

## Highlights

- Wide temperature range from 300°C to 3000°C
- Superior optical resolution up to 300:1
- Spot sizes down to 0,6 mm
- Variable focus from 0,3 m to 2,2 m
- Fast exposure time down to 1 ms
- Real time video monitoring and snapshot recording
- Through-the-lens sighting with video or laser aiming
- Digital RS485 communications (networkable)
- Real time ambient background radiation compensation
- Simultaneous analogue and digital outputs
- Programmable relay output
- Ambient temperatures to 315°C with ThermoJacket™
- Compact, rugged design, IP65 rated
- DataTemp® Multidrop software for remote configuration and monitoring

## Electrical Specifications

<b>Outputs</b>	
mA	0/4-20 mA
Relay	48 V, 300 mA, response time < 2 ms
RS485	2-wire or 4-wire, networkable to 32 sensors
Video	analog, NTSC, 510x492 pixel, FOV 8°
<b>Inputs</b>	Emissivity setting, background radiation compensation, trigger, laser on/off (software enabled)
<b>Power Supply</b>	24 VDC ±20%, 500 mA

## General Specifications

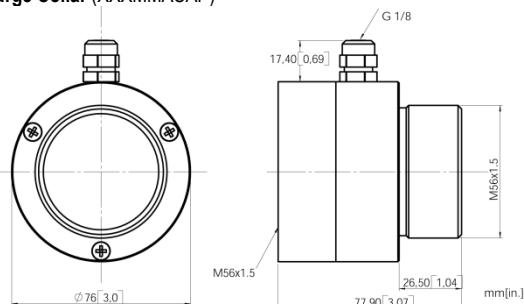
<b>Environmental Rating</b>	IP65 (IEC529)
<b>Ambient Temperature</b>	
without cooling	5 to 65°C (with video: max. 50°C)
with air cooling	up to 120°C
with water cooling	up to 175°C
with ThermoJacket	up to 315°C
<b>Storage Temperature</b>	-20 to 70°C
<b>Relative Humidity</b>	10 to 95%, non-condensing
<b>Shock</b>	IEC 68-2-27
<b>Vibration</b>	IEC 68-2-6
<b>Weight</b>	700 g

## Options

Options must be specified at time of order.

- Laser sighting (...L) or Video sighting (...V)
- Variable focus (...VF1)
- Water-Cooled Housing, incl. Air Purge Collar (...W)
- ISO Calibration Certificate, based on DKD certified probes (XXXMMCERT)

### Air Purge Collar (XXXMMACAP)



## Raytek Marathon Series

# MM 1M, 2M

## Datasheet



## Measurement Specifications

<b>Temperature Range</b>	
2ML	300 to 1100°C
2MH	450 to 2250°C
1ML	400 to 1740°C
1MH	540 to 3000°C
<b>Spectral Response</b>	
2M	1.6 $\mu$ m
1M	1 $\mu$ m
<b>System Accuracy<sup>1</sup></b>	
2ML	± (0.3% of reading + 2°C)
2MH, 1ML, 1MH	± (0.3% of reading + 1°C) <sup>5</sup>
<b>Repeatability<sup>3</sup></b>	± (0.1% of reading + 1°C) <sup>5</sup>
<b>Temperature Resolution</b>	
2ML, 1ML	0.1 K
2MH, 1MH	0.2 K
<b>Exposure Time<sup>4</sup> (95%)</b>	1 ms
<b>Emissivity</b>	0,100 to 1,150 in 0,001 increments
<b>Signal Processing</b>	Peak hold, valley hold, averaging, advanced peak hold, advanced valley hold, ambient background temperature compensation

<sup>1</sup> at 23°C ±5°C, emissivity = 1.0, and time response 1.0 s

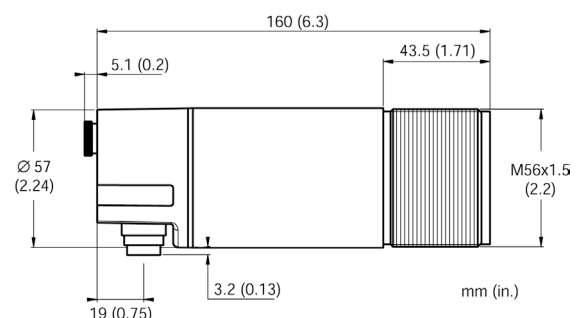
<sup>2</sup> whichever is greater

<sup>3</sup> at 23°C ±5°C

<sup>4</sup> response time (95%): 2 ms

<sup>5</sup> ± (2% of reading + 2°C) for  $T_{\text{meas}} < 450^\circ\text{C}$  (1ML) and for  $T_{\text{meas}} < 650^\circ\text{C}$  (1MH)

## Dimensions



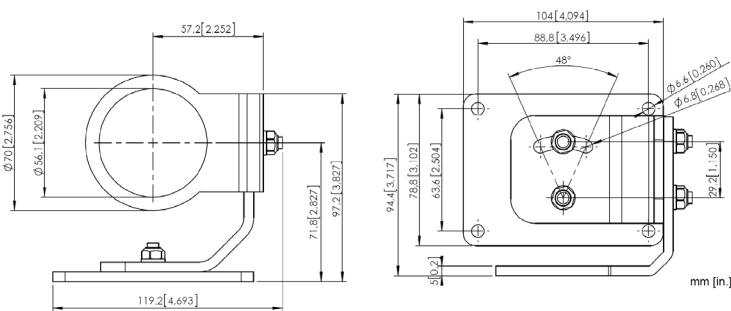
## Accessories

The models include through-the-lens sighting, mounting nut (stainless steel), fixed bracket (stainless steel), an operator's manual and DataTemp Multidrop Software.

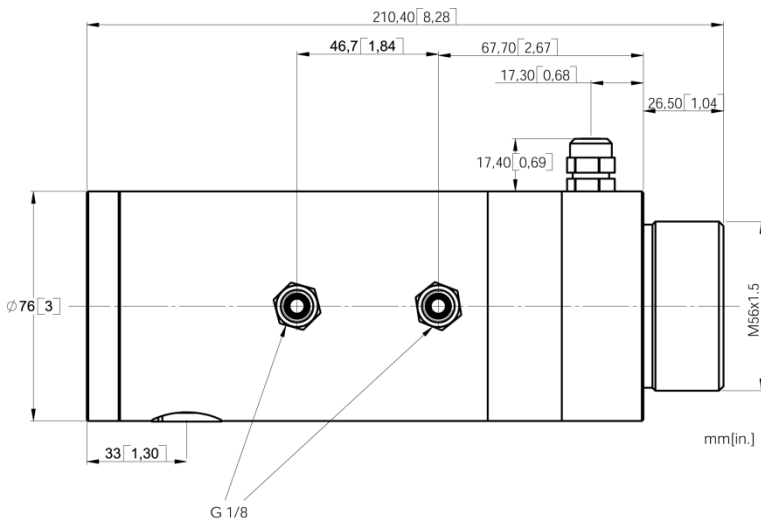
Additional accessories are available:

- Sight Tube made from stainless steel up to 800°C (XXXST12)
- Sight Tube made from ceramic up to 1500°C (XXXSTC12)
- Pipe Thread Adapter made from stainless steel (XXXMMACPA)
- Protective Window for 1M, 2M (XXXMMACTWGP)
- USB/RS485 Converter (XXXUSB485)
- Industrial Power Supply 100 / 240 VAC to 24 VDC, 1,25 A (XXXSYSPS)
- Low Temp Cable (XXX2CLTCB...)
- High Temp Cable (XXX2CCB...)
- Terminal Block (XXXMATB)
- Terminal Block including 24 VDC power supply (110 / 230 VAC input) and IP 65 rated housing (RAYMAPB)
- ThermoJacket enclosure for ambient temperatures to 315°C (RAYTXJT4), see also ThermoJacket datasheet

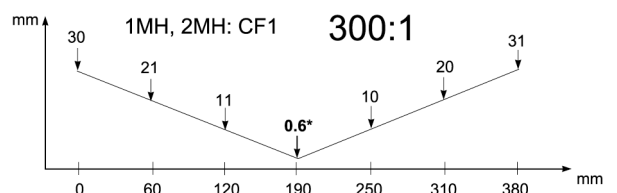
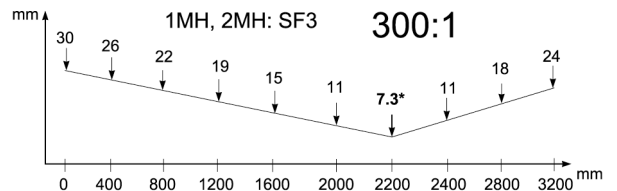
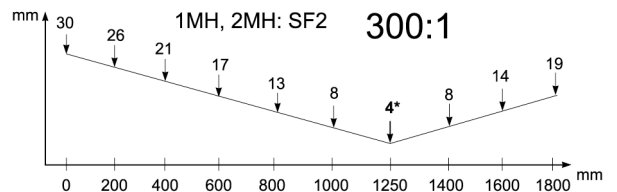
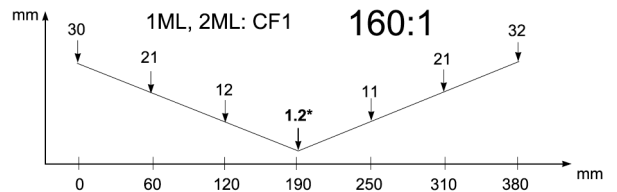
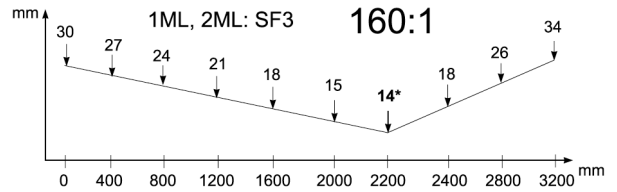
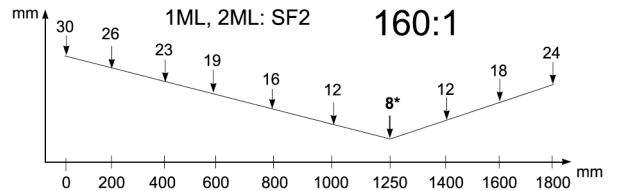
### Adjustable Bracket (XXXMMACAB)



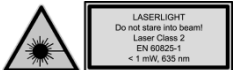
### Air/Water-Cooled Housing (...W)



## Optical Specifications



\* D:S for the focus point  
90% energy



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