDC	
	Current consumption	4 mA	

Accessories



Focal point lens attachment (cannot be used together with air blower attachment or air-cooled housing)
Transmittance 0.75

ZR7843CFL



Protective window (cannot be used together with air blower attachment or air-cooled housing)
Transmittance 0.75

ZR7843PW



Mounting bracket, rigid

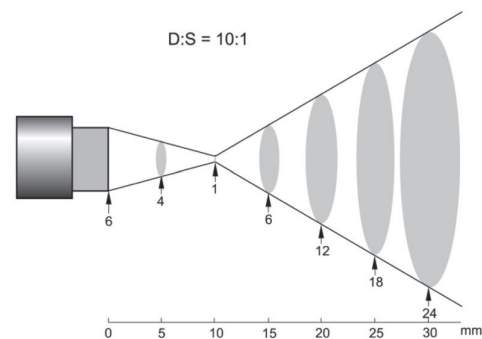
ZR7842H



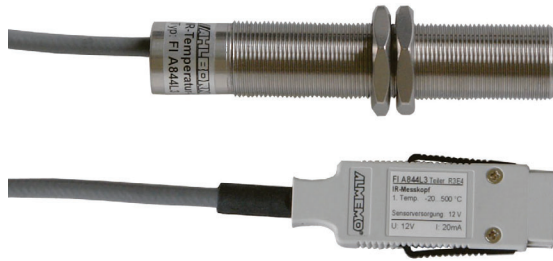
Mounting bracket, adjustable

ZR7842JH

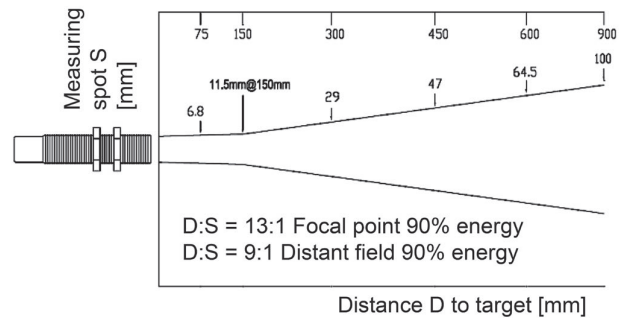
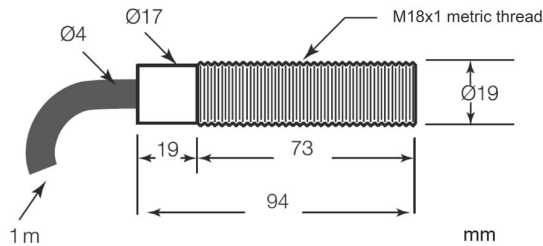
Measuring field with focal point lens attachment



Compact infra-red probe head AMiR FIA 844 suitable for all ALMEMO® devices



- Compact inexpensive infra-red probe head for measuring surface temperature
- Other measuring ranges -20 to +500 °C
- High optical resolution Measuring spot 11.5 mm at distance 150 mm, in distant field 9:1
- Sturdy stainless steel housing Protection IP65
- Quick and easy to install thanks to screw-fit housing
- Integrated electronics, cable permanently fitted
- Can be connected directly to the ALMEMO® device using an ALMEMO® connector.



10/2021 • We reserve the right to make technical changes.

Accessories

Mounting bracket, rigid
Mounting bracket, adjustable
Air blower attachment Thread M18x1

Order no.

ZR7844FB
ZR7844JB
ZR7844APM

Variants (including 2 mounting nuts):

ALMEMO® infra-red probe head Measuring range -20 to +500 °C
with permanently fitted cable and ALMEMO® connector, Cable length = 1 meter

Same as above Cable length = 3 meters

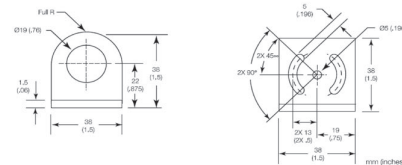
Factory calibration KI9xxx temperature for sensor (see chapter Calibration certificates)

FIA844
FIA844L3

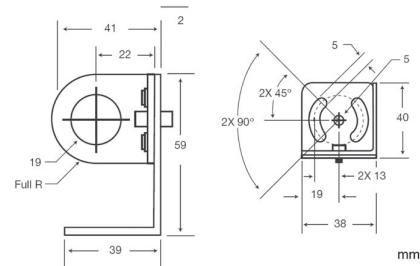
Technical data

Temperature range	-20 to +500 °C
Spectral sensitivity	8 to 14 μm
Optical resolution (90 % energy)	13:1 (11.5 mm at 150 mm distance), distant field 9:1
Accuracy	±1.5 % of measured value or ±2 K (whichever value is higher) ±3.5 K for measured values <0 °C
Reproducibility	±0.5 % of measured value or ±1 K (whichever value is higher)
Nominal conditions	23 °C ±5 K, Emissivity 0.95
Temperature resolution	0.1 K
Response time	150 ms (95 %)
Emissivity	0.95, fixed setting
Voltage supply	via ALMEMO® connector (12 VDC)
Protection	IP65
Ambient temperature	-10 to +70 °C
Storage temperature	-20 to +85 °C
Relative atmospheric humidity	10 to 95 % non-condensing
Housing	Stainless steel
Dimensions	Length 94 mm Thread M18x1
Connecting cable	permanently fitted, 1 or 3 meters, -30 to +105 °C including ALMEMO® connector, programmed
Weight	approx. 160 g (1-meter cable)

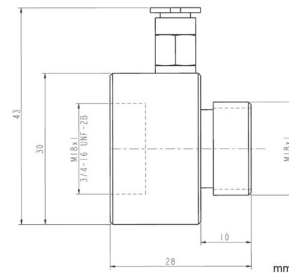
Mounting bracket
Order no. ZR7844FB



Mounting bracket, adjustable
Order no. ZR7844JB



Air blower attachment
Thread M18x1
Order no. ZR7844APM



Infra-red transmitter for measuring surface temperature AMiR 7843

Miniature probe head, transmitter box with display / operating controls, with analog output



- Surface temperature is measured over a wide range up to 600 / 1000 °C.
- The probe head, thanks to its small dimensions, can be installed in cramped and restricted conditions.
- Robust stainless-steel housing, protective class IP65
- The probe head is threaded for quick and easy installation.
- The sensor cable is suitable for industrial use and is resistant to oily, acidic, and alkaline environments.
- Transmitter box with display and operating controls
- Analog output 10 V / 20 mA, freely selectable and scalable.

! Infra-red sensor suitable for direct connection to ALMEMO® measuring instruments see Digital sensor FIAD43x with ALMEMO® D6 plug (see page 01.08)

Accessories MR7843 series

Order no.

Mounting bracket, rigid	ZR7842H	Focal point lens attachment (cannot be used together with air blower attachment or air-cooled housing)	ZR7843CFL
Mounting bracket, adjustable	ZR7842JH	10:1 optics Measuring spot diameter 1 mm at distance of 10 mm	
Protective window (cannot be used together with air blower attachment or air-cooled housing)	ZR7843PW	22:1 optics Measuring spot diameter 0.5 mm at distance of 10 mm.	

Accessories for MR7843-12 / -32 / -42

Order no.

Air blower attachment	ZR7842LB	90° deflecting mirror	ZR7842US
Air-cooled housing and T branch, including 0.8-meter air hose, insulation, and air blower attachment	ZR7842KL1	90° deflecting mirror with integrated air blower attachment	
Same as above but with 2.8-meter air hose	ZR7842KL2		ZR7842US1

Options for MR7843-12 / -32 / -42

Order no.

Factory test certificate (only with delivery of new devices) OR7843KZ1	chapter „Calibration certificates“). DAKkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.
DAKkSDKD or factory calibration KI9xxx, temperature, for sensors (see	

Standard delivery

Probe head (including mounting nut) with cable, PUR, mounted on transmitter box

Temperature range	Optical resolution	Ambient temperature, probe head	Order no. Probe head cable, 1 m	Order no. Probe head cable, 3 m*
-40 to 600°C	2:1	-10 to 120°C	MR784312	MR784312L03
-40 to 600°C	10:1	-10 to 120°C	MR784332	MR784332L03
0 to 1000°C	22:1	-10 to 120°C	MR784342	MR784342L03

* Available on request longer probe head cable, 8 / 15 / 30 meters

Options for MR7843-33 / -43

Order no.

Air blower attachment, only fitted at our factory	OR7843LB1	Factory test certificate (only with delivery of new devices) OR7843KZ1
90° deflecting mirror (only with air blower attachment OR7843LB1)	OR7843KZ1	DAKkS or factory calibration KI9xxx, temperature, for sensors (see chapter „Calibration certificates“). DAKkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.

Standard delivery

Probe head (including mounting nut) with cable, fluoropolymer, with separate electronics Ø14 mm, approx. 52 mm long, with 0.5 m cable, mounted on transmitter box

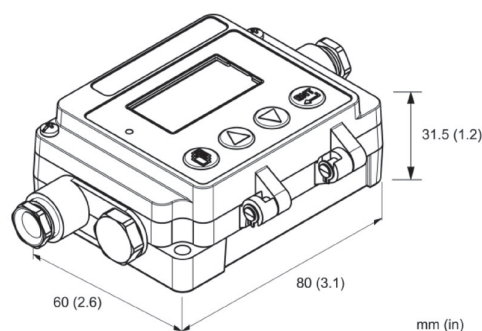
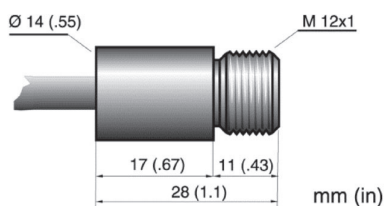
Temperature range	Optical resolution	Ambient temperature, probe head	Order no. Probe head cable, 1 m	Order no. Probe head cable, 3 m*
-40 to 600°C	10:1	-10 to 180°C	MR784333	MR784333L03
0 to 1000°C	22:1	-10 to 180°C	MR784343	MR784343L03

* Available on request longer probe head cable 8 / 15 / 30 meters

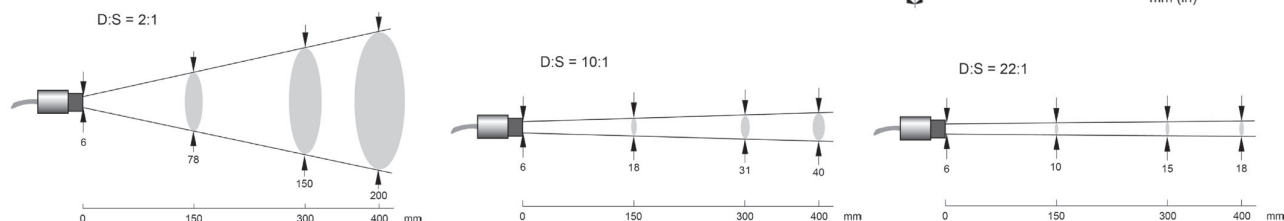
Technical data

Probe head	
Temperature measuring range	depending on type -40 to +600 °C or 0 to +1000 °C
Spectral sensitivity	8 to 14 μm
Optical resolution (90 % energy)	depending on type 2:1 / 10:1 / 22:1, typical (21:1 guaranteed)
Response time (90%)	130 ms
Accuracy	±1 % of measured value or ±1 K (whichever value is higher) ±2 K for measured values <20 °C
Reproducibility	±0.5 % of measured value or ±0.5 K (whichever value is higher)
Nominal conditions	at ambient temperature +23 °C ±5 K, Emissivity factor 1.0 and calibration geometry
Temperature coefficient	±0.05 K / K or ±0.05 % of measured value / K (whichever value is higher)
Ambient temperature	depending on type -10 to +120 °C (with air cooling up to +200 °C) or -10 to +180 °C
Protective class	IP65 (NEMA-4) / IEC 60529
Relative humidity	10 to 95 % non-condensing
Housing	Stainless steel
Dimensions	L = 28 mm, Ø = 14 mm, Thread M12x1
Probe head cable	depending on type polyurethane (PUR) or fluoropolymer
Electronics:	integrated in the measuring head. For type MR784333x / 784343x: separate electronics.
Weight	50 g (with 1-meter cable)
Transmitter box	
Output (selectable)	0 to 5 V / 0 to 10 V; 0 to 20 mA / 4 to 20 mA (Temperature range can be programmed in each case.) Thermocouple, type J, K, R, S Not electrically isolated from supply voltage
Temperature resolution	±0.1 K for temperature range < 500 °C
Accuracy	±1 K for output mA / V ±1.5 K for output, thermocouple
Temperature coefficient	±0.02 K / K for output mA / V, ±0.05 K / K for output, thermocouple
Emissivity	0.100 to 1.100
Transmittance	0.100 to 1.000
Signal processing	Saving of maximum / minimum / average value retention period up to 998 seconds
Alarm output	zero-potential contact (semiconductor relays) 48 V / 300 mA
Power supply	8 to 32 VDC, maximum 6 W
Ambient temperature	-10 to +65 °C
Protective class	IP65 (NEMA-4) / IEC 60529
Relative humidity	10 to 95 % non-condensing
Housing	Zinc die casting
Dimensions	80 x 60 x 31.5 mm (LxWxH)
Weight	370 g

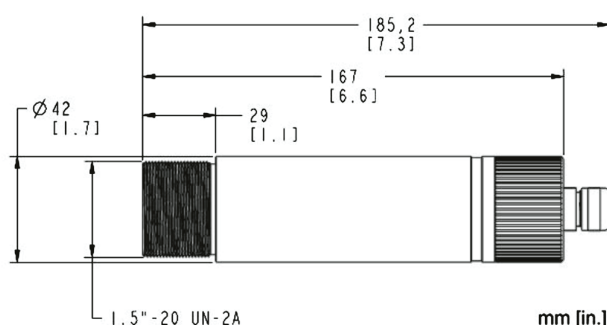
Dimensions



Measuring field (90% energy)



Infra-red transmitter for measuring the surface temperature AMiR 7834 probe head for industrial application, with mA output (two-wire technology)



- Precise measurement of the surface temperature in industrial processes.
- **New:** sturdy stainless steel housing, protection class IP65.
- Broad temperature range from -40 to 2000 °C.
- Several spectral ranges for a variety of materials and use cases.
- Emissivity of the measuring surface can be manually adjusted on the probe head.
- Several optical resolutions and focal points.
- **New:** integrated laser (except 7834-10) for easy positioning of the probe head. Supply of the laser via the USB port.
- Analog output 4 to 20 mA in two-wire technology.
- **New:** USB port for configuring the analog output range, further probe head parameters and the signal processing (average value, maximum value, and minimum value).
- Easy installation. Extensive range of accessories, i.a. a high temperature protective housing.
- Connection cable for ALMEMO® data logger. Sensor power supply via the ALMEMO® device.

! On request:
Intrinsically safe probe heads approved for various purposes in areas with potentially explosive atmosphere (gas/dust).

Type	Measuring range	Spectral range	Optical resolution / focal point (refer to Measuring Field Diagrams)	Order no.
AMiR 7834-10x , without laser, with plastic lens. i.a. suitable for food etc.				
AMiR 7834-10SF0	-20 to 600 °C	8 to 14 µm	15:1 / 101.3 mm at 1520 mm	MR783410SF0
AMiR 7834-10CF0	-20 to 600 °C	8 to 14 µm	7:1 / 7.1 mm at 50 mm	MR783410CF0
AMiR 7834-11x/-12x with laser, for low temperature measurements, i.a. thick plastics, asphalt, carpets, coated papers, thermoforming etc.				
AMiR 7834-11SF0	-20 to 600 °C	8 to 14 µm	33:1 / 46.1 mm at 1520 mm	MR783411SF0
AMiR 7834-11CF1	-20 to 600 °C	8 to 14 µm	33:1 / 2.3 mm at 76 mm	MR783411CF1
AMiR 7834-11CF2	-20 to 600 °C	8 to 14 µm	33:1 / 6.1 mm at 200 mm	MR783411CF2
AMiR 7834-12SF0	-40 to 1000 °C	8 to 14 µm	50:1 / 30.4 mm at 1520 mm	MR783412SF0
AMiR 7834-12CF2	-40 to 1000 °C	8 to 14 µm	50:1 / 4 mm at 200 mm	MR783412CF2
AMiR 7834-21x with laser, for blast furnace lining, flame hardening, brazing etc.				
AMiR 7834-21SF0	200 to 1000 °C	3.9 µm	33:1 / 46.1 mm at 1520 mm	MR783421SF0
AMiR 7834-21CF1	200 to 1000 °C	3.9 µm	33:1 / 2.3 mm at 76 mm	MR783421CF1
AMiR 7834-21CF2	200 to 1000 °C	3.9 µm	33:1 / 6.1 mm at 200 mm	MR783421CF2
AMiR 7834-31x with laser, for surface temperatures of glass for bending, hardening, glowing, sealing etc.				
AMiR 7834-31SF0	250 to 2250 °C	5 µm	33:1 / 46.1 mm at 1520 mm	MR783431SF0
AMiR 7834-41x with laser, for foils PET, FEP, acryl, nylon, PU, PVC etc.				
AMiR 7834-41SF0	10 to 360 °C	7.9 µm	33:1 / 46.1 mm at 1520 mm	MR783441SF0
AMiR 7834-51x with laser, for ferrous metals / non-ferrous metals, induction heating, blast furnaces etc.				
AMiR 7834-51SF0	500 to 2000 °C	2.2 µm	60:1 / 25.3 mm at 1520 mm	MR783451SF0
AMiR 7834-51CF1	500 to 2000 °C	2.2 µm	60:1 / 1.3 mm at 76 mm	MR783451CF1
AMiR 7834-51CF2	500 to 2000 °C	2.2 µm	60:1 / 3.3 mm at 200 mm	MR783451CF2

10/2021 • We reserve the right to make technical changes.

DAkkS- oder Factory calibration KI9xxx temperature for sensor (see chapter Calibration certificates).
DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.

Technical data:

Accuracy:	$\pm 1\%$ of the measured value respectively ± 1.0 K for the measured temperature $> 0^\circ\text{C}$, (whichever value is higher). for measured temperature $< 0^\circ\text{C}$: $\pm(1.0 \text{ K} + 0.1 \times (0^\circ\text{C} - \text{measured temperature}))$. measured temperature in $^\circ\text{C}$
Reproducibility:	$\pm 0,3\%$ of measured value respectively ± 0.3 K (whichever value is higher).
Response time:	130 ms, for 7834-11 30ms, for 7834-31 60 ms
Nominal conditions:	$+23^\circ\text{C} \pm 5$ K, Emissivity factor 1.0 and calibration geometry
Emissivity:	0.10 to 1.00 manually adjustable on the probe head
Signal processing:	Averaging, maximum and minimum value retention, extended maximum and minimum value retention, compensation of background temperature
Power supply:	12 to 24 VDC
Analog output:	via terminals, 4 to 20 mA linear, two-wire technology, load < 500 Ohm. Analog output range can be configured via USB
ALMEMO® application:	To acquire and save measured values, we recommend our ALMEMO® 4390-2 panel meters. For further ALMEMO® devices, see chapter ALMEMO® Measuring Instruments
Alarm relay:	via terminals, load capacity 24 V 150 mA 1 limit value configurable via USB
Digital interface:	USB 2.0, micro B-plug (only for sensor set-up)
Laser:	for positioning of the probe head, power supply via USB.
Operating temperature:	without cooling: -20 to 85°C , with air-cooling: 10 to 120°C with water-cooling: 10 to 175°C with Thermo jacket protection housing and water cooling: 10 to 315°C
Air humidity:	10 to 95 % RH at 30°C , non-condensing during operation and storage.
Material:	stainless steel (housing)
Protection class:	IP 65 (IEC 60529)
Dimension:	without water cooling housing: Length 186 mm, \varnothing 42 mm
Weight:	without water cooling housing: 500 g

Accessories

Order no.

ALMEMO® connecting cable, directly mounted on the probe head, length 2 meters, with ALMEMO® connector, programmed for the probe head's temperature range, sensor supply via ALMEMO® device (use of the device mains unit is recommended)

ZA7838AK

For further accessories (protective window, cooling housing, thermo jacket etc.), see the following pages

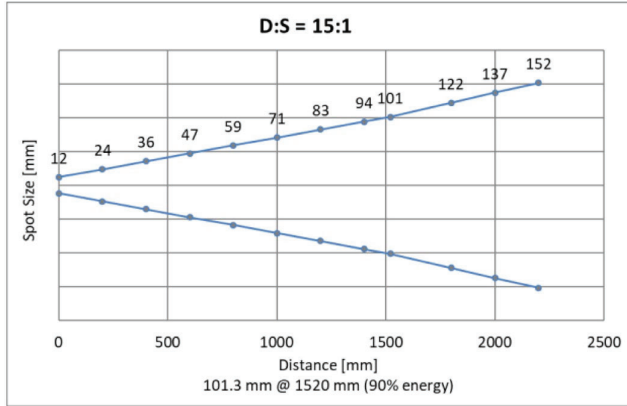
Option

Order no.

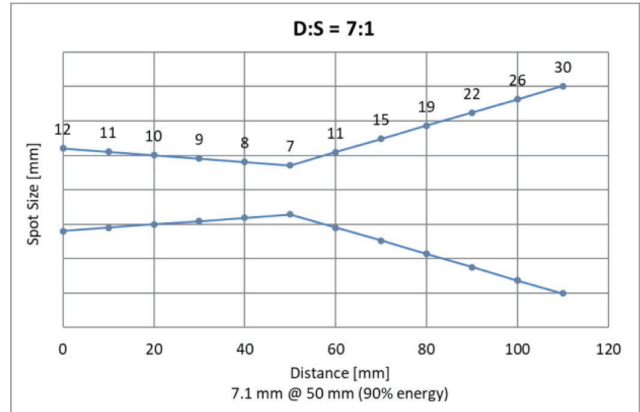
Factory test certificate (only with delivery of new devices).

OR7834KZ1

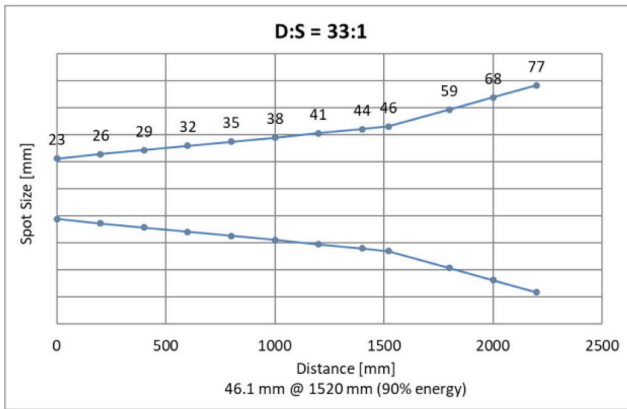
Measuring Field Diagrams



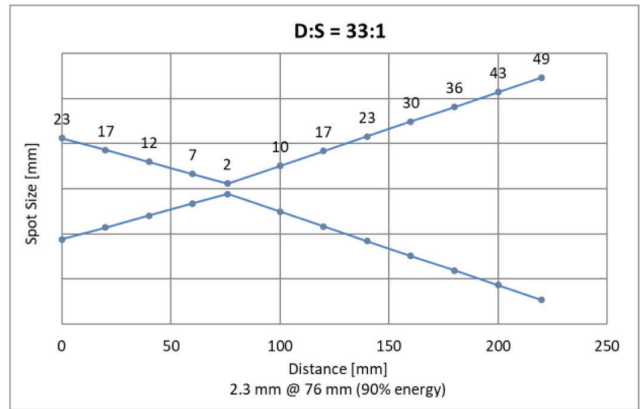
AMiR 7834-10SF0



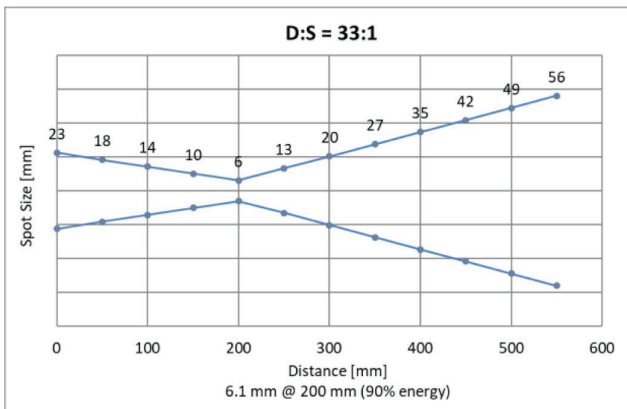
AMiR 7834-10CF0



AMiR 7834-11SF0
AMiR 7834-21SF0
AMiR 7834-31SF0
AMiR 7834-41SF0



AMiR 7834-11CF1
AMiR 7834-21CF1

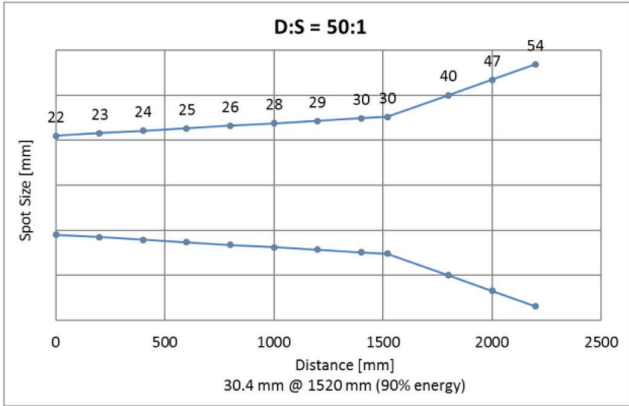


AMiR 7834-11CF2
AMiR 7834-21CF2

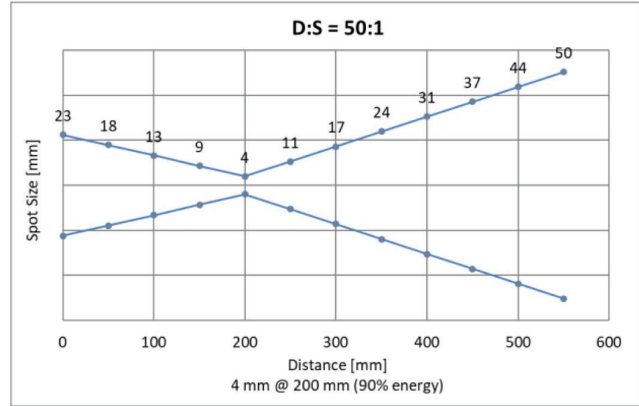
Infrared measuring technology



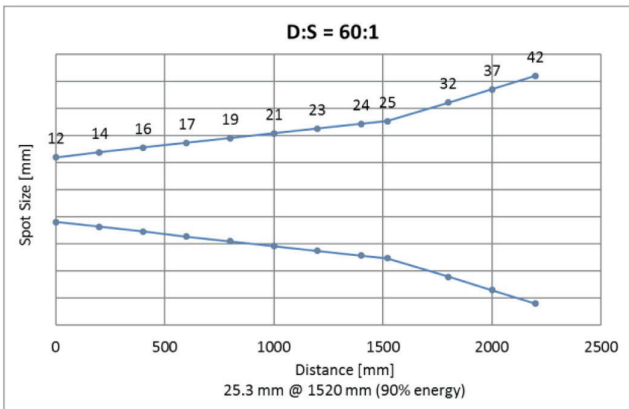
10/2021 • We reserve the right to make technical changes.



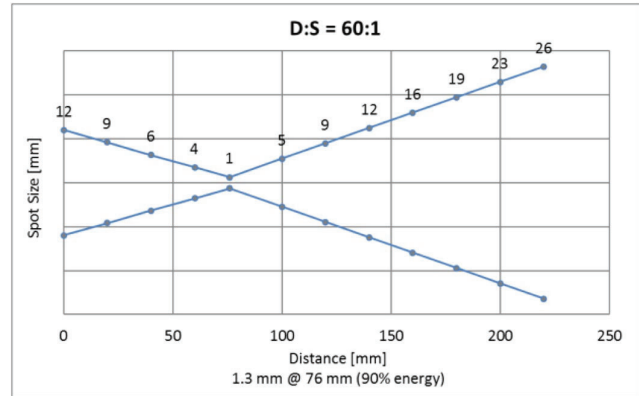
AMiR 7834-12SF0



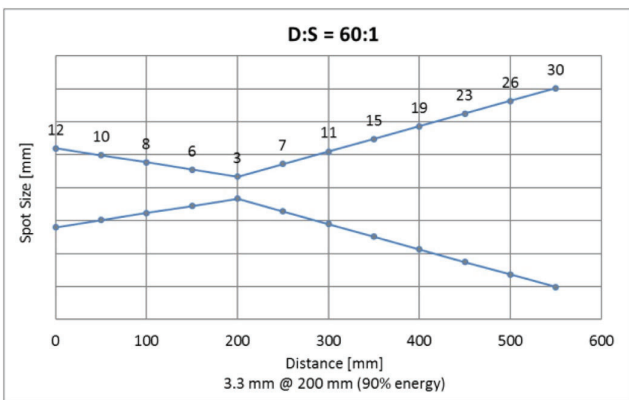
AMiR 7834-12CF2



AMiR 7834-51SF0

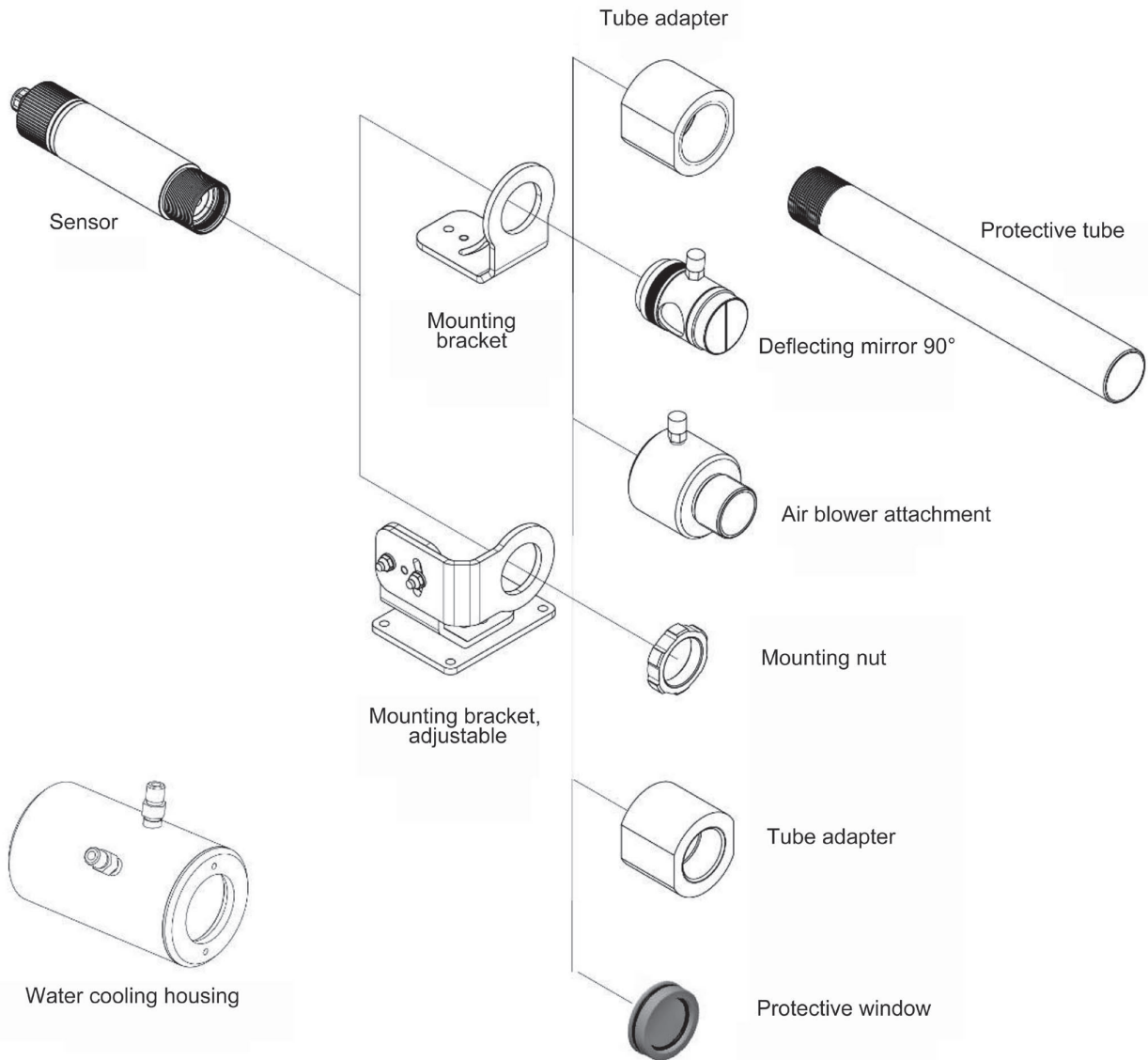


AMiR 7834-51CF1



AMiR 7834-51CF2

Accessories for the probe heads AMiR 7834 without the use of the thermo jacket protection housing



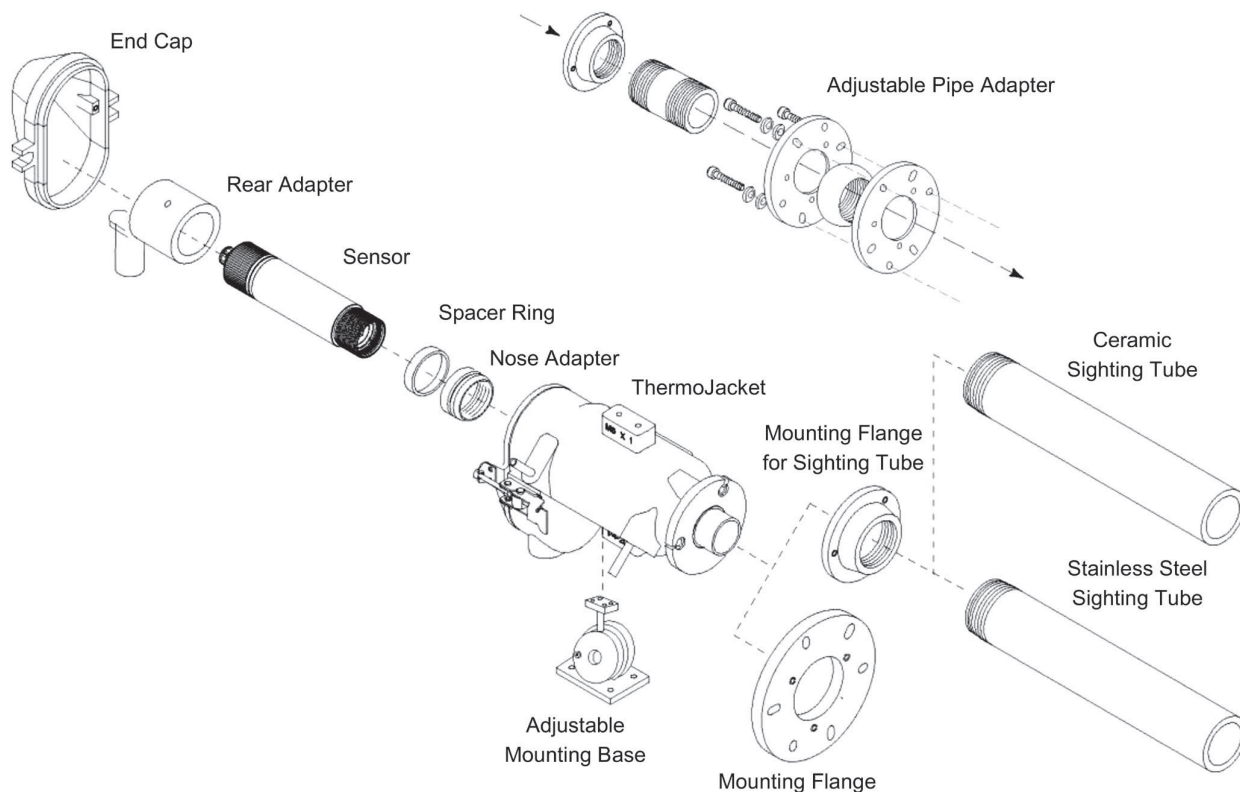
Accessories

Protective window attached for probe head MR 7834-10x, material: plastic foil	ZR7834SFLTPF
Protective window attached for probe head MR 7834-11x/-12x, material: zinc sulfide	ZR7834SFLT
Protective window attached for probe head MR 7834-21x, material: sapphire	ZR7834SFMT
Protective window attached for probe head MR 7834-31x/-41x, material: calcium fluoride	ZR7834SFG5P7
Protective window attached for probe head MR 7834-51x, material: glass	ZR7834SFHT
Water cooling housing including air blower attachment	ZR7834KL
Air blower attachment	ZR7834LB
Deflecting mirror 90°	ZR7834US
Mounting bracket, adjustable	ZR7834JH
Mounting bracket, rigid (spare)	ZR7834H
Securing nut (spare)	ZR7834BM
Tube adapter for protective tubes	ZR7834RA
Stainless steel protective tube, 30 cm	ZR7834RE
Ceramic protective tube, 30 cm	ZR7834RK

Order no.

Accessories for the probe heads AMiR 7834 using the thermo jacket protection housing

10/2021 • We reserve the right to make technical changes.



Accessories

Order no.

Thermo jacket protection housing	ZR7834SH
Mounting flange for thermo jacket	ZR7834TJMF
Adjustable mounting flange for thermo jacket	ZR7834TJMB
Adjustable tube adapter for thermo jacket	ZR7834JR
Mounting flange for protective tubes for thermo jacket	ZR7834TJFR
Stainless steel protective tube, 30 cm	ZR7834RE
Ceramic protective tube, 30 cm	ZR7834RK



MetiorLAB

+385 91 5281 812
+385 95 8615 902
INFO@METIORLAB.HR