

Wahl®

HEATSPY® MONITORS

FIXED NON-CONTACT INFRARED SENSORS

**Introducing the Next Generation
of Heat Spy Monitor Fixed
Infrared Sensors from
Wahl Instruments!**



Specifically designed for easy maintenance and high performance in harsh industrial environments, these sensors offer quick and easy integration into process measurement and control systems for non-contact temperature measurement of non-metallic surfaces or painted, coated or anodized metals.

Temperature ranges from 0° to 5792°F (-18° to 3200°C).

Heavy Duty Stainless Steel housing protects unit even in extreme conditions.

Functions in maximum ambient temperatures on most models from 122° to 392°F (50° to 200°C) with optional cooling jacket. Optional user friendly software allows setting of response time, peak measurement, and emissivity for maximum flexibility of applications.

Extreme Accuracy up to 0.3% of measured value $\pm 1.8^{\circ}\text{F}$ (1°C).

- **Covers All Spectral Ranges**
- **Fiber Optic & Compact Series available**
- **Laser or Thru the Lens Sighting**
- **Datalogging with Software included**
- **Optional Black Bodies for Recalibration**

Digital version of catalog may differ from printed version.

www.palmerwahl.com

1-800-421-2853

PALMER Wahl
INSTRUMENTATION GROUP

Continued Innovation Since 1836

ISO9001:2008 CERTIFIED

Heat Spy Monitor Information

Common Infrared Thermometer Applications

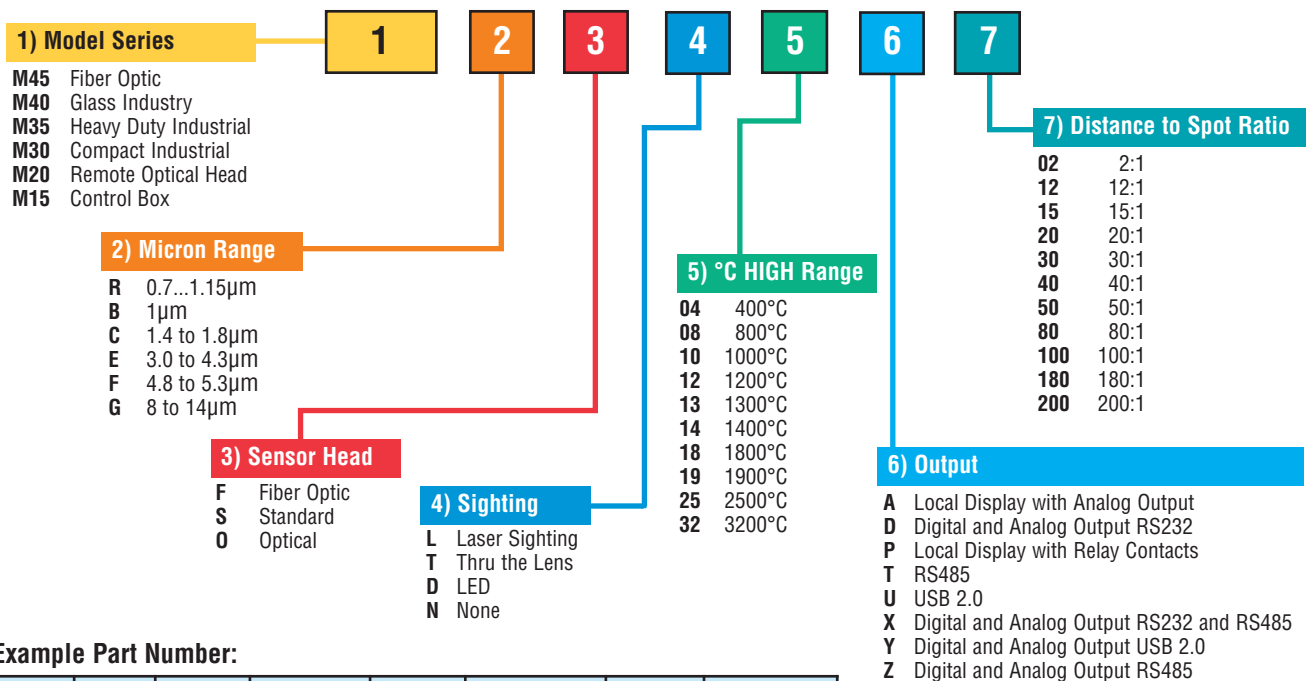
Cement Kiln - burning zones; preheaters
Combustion/Incinerator - hot gases and utility boilers, rotary kiln
Energy Conservation - insulation and heat flow studies
Filaments - annealing, drawing, heat treating
Food - baking, candy-chocolate processing, canning, freezing, frying, mixing, packing, roasting
Furnaces - flames, boiler tubes, catalytic crackers
Glass - drawing, manufacturing/processing bulbs, containers, TV tubes, fibers
Maintenance - appliances, bearings, current overloads, driving shafts, insulation, power lines, thermal leakage detection
Metals (Ferrous and Non-Ferrous) - annealing, billet extrusion, brazing, carbonizing, casting, forging, heat treating, inductive heating, rolling/strip mills, sintering, smelting
Quality Control - printed circuit boards, soldering, universal joints, welding, and metrology
Paint - curing, drying

Paper - coating, ink drying, printing, photographic emulsions, web profiles
Plastic Bulk - blow-molding, RIM, film extrusion, sheet thermoforming, casting
Plastics, Thin Film - photographic film materials, insulating films, PE, PP, PS, PA
Rubber - calendaring, casting, molding, profile extrusion, tires, latex gloves
Silicon - crystal growing, strand/fiber, wafer annealing, epitaxial deposition
Textile - curing, drying, fibers, spinning
Vacuum Chambers - refining, processing, deposition

Custom Solutions for your Applications
 Contact Wahl Customer Service for custom-made Instruments to your specifications.

Explanation of the Heat Spy Monitor part number configuration:

Note: Not all configurations are available! Check specifications for each product line for available models.



Example Part Number:

	Series	Micron Range	Sensor Head	Sighting	Temperature Range	Output	Distance to Spot Ratio
Code	M45	C	F	L	18	D	40

Example: **M45CFL18D40**

Fiber Optic Series, Spectral Range of 1.6µm, Fiber Optic Head, Laser Sighting, 1800°C, Digital and Analog Output RS232, 40:1 Distance to Spot Ratio.

Note: When ordering Accessories and Options, they should be listed as a separate line item.

Heat Spy Monitor Quick Find Guide

Table of Contents by Spectral Range					
Spectral Range	°C Range	°F Range	Distance to Spot Ratio	Series	Page #
1.6µm	250° to 1800°C	482° to 3272°F	20:1, 40:1, 80:1	M20-COD/COL	14-15
	260° to 1800°C	500° to 3272°F	50:1, 100:1, 200:1	M35-CSL/CST	8-9
	300° to 1800°C	572° to 3272°F	40:1, 80:1	M45-CFL	4-5
	400° to 1200°C	752° to 2192°F	80:1	M15-CSL	17
1µm	600° to 1800°C	1112° to 3272°F	100:1	M40-BFN	18
	600° to 1900°C	1112° to 3452°F	80:1	M20-BOD/BOL	14-15
	600° to 2500°C	1112° to 4532°F	100:1, 200:1	M35-BSL/BST	8-9
	750° to 2500°C	1382° to 4532°F	100:1, 180:1	M45-BFL	4-5
0.7...1.15µm	600° to 3200°C	1112° to 5792°F	50:1, 100:1, 200:1	M35-RSL/RST	10-11
	600° to 3200°C	1112° to 5792°F	40:1, 80:1, 100:1, 180:1	M45-RFL/RFN	4-7
	800° to 2500°C	1472° to 4532°F	80:1	M20-ROD/ROL	14-15
8 to 14µm	0° to 400°C	32° to 752°F	12:1	M30-GSN	13
	0° to 800°C	32° to 1472°F	2:1, 15:1	M20-GON	16
	0° to 1000°C	32° to 1832°F	50:1	M35-GSL	12
	0° to 1200°C	32° to 2192°F	30:1	M15-GSL	17

When choosing the right fixed infrared device for your application, it is necessary to be sure the spot size will be completely filled by the object being measured. Any area of the spot size not filled by the intended target object will average the temperature of other objects into the reading, and reduce accuracy.

Optics tables or diagrams are provided for each model for quick reference. For estimation purposes, divide the distance the IR sensor will be from the target by the size of the area to be measured. This will provide the approximate distance to spot ratio. Look for the distance/spot ratio to be equal to or larger than the ratio calculated.

Table of Contents by Sensor Type



M45 Fiber Optic Series,
Pgs 4-7



M35 Industrial Series,
Pgs 8-12



M30 Compact Series,
Pg 13



M20 Remote Optical Head
Pgs 14-16



M15 Control Box,
Pg 17



**M40 Fiber Optic Series for the
Glass Industry,** Pg 18



Accessories
Pg 19

Register your product at www.palmerwahl.com/register

Fiber Optic Series

1.6µm, 1µm &
0.7...1.15µm

M45 Series • Mono Fiber Cable Laser Sighting • Single & Two Color

12450-01
Optical Head 1
40:1 or 100:1



Base Unit

- Single-Color - High Accuracy, up to $\pm 0.3\%$ of Reading +1°C
- Two-Color - High Accuracy, up to $\pm 0.5\%$ of Reading +1°C
- Analog Output 4 to 20mA, 0 to 20mA, or 0 to 10V
- Wide Temperature Range
- Laser Targeting Light
- Small Spot Sizes
- Peak Picker

To order desired Optics Option simply add Optics Code from Table to end of part number.

Optics Codes					
	Temperature Range	M45-CFL	M45-BFL	M45-RFL	
Working Distance		Spot Size (mm/in)			
	CODE (mm)	40:1	100:1	40:1	100:1
Optical Head 1	120	3	1.2	3	1.2
	260	6.5	2.6	6.5	2.6
	700	17.5	7	17.5	7
		80:1	180:1	80:1	180:1
Optical Head 2	90	1.2	0.5	1.2	0.5
	200	2.5	1	2.5	1
	600	7.5	3	7.5	3
	4500	57	23	57	23

Wahl's M45-CFL, M45-BFL, and M45-RFL Series Digital Fiber Optic Infrared Sensors offer a high level of accuracy and excellent stability. Specially designed for applications under harsh conditions in **Single and Two Color**. These models offer laser pilot light sighting that can be used in areas with high ambient temperatures (up to 250°C) without cooling, and in areas where strong electromagnetic interference can be avoided using fiber optic cable. Main parameters such as emissivity and response time can be set. Additional parameters such as sub-range, maximum value storage and address, can be adjusted via included PC software.

- Two Color - Single Color Switchable
- Digital Interface RS232 or RS485
- Rugged Mono Fiber Optics
- Datalogging with included Software
- High Optical Resolution
- Fiber Optics and Optical Head withstand up to 250°C Ambient
- Includes 2.5m Mono Fiber Optic Cable (optional lengths below)
- Includes 5m Optical Head Connection Cable with Connector



12450-02
Optical Head 2
80:1 or 180:1

M45-CFL, M45-BFL, M45-RFL ACCESSORIES - for more info see page 23

- 12450-01 Replacement Optical Head 1 - 40:1 or 100:1
- 12450-02 Replacement Optical Head 2 - 80:1 or 180:1
- 12450-18 Optical Head Connection Cable, 12 Core/4 Wire, 5m
- 12450-19 Optical Head Connection Cable, 12 Core/4 Wire, 10m
- 12450-20 Optical Head Connection Cable, 12 Core/4 Wire, 20m
- 12450-29 Water Cooling Jacket with Air Purge for Optical Head 2
- 12450-37 Air Purge Unit for Optical Head 1
- 12450-38 Air Purge Unit for Optical Head 2
- 12450-39 Air Purge Unit with Ceramic Sighting Tube
- 12450-40 Adjustable Mount Support for Optical Head 1
- 12450-41 Adjustable Mount Support for Optical Head 2
- 12450-43 Temp Indicator, Power Supply, AC Input, 4/20 Output
- 12450-44 Power Supply for 110/220VAC, 24VDC, 0.7A
- 12450-45 Interface Module RS485 to RS232
- 12450-46 P-120, Temperature Indicator with Parameterizer

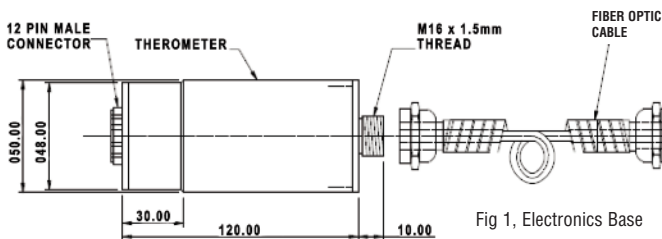
Fiber Optic Cable for M45-CFL and M45-RFL

- 12450-04 Mono Fiber Optic Cable, 800° to 2500°C, Replacement, 2.5m
- 12450-05 Mono Fiber Optic Cable, 800° to 2500°C, Upgrade to 5m
- 12450-06 Mono Fiber Optic Cable, 800° to 2500°C, Upgrade to 7.5m
- 12450-07 Mono Fiber Optic Cable, 800° to 2500°C, Upgrade to 10m
- 12450-08 Mono Fiber Optic Cable, 800° to 2500°C, Upgrade to 15m
- 12450-09 Mono Fiber Optic Cable, 800° to 2500°C, Upgrade to 30m

Fiber Optic Cable for M45-BFL and M45-RFL

- 12450-10 Mono Fiber Optic Cable, 1000° to 3200°C, Replacement, 2.5m
- 12450-11 Mono Fiber Optic Cable, 1000° to 3200°C, Upgrade to 5m
- 12450-12 Mono Fiber Optic Cable, 1000° to 3200°C, Upgrade to 7.5m
- 12450-13 Mono Fiber Optic Cable, 1000° to 3200°C, Upgrade to 10m
- 12450-14 Mono Fiber Optic Cable, 1000° to 3200°C, Upgrade to 15m
- 12450-15 Mono Fiber Optic Cable, 1000° to 3200°C, Upgrade to 30m

Accessories and Options are not CE



Applications

- | | | |
|-----------|-------------------|----------------|
| Annealing | Melting | Pouring Stream |
| Welding | Rotary Kilns | Rolling Mills |
| Forging | Casting | |
| Sintering | Induction Heating | |



PALMER Wahl
INSTRUMENTATION GROUP
Continued Innovation Since 1836
ISO 9001:2008 CERTIFIED

Register your product at www.palmerwahl.com/register

(800) 421-2853 • FAX (828) 658-0728 • www.palmerwahl.com

PW1240
07/12 Rev C

M45-CFL • BFL • RFL Series Specifications

1.6µm, 1µm & 0.7...1.15µm

Specifications					
Optical Head 1 Model	RS232	M45-CFL18D40	M45-BFL25D100	M45-RFL25D40	M45-RFL32D100
	RS485	M45-CFL18Z40	M45-BFL25Z100	M45-RFL25Z40	M45-RFL32Z100
Optical Head 2 Model	RS232	M45-CFL18D80	M45-BFL25D180	M45-RFL25D80	M45-RFL32D180
	RS485	M45-CFL18Z80	M45-BFL25Z180	M45-RFL25Z80	M45-RFL32Z180
Temperature Range		300° to 1800°C 572° to 3272°F	750° to 2500°C 1382° to 4532°F	800° to 2500°C 1472° to 4532°F	1000° to 3200°C 1832° to 5792°F
Spectral Range		1.6µm	1µm	Two Color 0.7...1.15µm	
Head	Fiber Optic Head				
Sighting	Laser				
Distance to Spot Ratio		Optical Head 1 - 40:1 Optical Head 2 - 80:1	Optical Head 1 - 100:1 Optical Head 2 - 180:1	Optical Head 1 - 40:1 Optical Head 2 - 80:1	Optical Head 1 - 100:1 Optical Head 2 - 180:1
Emissivity	0.1 to 1.0 Adjustable			0.1 to 1.0 Adjustable (Single Color Mode)	
E-Slope	N/A			0.75 to 1.25 Adjustable (Two Color Mode)	
Photo Detector		InGaAs	Si	Si/Si	
Response Time	2 mS, Adjustable up to 10 S			20 mS Adjustable up to 10 S	
Accuracy & Repeatability	±0.3% of reading +1°C			±0.5% of reading +1°C	
Analog Output	4-20 mA, 0-20mA, 0-10V, User Selectable				
Digital Output	RS232 or RS485				
Operating Temperature	Max. 452°F (250°C) at Fiber Optics Cable & Optical Head, 32° to 158°F (0° to 70°C) at Infrared Sensor End				
Operating Humidity	0 - 100%				
Storage Temperature	-20° to 70°C (-4° to 158°F)				
Power Supply	24 V DC				
Laser Power	< 2mW				
Protection Class	IP65				
Isolation	Power supply is galvanically isolated from the output				
Fiber Optic	2.5 meter standard (5, 7.5, 10, 15, 30 meter available)				
Base Unit Dimensions Housing / Weight	Diameter: 1.96 inch, Length: 4.64 inch (Diameter: 50 mm, Length: 118 mm) Stainless Steel / 1.32 lb (598 g)				
Optical Head Dimensions Housing / Weight	Head 1	Diameter: 0.57 inch, Length: 1.73 inch (Diameter: 14.5 mm, Length: 44 mm) Thread M16 x 1.0 mm			
		Stainless Steel / 1.41 oz (40 g)			
	Head 2	Diameter: 0.98 inch, Length: 2.93 inch (Diameter: 25 mm, Length: 74.5 mm) Thread M25 x 1.5 mm			
		Stainless Steel / 4.23 oz (120 g)			
Parameters Adjustable via software	Response Time, Peak Picker, Average, Scaleable Current or Voltage, Analog Output Sub-Range, Emissivity, Interval of Data Storage			Emissivity, Emissivity Slope, Analog Output, Response Time, Peak Picker, Average, Analog Output Sub-Range, Scaleable Current or Voltage, Single-Two Color Switchable	
Parameters Readable via software	Measured Temperature, Temperature Graph, Internal Temperature of Sensor, Brightness Temperature				
Included Accessories	Optical Head, 2.5m Mono Fiber Optic Cable, Inspection Sheet, Software, 5m Optical Head Connection Cable with Connector, and User Manual				

Specifications subject to change without notice

Heat Spy Monitor Software

- Emissivity Setting
- Response Time Setting
- Peak Picker Setting
- Average Temperature Setting
- Graphs
- Data Logging



Register your product at www.palmerwahl.com/register

1µm &
0.7...1.15µm

M45 Series • Multi Fiber Cable No Sighting • Two Color



Base Unit

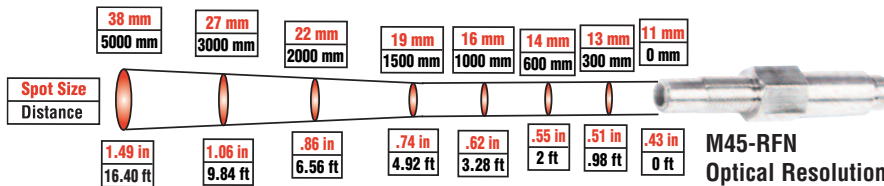
Wahl's M45-RFN Digital Fiber Optic Infrared Sensors are highly accurate sensors, specially designed for applications under harsh conditions.

Two-Color models with no sighting can be used in areas with high ambient temperatures (up to 250°C) without cooling, and in areas where strong electromagnetic interference can be avoided using fiber optic cable. Main parameters such as emissivity and response time can be set. Additional parameters such as sub-range, maximum value storage and address, can be adjusted via included PC software.

- High Accuracy, $\pm 0.5\%$ of Reading $+1^\circ\text{C}$
- Wide Temperature Range 600°C to 3200°C
- Digital Interface RS232 or RS485
- Datalogging with included Software
- High Optical Resolution
- Two Color, One Color Switchable

Fast Response Time: 20mS Adjustable up to 10S

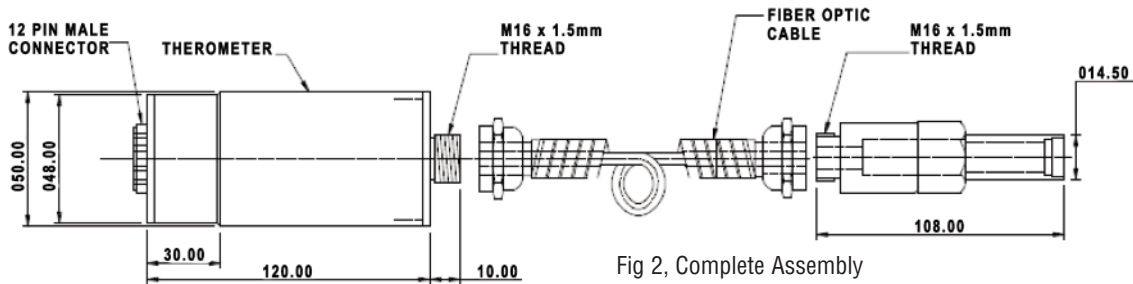
- Very Good Stability
- Rugged Stainless Steel Housing
- User Friendly Software
- Includes 5m Multi Fiber Optic Cable with Heavy Duty SS Conduit
- Includes 5m Optical Head Connection Cable with Connector



M45-RFN
Optical Resolution



12450-35 Air Purge Unit,
with Ceramic Sighting Tube



Heat Spy Monitor Software

- Emissivity Setting
- Response Time Setting
- Peak Picker Setting
- Average Temperature Setting
- Graphs
- Data Logging

Applications

- | | | |
|-------------------|-----------------|---------------|
| Induction Heating | Forging | Melting |
| Annealing | Sintering | Rolling Mills |
| Welding | Crystal Growing | Rotary Kilns |



M45-RFN ACCESSORIES - for more info see page 23

- 12450-03 Replacement Optical Head
- 12450-16 Multi Fiber Optic Cable, Replacement, 5m
- 12450-17 Multi Fiber Optic Cable, Upgrade to 10m
- 12450-18 Optical Head Connection Cable, 12 Core/4 Wire, 5m
- 12450-19 Optical Head Connection Cable, 12 Core/4 Wire, 10m
- 12450-20 Optical Head Connection Cable, 12 Core/4 Wire, 20m
- 12450-34 Air Purge Unit with 300mm INCONEL Sighting Tube
- 12450-35 Air Purge Unit with Ceramic Sighting Tube
- 12450-43 Temp Indicator, Power Supply, AC Input, 4/20 Output
- 12450-44 Power Supply for 110/220VAC, 24VDC, 0.7A

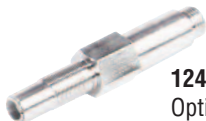
Accessories and Options are not CE

Register your product at www.palmerwahl.com/register

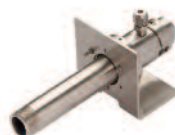
M45-RFN Series Specifications

Specifications				
Fiber Optic Head	RS232	M45-RFN18D100	M45-RFN32D100	M45-RFN25D100
	RS485	M45-RFN18Z100	M45-RFN32Z100	M45-RFN25Z100
Temperature Range	600° to 1800°C 1112° to 3272°F		750° to 3200°C 1382° to 5792°F	
Spectral Range	Two Color 0.7...1.15µm			
Head	Fiber Optic Head			
Sighting	None			
Distance to Spot Ratio	Distance 1m, Spot size 16mm			Distance 1m, Spot size 16mm
Emissivity	0.1 to 1.0 Adjustable			0.1 to 1.0 Adjustable (Single Color Mode)
E-Slope	NA			0.75 to 1.25 Adjustable (Two Color Mode)
Photo Detector	Si			Si/Si
Response Time	20 mS Adjustable up to 10 S			20 mS Adjustable up to 10 S
Optical Resolution	Distance 1m, Spot Size 16mm, see optical drawing for other distances			
Accuracy & Repeatability	±0.5% of reading +1°C			
Analog Output	4-20 mA, 0-20mA, 0-10V, User Selectable			
Digital Output	RS232 or RS485			
Operating Temperature	Max. 452°F (250°C) at Fiber Optics Cable & Optical Head, 32° to 158°F (0° to 70°C) at Infrared Sensor End			
Operating Humidity	0 - 100%			
Storage Temperature	-20° to 70°C (-4° to 158°F)			
Power Supply	24 V DC			
Protection Class	IP65			
Isolation	Power supply is galvanically isolated from the output			
Fiber Optic	5m Multi Fiber Cable in Heavy Duty Stainless Steel Flexible Conduit			
Base Unit Dimensions Housing / Weight	Diameter: 1.96 inch, Length: 4.64 inch (Diameter: 50 mm, Length: 118 mm)			
	Stainless Steel / 1.32 lb (598 g)			
Optical Head 3 Dimensions Housing / Weight	Diameter: 0.5708 inch, Length: 4.25 inch (Diameter: 14.50 mm, Length: 108 mm) Thread M16 x 1.5 mm			
	Stainless Steel / 6 oz (170 g)			
Parameters Adjustable via Software	Response Time, Peak Picker, Average, Scaleable Current or Voltage, Analog Output Sub Range, Emissivity, Interval of Data Storage			Emissivity, Emissivity Slope, Analog Output, Response Time, Peak Picker, Average, Scaleable Current or Voltage, Single-Two Color Switchable
Parameters Readable via software	Measured Temperature, Temperature Graph, Internal Temperature of Sensor, Brightness Temperature			
Included Accessories	Optical Head, 5m Multi Fiber Optic Cable in Heavy Duty Stainless Steel Conduit, Inspection Sheet, Software, 5m Optical Head Connection Cable with Connector, and User Manual			

Specifications subject to change without notice



12450-03
Optical Head 3
100:1



12450-34 Air Purge Unit, with
300mm INCONEL Sighting Tube



Register your product at www.palmerwahl.com/register

M35 Series • Heavy Duty Industrial Laser or Thru the Lens Sighting



The M35-CSL/T and M35-BSL/T Series high accuracy digital infrared sensors with laser or through the lens sighting provide high performance and low maintenance non-contact temperature measurements. The emissivity, analog output sub-range, or response time and peak picker can be preset at the factory or adjusted through included software. This enables the instruments to be adapted to various measuring tasks. These infrared sensors have a heavy duty IP65 Stainless Steel housing that provides reliability and safety even in harsh industrial environments. A variety of optics with fixed focus can be easily used in all industrial areas. These features provide highly accurate measurements at the resolution required.

- High Accuracy, $\pm 0.3\%$ of Reading $+1^\circ\text{C}$
- Small Spot Size
- Rugged Stainless Steel Housing
- User Friendly Software
- Includes 5m Optical Head Connection Cable with Connector

- Wide Temperature Range
- Fully Digital
- Fast Response Time
- Very Good Stability

To order desired Optics Option simply add Optics Code from Table to end of part number.

Optics Codes					
Temperature Range	260° to 1400°C 500° to 2552°F	300° to 1300°C 572° to 2372°F	350° to 1800°C 662° to 3272°F	600° to 1900°C 1112° to 3452°F	750° to 2500°C 1382° to 4532°F
Focus Distance	Spot Size (mm/inch)				
CODE (mm)	50:1	100:1	200:1	100:1	200:1
300	6	3	1.5	3	1.5
500	10	5	2.5	5	2.5
700	14	7	3.5	7	3.5
1000	20	10	5	10	5
1500	30	15	7.5	15	7.5
2000	40	20	10	20	10
2500	50	25	12.5	25	12.5
3000	60	30	15	30	15
5000	100	50	25	50	25

Heat Spy Monitor Software

- Emissivity Setting
- Response Time Setting
- Peak Picker Setting
- Average Temperature Setting
- Graphs
- Data Logging



12450-32 Air Purge with Mounting Bracket



12450-33 Mounting Support

M35-CSL/CST, M35-BSL/BST ACCESSORIES - see page 23

- 12450-18 Optical Head Connection Cable, 12 Core/4 Wire, 5m
- 12450-19 Optical Head Connection Cable, 12 Core/4 Wire, 10m
- 12450-20 Optical Head Connection Cable, 12 Core/4 Wire, 20m
- 12450-30 Water Cooling Jacket with Air Purge & Adjustable Flange
- 12450-31 Adjustable Mounting Stand
- 12450-32 Air Purge Unit with Mounting Bracket
- 12450-33 Mounting Support
- 12450-43 Temp Indicator, Power Supply, AC Input, 4/20 Output
- 12450-44 Power Supply for 110/220VAC, 24VDC, 0.7A
- 12450-45 Interface Module RS485 to RS232
- 12450-46 P-120, Temperature Indicator with Parameterizer

Accessories and Options are not CE



M35-CSL • CST • BSL • BST Series Specifications

Heavy Duty Industrial Series
1.6µm & 1µm

Specifications						
Laser Sighting	RS232	M35-CSL14D50	M35-CSL13D100	M35-CSL18D200	M35-BSL19D100	M35-BSL25D200
	RS485	M35-CSL14Z50	M35-CSL13Z100	M35-CSL18Z200	M35-BSL19Z100	M35-BSL25Z200
Thru the Lens Sighting	RS232	M35-CST14D50	M35-CST13D100	M35-CST18D200	M35-BST19D100	M35-BST25D200
	RS485	M35-CST14Z50	M35-CST13Z100	M35-CST18Z200	M35-BST19Z100	M35-BST25Z200
Temperature Range		260° to 1400°C 500° to 2552°F	300° to 1300°C 572° to 2372°F	350° to 1800°C 662° to 3272°F	600° to 1900°C 1112° to 3452°F	750° to 2500°C 1382° to 4532°F
Spectral Range		1.6µm			1µm	
Head		Standard				
Sighting		Laser or Thru the Lens				
Distance to Spot Ratio		50:1	100:1	200:1	100:1	200:1
Emissivity		0.1 to 1.0 Adjustable				
Photo Detector		InGaAs			Si	
Response Time		2 mS Adjustable up to 10 S				
Accuracy & Repeatability		±0.3% of reading +1°C				
Analog Output		4-20 mA, 0-20mA, 0-10V, User Selectable				
Digital Output		RS232 or RS485				
Operating Temperature		0° to 70°C (32° to 158°F)				
with Cooling Jacket		0° to 200°C (32° to 392°F)				
Operating Humidity		0 - 100%				
Storage Temperature		-20° to 70°C (-4° to 158°F)				
Power Supply		24 V DC				
Laser Power		<1mW (with external switch)				
Protection Class		IP65				
Isolation		Power supply is galvanically isolated from the output				
Head Dimensions Housing / Weight		Diameter: 1.96 inch, Length: 4.64 inch (Diameter: 50 mm, Length: 118 mm)				
		Stainless Steel / 1.32 lb (598 g)				
Parameters Adjustable via software		Response Time, Peak Picker, Average, Analog Output Sub-Range, Emissivity, Interval of Data Storage				
Parameters Readable via software		Measured Temperature, Temperature Graph, Scaleable Current or Voltage, Sensor Internal Temperature of Sensor, Brightness Temperature				
Included Accessories		5m Optical Head Connection Cable with Connector, Inspection Sheet, Software, and User Manual				

Specifications subject to change without notice



Applications

Induction Heating	Sintering
Casting	Melting
Annealing	Rolling
Welding	Hardening
Forging	



Register your product at www.palmerwahl.com/register



M35 Series • Heavy Duty Industrial Laser or Thru the Lens Sighting Two Color



To order desired Optics Option simply add Optics Code from Table to end of part number.

Optics Codes			
Temperature Range	600° to 1800°C 1112° to 3272°F	800° to 2500°C 1472° to 4532°F	1000° to 3200°C 1832° to 5792°F
Focus Distance	Spot Size (mm/inch)		
CODE (mm)	50:1	100:1	200:1
300	6	3	1.5
500	10	5	2.5
700	14	7	3.5
1000	20	10	5
1500	30	15	7.5
2000	40	20	10
2500	50	25	12.5
3000	60	30	15
5000	100	50	25

The M35-RSL, and M35-RST Series Two-Color high accuracy digital infrared sensors with laser pilot light provide high performance and low maintenance non-contact temperature measurements. The emissivity, analog output sub-range or response time and peak picker can be preset at the factory or adjusted through included software. This enables the instruments to be adapted to various measuring tasks. These infrared sensors have a heavy duty Stainless Steel housing which provides reliability and safety even in harsh industrial environments. A variety of optics with fixed focus can be easily used in all industrial areas. These features provide highly accurate measurements at the resolution required.

- High Accuracy, ±0.5% of Reading +1°C
- Two Color, One Color Switchable
- Wide Temperature Range
- Digital Interface
- Small Spot Size
- Fast Response Time
- Very Good stability
- Rugged Stainless Steel
- User Friendly Software
- Includes 5m Optical Head Connection Cable with Connector



12450-43 Temperature Indicator and Power Supply, AC Input, 4/20 Output, and Alarm



12450-45 Interface Module RS485 to RS232, Power Supply: 230 VAC or 24V DC Isolated

Heat Spy Monitor Software

- Emissivity Setting
- Average Temperature Setting
- Response Time Setting
- Graphs
- Peak Picker Setting
- Data Logging

M35-RSL, M35-RST ACCESSORIES - for more info see page 23

- 12450-18** Optical Head Connection Cable, 12 Core/4 Wire, 5m
- 12450-19** Optical Head Connection Cable, 12 Core/4 Wire, 10m
- 12450-20** Optical Head Connection Cable, 12 Core/4 Wire, 20m
- 12450-30** Water Cooling Jacket with Air Purge & Adjustable Flange
- 12450-31** Adjustable Mounting Stand
- 12450-32** Air Purge Unit with Mounting Bracket
- 12450-33** Mounting Support
- 12450-43** Temp Indicator, Power Supply, AC Input, 4/20 Output
- 12450-44** Power Supply for 110/220VAC, 24VDC, 0.7A
- 12450-45** Interface Module RS485 to RS232
- 12450-46** P-120, Temperature Indicator with Parameterizer

Accessories and Options are not CE



M35-RSL • RST Series Specifications

Specifications				
Laser Sighting	RS232	M35-RSL18D50	M35-RSL25D100	M35-RSL32D200
	RS485	M35-RSL18Z50	M35-RSL25Z100	M35-RSL32Z200
Thru the Lens Sighting	RS232	M35-RST18D50	M35-RST25D100	M35-RST32D200
	RS485	M35-RST18Z50	M35-RST25Z100	M35-RST32Z200
Temperature Range	600° to 1800°C 1112° to 3272°F		800° to 2500°C 1472° to 4532°F	1000° to 3200°C 1832° to 5792°F
Spectral Range	Two Color 0.7...1.15µm			
Head	Standard			
Sighting	Laser or Thru the Lens			
Distance to Spot Ratio	50:1	100:1	200:1	
Emissivity	0.1 to 1.0 Adjustable (Single Color Mode)			
E-Slope	0.75 to 1.25 Adjustable (Two Color Mode)			
Photo Detector	Si/Si			
Response Time	20 mS Adjustable up to 10 S			
Accuracy & Repeatability	±0.5% of reading +1°C			
Analog Output	4-20 mA, 0-20mA, 0-10V, User Selectable			
Digital Output	RS232 or RS485			
Operating Temperature	0° to 70°C (32° to 158°F)			
with Cooling Jacket	0° to 200°C (32° to 392°F)			
Operating Humidity	0 - 100%			
Storage Temperature	-20° to 70°C (-4° to 158°F)			
Power Supply	24 V DC			
Laser Power	< 2mW			
Protection Class	IP65			
Isolation	Power supply is galvanically isolated from the output			
Head Dimensions Housing / Weight	Diameter: 1.96 inch, Length: 4.64 inch (Diameter: 50 mm, Length: 118 mm)			
	Stainless Steel / 1.32 lb (598 g)			
Parameters Adjustable via Software	Emissivity, Emissivity Slope, Analog Output, Address, Switch Off Limit, Response Time, Peak Picker, Analog Output Sub Range, Scaleable Current or Voltage, Single-Two Color Switchable			
Parameters Readable via software	Measured Temperature, Temperature Graph, Internal Temperature of Sensor, Temperature Brightness 1, Temperature Brightness 2			
Included Accessories	5m Optical Head Connection Cable with Connector, Inspection Sheet, Software, and User Manual			

Specifications subject to change without notice



Applications

- | | |
|-------------------|-----------------|
| Induction Heating | Melting |
| Annealing | Rolling Mills |
| Welding | Rotary Kilns |
| Forging | Crystal Growing |
| Sintering | |



Register your product at www.palmerwahl.com/register



Heavy Duty Industrial Series

8 to 14µm

M35 Series • Heavy Duty Industrial Laser Sighting • Optional Optics



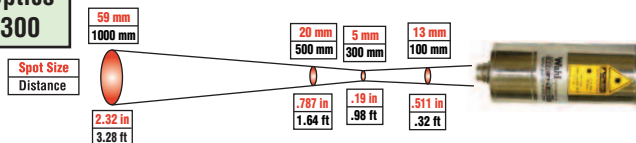
Wahl's M35-GSL Series are high accuracy digital infrared sensors, designed for easy integration into standard 4-wire systems. Unit includes an onboard USB port. The emissivity, analog output sub-range or response time and peak picker can be preset at the factory or adjusted through software. These infrared sensors have a heavy duty Stainless Steel housing which provides reliability and safety even in harsh industrial environments. Select from the Optics options below to best suit your application.

M35-GSL ACCESSORIES - for more info see page 23

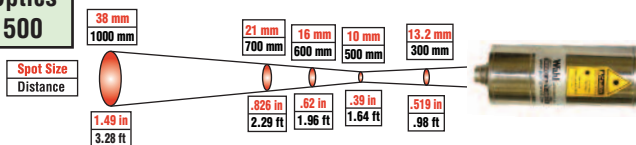
- 12450-18** Optical Head Connection Cable, 12 Core/4 Wire, 5m
- 12450-19** Optical Head Connection Cable, 12 Core/4 Wire, 10m
- 12450-20** Optical Head Connection Cable, 12 Core/4 Wire, 20m
- 12450-25** Optical Head Connection Cable, 3 Core/2 Wire, 1/2m
- 12450-26** Optical Head Connection Cable, 3 Core/2 Wire, 5m
- 12450-27** Optical Head Connection Cable, 3 Core/2 Wire, 10m
- 12450-30** Water Cooling Jacket with Air Purge & Adj Flange
- 12450-31** Adjustable Mounting Stand
- 12450-32** Air Purge Unit with Mounting Bracket
- 12450-33** Mounting Support
- 12450-43** Temp Indicator, Power Supply, AC Input, 4/20 Output
- 12450-44** Power Supply for 110/220VAC, 24VDC, 0.7A
- 12450-45** Interface Module RS485 to RS232
- 12450-46** P-120, Temperature Indicator with Parameterizer

Accessories and Options are not CE

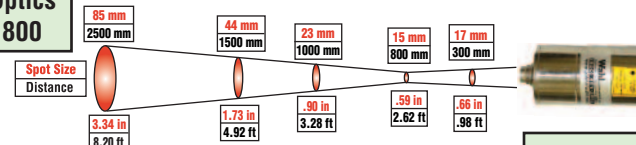
Optics 300



Optics 500



Optics 800



To order desired Optics Option simply add Optics Code to end of part number.



M35-GSL Applications

- Plastic
- Fluids
- Rubber
- Ceramic
- Wood
- Glass
- Coated Metals
- Textiles

Specifications		
Laser Sighting	RS232	M35-GSL10D50
	RS485	M35-GSL10Z50
Temperature Range	0° to 1000°C 32° to 1832°F	
Spectral Range	8 to 14µm	
Head	Standard	
Sighting	Laser	
Distance to Spot Ratio	50:1	
Emissivity	0.1 to 1.0 Adjustable	
Photo Detector	Thermopile	
Response Time	60 mS	
Accuracy & Repeatability	±1.5% of reading or 3.6°F (2°C) (Temperature 30°C to 60°C) Instrument must be at a constant temperature for a minimum of 30 min.	
Analog Output	4-20 mA, 0-20mA, 0-10V, User Selectable	
Digital Output	RS232 or RS485, USB 2.0 onboard.	
Operating Temperature	0° to 70°C (32° to 158°F)	
Operating Humidity	N/A	
Ambient Temperature	N/A	
Storage Temperature	-20° to 70°C (-4° to 158°F)	
Power Supply	24 V DC	
Laser Power	< 1mW	
Protection Class	IP65	
Isolation	Power supply is galvanically isolated from the output	
Head Dimensions Housing / Weight	Diameter: 1.96 inch, Length: 4.64 inch (Diameter: 50 mm, Length: 118 mm)	
	304 Stainless Steel, 1.32 lb (598 g)	
Parameters Adjustable via Software	Emissivity, Analog Output, Address, Response Time, Peak Picker, Analog Output Sub Range, Scaleable Current or Voltage	
Parameters Readable via Software	Measured Temperature, Temperature Graph, Internal Temperature of Sensor.	
Included Accessories	5m Connection Cable with Connector, Inspection Sheet, Software, and User Manual	

Specifications subject to change without notice

Register your product at www.palmerwahl.com/register

M30 Series • Compact Industrial Low Temperature • No Sighting

Specifications		
No Sighting	RS232	M30-GSN04D12
	RS485	M30-GSN04Z12
Temperature Range	0° to 400°C 32° to 752°F	
Spectral Range	8 to 14µm	
Head	Standard	
Sighting	None	
Distance to Spot Ratio	12:1	
Emissivity	0.95 Fixed	
Photo Detector	Thermopile	
Response Time	300 mS	
Accuracy Repeatability	±2% of reading or 1°C	
Analog Output	4-20 mA, Linear to temperature	
Digital Output	RS232 or RS485	
Operating Temperature	0° to 50°C (32° to 122°F)	
Operating Humidity	N/A	
Ambient Temperature	0° to 70°C (32° to 158°F)	
Storage Temperature	-30° to 85°C (-22° to 185°F)	
Power Supply	24 V DC	
Laser Power	N/A	
Protection Class	IP65	
Isolation	N/A	
Head Dimensions Housing / Weight	Diameter: 0.86 inch, Length: 3.58 inch (Diameter: 22 mm, Length: 91 mm)	
	Stainless Steel, 7.05 oz (200 g)	
Parameters Adjustable via Software	N/A	
Parameters Readable via Software	N/A	
Included Accessories	Mounting Accessories, Air Purge Unit	

Specifications subject to change without notice

M30-GSN Applications

Plastic	Painted Metals
Textile	Coated Metals
Ceramic	Anodized Metals
Liquids	Crystal Growing

Wahl's M30-GSN

Compact Sensor is a highly accurate, stationary infrared sensor with 2 wire connection, used for non-contact temperature measurement of non-metallic surfaces or painted, coated or anodized metals.



The small housing dimensions enable the integration of the instrument into compact production machines. The solid and robust design of the instrument guarantees reliability even in tough industrial environments. The built-in air purge unit protects the lens from contamination of dust and moisture, enabling the instrument to be adapted to various measuring tasks.

- Accuracy, ±2% of Reading +1°C
- Small and robust infrared sensor
- 2 wire installation
- Small spot size
- Fast response time
- Easy electrical and mechanical installation
- Linear current output
- IP65 Splash Proof
- Includes Mounting Accessories and Air Purge

M30-GSN ACCESSORIES - for images see page 23

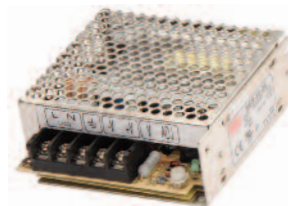
12450-43 Temp Indicator, Power Supply, AC Input, 4/20 Output

12450-44 Power Supply for 110/220V AC, 24VDC, 0.7A

Accessories and Options are not CE



12450-43 Temperature Indicator and Power Supply, AC Input, 4/20 Output, and Alarm



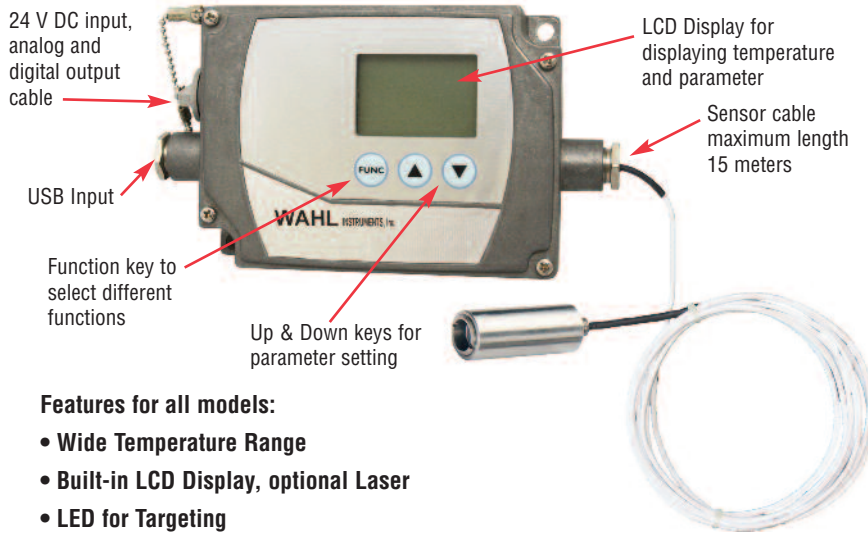
12450-44 Power Supply for 110/220V AC, 24VDC, 0.7A



Remote Optical Head

1.6µm, 1µm &
0.7...1.15µm

M20 Series • Remote Optical Head Built in LCD • LED or Laser Sighting • Single & Two Color



Wahl's M20-COD, M20-BOD/L, and M20-ROD/L Series Single and Two-Color digital infrared sensors feature a remote optical head for non-contact temperature measurement on metals, ceramics, graphite, etc. The extended sensor head is unaffected by electromagnetic interferences (e.g. induction). Equipped with a display that shows the current temperature in measuring mode, parameters can be read and changed via integrated keys. The infrared sensor can be powered through the USB port of a laptop computer with no external power supply required. Optional outputs available.

Features for all models:

- Wide Temperature Range
- Built-in LCD Display, optional Laser
- LED for Targeting
- Adjustable Parameter via Integrated Keypad or Interface
- Optional 4-20 mA, 0-20mA, or 0-10V
- Optional Isolated RS485 or USB 2.0 Interface
- USB 2.0
- Optional Relay Output
- Includes 3m Connection Cable

- 1.6µm and 1µm Models - High Accuracy, $\pm 0.3\%$ of Reading $+1^\circ\text{C}$
- 0.7...1.15µm Models - High Accuracy, $\pm 0.5\%$ of Reading $+1^\circ\text{C}$
- Two Color, One Color Switchable

Optics Codes					
Temperature Range	250° to 1300°C 482° to 2372°F	300° to 1300°C 572° to 2372°F	350° to 1800°C 662° to 3272°F	600° to 1900°C 1112° to 3452°F	800° to 2500°C 1472° to 4532°F
Focus Distance	Spot Size (mm/inch)				
CODE (mm)	20:1	40:1	80:1	80:1	80:1
90	4.5	2.3	1.2	1.2	1.2
300	15.0	7.5	3.8	3.8	3.8
600	30.0	15.0	7.5	7.5	7.5

To order desired Optics Option simply add Optics Code from Table to end of part number.



12450-29 Water Cooling Jacket with Air Purge for Optical Head 2



12450-41 Adjustable Mount Support for Optical Head 2

M20-COD/COL, M20-BOD/BOL, M20-ROD ACCESSORIES - see page 23

- 12450-21 Optical Head Connection Cable, 10 Core/4 Wire, 5m
- 12450-22 Optical Head Connection Cable, 10 Core/4 Wire, 7.5m
- 12450-23 Optical Head Connection Cable, 10 Core/4 Wire, 10m
- 12450-24 Optical Head Connection Cable, 10 Core/4 Wire, 15m
- 12450-29 Water Cooling Jacket with Air Purge for Optical Head 2
- 12450-38 Air Purge Unit for Optical Head 2
- 12450-41 Adjustable Mount Support for Optical Head 2
- 12450-42 Air Purge Unit with Mounting Support for Optical Head
- 12450-44 Power Supply 110/220 AC, 24 V DC, 0.7A
- 12450-45 Interface Module RS485 to RS232

M20-COD/COL, M20-BOD/BOL, M20-ROD OPTIONS

- 12450-47 USB Output, PC Cable and Software
- 12450-48 RS485 Output with PC Software
- 12450-49 Relay Output, 60VDC/42VAC, RMS 0.4A

Accessories and Options are not CE



PALMER Wahl
INSTRUMENTATION GROUP
Continued Innovation Since 1836
ISO 9001:2008 CERTIFIED

Register your product at www.palmerwahl.com/register

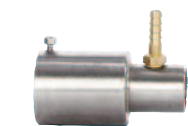
(800) 421-2853 • FAX (828) 658-0728 • www.palmerwahl.com

PW1240
07/12 Rev C

M20-COD • COL • BOD • BOL • ROD Series Specifications

Specifications						
LED Sighting	USB	M20-COD13U20	M20-COD13U40	M20-COD18U80	M20-BOD19U80	M20-ROD25U80
	USB/RS485	M20-COD13Y20	M20-COD13Y40	M20-COD18Y80	M20-BOD19Y80	M20-ROD25Y80
Laser Sighting	USB	M20-COL13U20	M20-COL13U40	M20-COL18U80	M20-BOL19U80	N/A
	USB/RS485	M20-COL13Y20	M20-COL13Y40	M20-COL18Y80	M20-BOL19Y80	N/A
Temperature Range		250° to 1300°C 482° to 2372°F	300° to 1300°C 572° to 2372°F	350° to 1800°C 662° to 3272°F	600° to 1900°C 1112° to 3452°F	800° to 2500°C 1472° to 4532°F
Spectral Range		1.6µm			1µm	Two Color 0.7...1.15µm
Head	Optical					
Sighting	LED or Laser			LED or Laser	LED	
Distance to Spot Ratio	20:1	40:1	80:1	80:1	80:1	
Emissivity	0.1 to 1.0 Adjustable					0.1 to 1.0 Adjustable (Single Color Mode)
E-Slope	N/A					0.75 to 1.25 Adjustable (Two Color Mode)
Photo Detector	InGaAs			Si	Si/Si	
Response Time	10 mS, Adjustable up to 10 S					20 mS Adjustable up to 10 S
Accuracy & Repeatability	±0.3% of reading +1°C					±0.5% of reading +1°C
Analog Output	Standard: 4-20 mA, 0-20mA, or 0-10V, User Selectable					
Digital Output	USB 2.0 only, or USB 2.0 and RS485					
Relay Output	Optional: Relay output with Hysteresis 60VDC/42VAC, RMS 0.4A (Code 12450-49)					
Display Resolution	0.1°C					
Operating Temperature	Electronic and Optical Head 0° to 70°C (32° to 158°F)					
Storage Temperature	-20° to 70°C (-4° to 158°F)					
Power Supply	24 V DC					
Protection Class	IP65					
Head Dimensions Housing	Diameter: 0.944 inch, Length: 2.48 inch (Diameter: 24 mm, Length: 63 mm)					
	Stainless Steel					
Parameter Dimensions Weight	L: 5.5 x W: 3.25 x D: 1.25 inch (L: 139.7 x W: 82.55 x D: 31.75 mm) / 1.5 lbs (680 g)					
Parameters Adjustable via Keypad and Software	Emissivity, Analog Output, Address, Response Time, Peak Picker, Analog Output Sub Range, Scaleable Current or Voltage					Emissivity, Emissivity Slope, Analog Output, Address, Response Time, Peak Picker, Analog Output Sub Range, Scaleable Current or Voltage
Included Accessories	Remote Sensor Head with 3m Cable, LCD Display, and Keypad for Parameterizing					

Specifications subject to change without notice



12450-38 Air Purge Unit, for Optical Head 2



12450-45 Interface Module RS485 to RS232, Power Supply: 230VAC or 24VDC Isolated



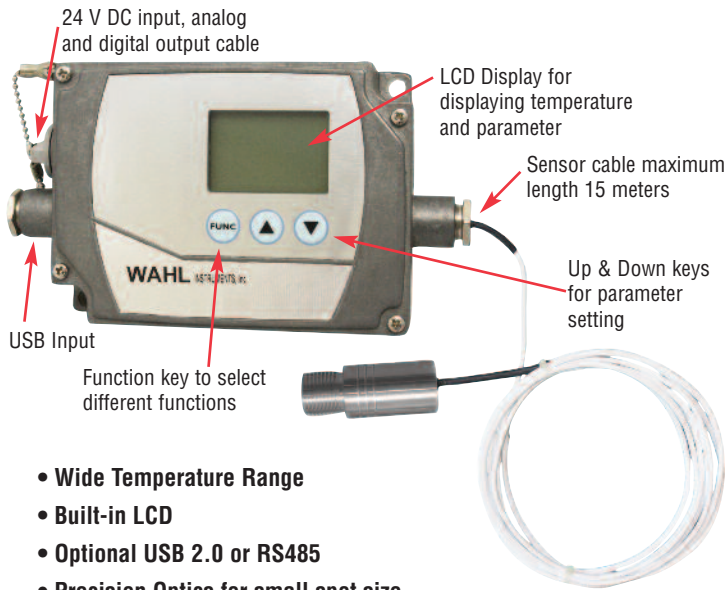
Register your product at www.palmerwahl.com/register



Remote Optical Head

8 to 14µm

M20-GON Series • Remote Optical Head Built in LCD • Precision Optics



- Wide Temperature Range
- Built-in LCD
- Optional USB 2.0 or RS485
- Precision Optics for small spot size
- Adjustable Parameter via Integrated Keypad or Interface

M20-GON ACCESSORIES - for more info see page 23

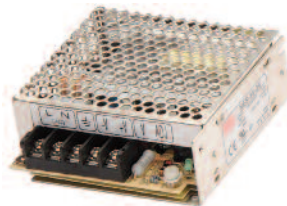
- 12450-21 Optical Head Connection Cable, 10 Core/4 Wire, 5m
- 12450-22 Optical Head Connection Cable, 10 Core/4 Wire, 7.5m
- 12450-23 Optical Head Connection Cable, 10 Core/4 Wire, 10m
- 12450-24 Optical Head Connection Cable, 10 Core/4 Wire, 15m
- 12450-40 Adjustable Mount Support for Optical Head 1
- 12450-42 Air Purge Unit with Mounting Support for Optical Head
- 12450-44 Power Supply 110/220 AC, 24 V DC, 0.7A
- 12450-45 Interface Module RS485 to RS232

M20-GON OPTIONS

- 12450-47 USB Output, PC Cable and Software
 - 12450-48 RS485 Output with PC Software
 - 12450-49 Relay Output, 60VDC/42VAC, RMS 0.4A
- Accessories and Options are not CE



12450-42 Air Purge Unit, with Mounting Support for Optical Head



12450-44 Power Supply: 110 /220 VAC, Output: 24VDC, Output Current: 0.7 Amp

Specifications			
No Sighting	RS485	M20-GON08T02	M20-GON08T15
	USB	M20-GON08U02	M20-GON08U15
Temperature Range		0° to 800°C 32° to 1472°F	
Spectral Range		8 to 14µm	
Head		Optical	
Sighting		None	
Distance to Spot Ratio		2:1	15:1
Emissivity		0.1 to 1.0 Adjustable	
Photo Detector		Thermopile	
Response Time		60 mS Adjustable up to 10 S	
Accuracy & Repeatability		±1.5% of reading or +2°C*	
Analog Output		Standard: 4-20 mA, 0-20mA, or 0-10V, User Selectable	
Digital Output		RS485, or USB 2.0	
Relay Output		Optional: Relay output with Hysteresis 60VDC/42VAC, RMS 0.4A (Choose Option: 12450-49)	
Display Resolution		0.1°C	
Operating Temperature		Electronic and Optical Head 0° to 70°C (32° to 158°F)	
Storage Temperature		-20° to 70°C (-4° to 158°F)	
Power Supply		24 V DC	
Protection Class		IP65	
Head Dimensions Housing / Weight		Diameter: 1.96 in, Length: 4.64 inch (Diameter: 14.5 mm, Length: 36 mm) Thread: M12 x 1.0 mm Stainless Steel, 0.705 oz (20 g)	
Parametizer Dimensions Weight		L: 5.5 x W: 3.25 x D: 1.25 inch (L: 139.7 x W: 82.55 x D: 31.75 mm) 1.5 lbs (680 g)	
Parameters Adjustable via Keypad and Software		Emissivity, Analog Output, Address, Response Time, Peak Picker, Analog Output Sub Range, Scaleable Current or Voltage	
Included Accessories		Remote Sensor Head with 3m Cable, LCD Display, and Keypad for Parameterizing	

*Optical head should be at a constant ambient temperature.

Specifications subject to change without notice

Applications

- Plastic, Rubber
- Ceramic, Glass
- Paper, Textile
- Fluids
- Wood
- Metals, Painted



Register your product at www.palmerwahl.com/register

(800) 421-2853 • FAX (828) 658-0728 • www.palmerwahl.com

PW1240
07/12 Rev C

M15 Series • Control Box with Relay Output • Laser Sighting

Specifications		
Model	M15-GSL12P30	M15-CSL12P80
Temperature Range	0° to 1200°C 32° to 2192°F	400° to 1200°C 752° to 2192°F
Spectral Range	8 to 14µm	1.6µm
Head	Standard	
Sighting	Coaxial Laser Sighting	
Distance to Spot Ratio	30:1	80:1
Emissivity	0.1 to 1.0 Adjustable	0.2 to 1.0 Adjustable
Photo Detector	Thermopile	InGaAs
Minimum Measuring Distance	0.5m	0.3m
Response Time	500 mS	200 mS
Accuracy	1% of Full Span	
Repeatability	0.3% of Full Measuring Range	
Analog Output	4-20mA DC, 250 Ω max	
Digital Output	RS485	
Relay Output	10A / 125V AC, 7A / 250V AC, 30VDC	
Display Resolution	1°C	
Operating Temperature	0° to 50°C (32° to 122°F)	
Operating Humidity	80%	
Storage Temperature	-18° to 50°C 0° to 122°F	
Power Supply	220V AC, 50HZ	
Protection Class	IP65	
Sensor Head Dimensions	Diameter: 2.87 inch Length: 7.0 inch (Diameter: 73 mm Length: 178 mm)	Diameter: 1.96 inch Length: 9.13 inch (Diameter: 50 mm Length: 232 mm)
Sensor Head Weight	1 lb (450 g)	1.58 lbs (720 g)
Sensor Head Housing	Aluminum	Aluminum
Control Box Dimensions	L: 6.4 x W: 3.3 x D: 7.5 in (L: 163 x W: 83 x D: 190 mm)	
Parameters Adjustable via Software	High/Low Temperature Limit & High/Low Alarm, Peak Temperature Display, Above/Below Measuring Range Indication	
Included Accessories	Temperature Indicator Control Box, Power Cord, Connection Cable, Adjustable Mount, User Manual	

M15 Series units are not CE

Specifications subject to change without notice

Applications

Heat Treating	Metals, Coated
Metals, Melted	Metals, Painted
Metals, Anodized	



8 to 14µm Model

M15-GSL12P30: 0° to 1200°C (31° to 2192°F)

• D to S: 30:1



1.6µm Model

M15-CSL12P80: 400° to 1200°C (752° to 2192°F)

• D to S: 80:1.

The M15-GSL and M15-CSL Series features several user selectable options, standard heads, oversized displays, and high/low alarms. With 1% full span accuracy, these robust stand alone units can be easily integrated into your process to monitor for critical temperature deviations.

The M15 sensors come standard with an adjustable 4-20mA output and two built in relays for running as a control circuit.

- Max Value
- 2 Relay Outputs
- Built-in LED Display
- Parameters Adjustable via Keypad
- RS485 Output
- Adjustable Emissivity 0.1 to 1.0
- High-Low Alarm with Control Box
- Audible Over-Limit Alarm
- Linear Current Output



IP65
CERTIFIED

ONE YEAR
1
WARRANTY

PALMER Wahl
INSTRUMENTATION GROUP

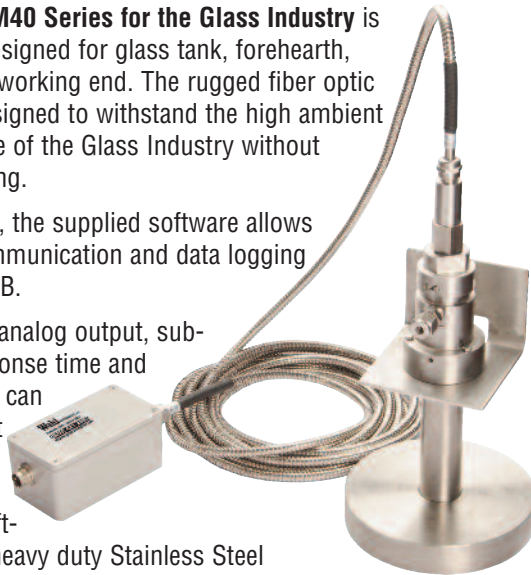
Continued Innovation Since 1836
ISO 9001:2008 CERTIFIED

M40-BFN • Glass Industry Multi Fiber Cable • No Sighting

The Wahl M40 Series for the Glass Industry is specially designed for glass tank, forehearth, feeder and working end. The rugged fiber optic cable is designed to withstand the high ambient temperature of the Glass Industry without water cooling.

Fully digital, the supplied software allows remote communication and data logging through USB.

Emissivity, analog output, sub-range, response time and peak picker can be preset at the factory or adjusted through software. The heavy duty Stainless Steel housing provides reliability and safety even in harsh environments.



- Fast Response Time 250 mS, Adjustable up to 10 S
- Includes 5m Fiber Optic Cable with Heavy Duty SS Conduit
- Two Wire Technology
- Test Current Output
- High Accuracy, ±0.3% of Reading
- High Optical Resolution
- Rugged Stainless Steel Housing
- Very Good Stability
- Fully Digital
- User Friendly Software
- Variety of Accessories
- Wide Temperature Range

M40-BFN ACCESSORIES - for images see page 23

- 12450-03** Replacement Optical Head 3
- 12450-16** Multi Fiber Optic Cable, Replacement, 5m
- 12450-17** Multi Fiber Optic Cable, Upgrade to 10m
- 12450-25** Optical Head Connection Cable, 3 Core/2 Wire, 1/2m
- 12450-26** Optical Head Connection Cable, 3 Core/2 Wire, 5m
- 12450-27** Optical Head Connection Cable, 3 Core/2 Wire, 10m
- 12450-28** USB Cable with Connector, 1m
- 12450-34** Air Purge Unit with 300mm INCONEL Sighting Tube
- 12450-35** Air Purge Unit with Ceramic Sighting Tube
- 12450-36** Air Purge with Mounting Flange
- 12450-43** Temp Indicator, Power Supply, AC Input, 4/20 Output
- 12450-44** Power Supply for 110/220V AC, 24VDC, 0.7A

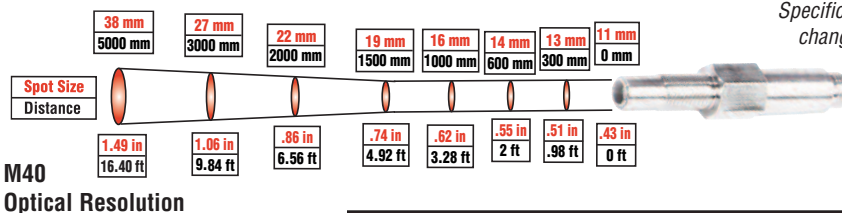
Accessories and Options are not CE

Applications

- Forehearth
- Feeder
- Furnace Crown
- Working End
- Furnace Sidewall



Specifications	
Model	M40-BFN18Y100
Temperature Range	600° to 1800°C 1112° to 3272°F
Spectral Range	1µm
Head	Standard
Sighting	None
Distance to Spot Ratio	100:1 Minimum spot size 13mm
Emissivity	0.05 to 1.0 Adjustable via DIP switches and USB
Photo Detector	Si
Response Time	250 mS, Adjustable up to 10 S
Accuracy & Repeatability	±0.3% of reading or 3°C, whichever is greater
Test Current	12 mA
Analog Output	4-20 mA
Digital Output	USB 2.0
Optical Resolution	100:1 (approx) Min Spot Size 13 mm
Operating Temperature	Max. 452°F (250°C) at Fiber Optics Cable & Optical Head, 32° to 158°F (0° to 70°C) at Infrared Sensor End
Operating Humidity	0 - 100%
Storage Temperature	-20° to 70°C -4° to 158°F
Power Supply	24 V DC
Protection Class	IP65
Isolation	N/A
Fiber Optic	5m Multi Fiber Cable in Heavy Duty Stainless Steel Flexible Conduit
Optical Head Dimensions Housing / Weight	Diameter: 0.5708 inch, Length: 4.25 inch (Diameter: 14.50 mm, Length: 108 mm) Thread M16 x 1.5 mm Stainless Steel / 1.32 lb (598 g)
Parametizer Dimensions / Weight	L: 4.52 x W: 2.55 x D: 2.16 inch (L: 115 x W: 65 x D: 55 mm), 11.28 oz (320 g)
Parameters Adjustable via Software	Response Time, Scaleable Current or Voltage, Analog Output Subrange, Emissivity
Parameters Readable via software	Measured Temperature, Temperature Graph, Internal Temperature of Sensor, Brightness Temperature
Included Accessories	Software, Optical Head, 5m Fiber Optic Cable in Heavy Duty SS Conduit, 5m Optical Head Connection Cable with Connector, Software, Inspection Sheet, and User Manual



Specifications subject to change without notice

Register your product at www.palmerwahl.com/register

Cooling, Air Purge, and Mounting Accessories



12450-29 Water Cooling Jacket with Air Purge for Optical Head 2



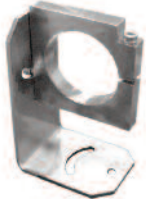
12450-30 Water Cooling Jacket with Air Purge & Adjustable Flange



12450-31 Adjustable Mounting Stand



12450-32 Air Purge with Mounting Bracket



12450-33 Mounting Support



12450-34 Air Purge Unit, with 300mm INCONEL Sighting Tube



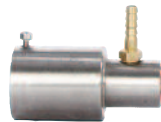
12450-35 Air Purge Unit, with Ceramic Sighting Tube



12450-36 Air Purge Unit with Mounting Flange



12450-37 Air Purge Unit, for Optical Head 1



12450-38 Air Purge Unit, for Optical Head 2



12450-39 Air Purge Unit, with Ceramic Sighting Tube



12450-40 Adjustable Mount Support for Optical Head 1



12450-41 Adjustable Mount Support for Optical Head 2

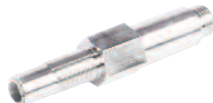
Optical Head Replacement



12450-01
Optical Head 1



12450-02
Optical Head 2



12450-03
Optical Head 3

Fiber Optic and Connection Cables



12450-04 thru 12450-17
Fiber Optic Cable

12450-25-26-27 Optical Head Connection Cable, 3 Core

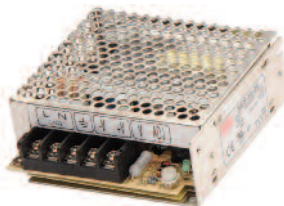


12450-18 thru 1250-24 Optical Head Connection Cable, 12 & 10 Core

Temperature Indicators, Interface and Power Accessories



12450-43 Temperature Indicator and Power Supply, AC Input, 4/20 Output, and Alarm



12450-44 Power Supply: 110 /220 VAC, Output: 24VDC, Output Current: 0.7 Amp



12450-45 Interface Module RS485 to RS232, Power Supply: 230VAC or 24VDC Isolated



12450-46 P-120 Temperature Indicator with Parametizer

Note: Please see model page for accessories specific to each unit.

Register your product at www.palmerwahl.com/register



America's First Manufacturer of Industrial Temperature and Pressure Instrumentation

Wahl designs and manufactures to the most stringent quality standards. We provide certified, traceable calibration data in support of companies whose requirements include meeting ISO 9001:2008, FAA and FDA quality standards. Calibrations to both IPTS-68 and ITS-90 are available. Choose from two levels of calibrations services to meet your quality system requirements.

CALIBRATION SERVICES

STANDARD CERTIFICATION: Unit is calibrated to factory specifications using NIST traceable equipment. Unit is provided with:

Certificate of Conformance - Statement that our product meets published specifications. Included on the packing list with each shipment.

"Long Form" Certificate of Conformance - Available upon request.

Calibration Sticker - (or tag) Advising you of the date your instrument(s) was/were calibrated, and the suggested date for its next calibration. This is provided with most products at time of purchase, and when you return a product for calibration.

NIST TRACEABLE TEST REPORT: Unit is calibrated to factory specifications using NIST Traceable equipment. Unit is provided with:

NIST Traceable Test Report - Our Quality Management System is certified to conform to ISO9001:2008. We maintain a calibration system in conformance with ANSI/NCSL Z-540 and MIL-STD-45662A.



"As Received" and "As Left" Data with Out-of-Tolerance conditions noted.

Calibration Sticker (see above).

Why you need to Calibrate your Instruments

- Increase customer satisfaction with consistent products.
- Comply with quality standards.
- Improve product quality.
- Ensure traceability throughout your entire manufacturing process.
- Palmer Wahl can calibrate your equipment for you. We also offer a complete line of Calibrators to integrate all the necessary functions for adjustment and maintenance of your process.
- Our products and services are easy to use and Palmer Wahl is there to help, every step of the way.

REPAIR AND OTHER SERVICES

REGISTER YOUR PRODUCT: Registration is fast and easy. In about a minute you can register your product for Warranty Protection and our Calibration Reminder Service to keep your QC Program in compliance. Go to www.palmerwahl.com/register.

REPAIR SERVICES: Palmer Wahl offers repair and calibration services on most products we sell. Contact Customer Service for pricing, and an RMA. Please see note below.

Detailed Repair Report - Available upon request, this report provides details of evaluation and repairs made.

Custom Points - Palmer Wahl will calibrate your instruments at your specified temperature or pressure points.

Special Requests - When calibrating your instrument, our experienced personnel will help you to achieve the level of quality that you need in your facility.

Note: You must have a **Return Merchandise Authorization Number**, (RMA) before returning a product for repair or calibration. To obtain an RMA, please call Customer Service at 1-800-421-2853 or go to www.palmerwahl.com and click on: Service > Product Return Request.

Palmer Pressure Gauges are available from:



Palmer Wahl Warranty

Manufacturer warrants all products listed in this catalog to be free from defects in material or workmanship under normal use and service. The Manufacturer agrees to repair or replace any product which upon examination is revealed to have been defective due to faulty workmanship or material if returned to our factory, transportation charges prepaid, within the product specific warranty period stated in the catalog by the manufacturer. This warranty is in lieu of all other warranties, expressed or implied and of all obligations or liabilities on its part for damages including but not limited to consequential damages, following the use or misuse of instruments sold by the Manufacturer. No agent is authorized to assume for manufacturer any liability except as set forth above.

234 Old Weaverville Road • Asheville, North Carolina • 28804-1228

Phone (800) 421-2853 • (828) 658-3131 • Fax (828) 658-0728 • Email: info@palmerwahl.com

www.palmerwahl.com

ISO9001:2008 Certified Quality Management System

PW1240 07/12 Rev C