

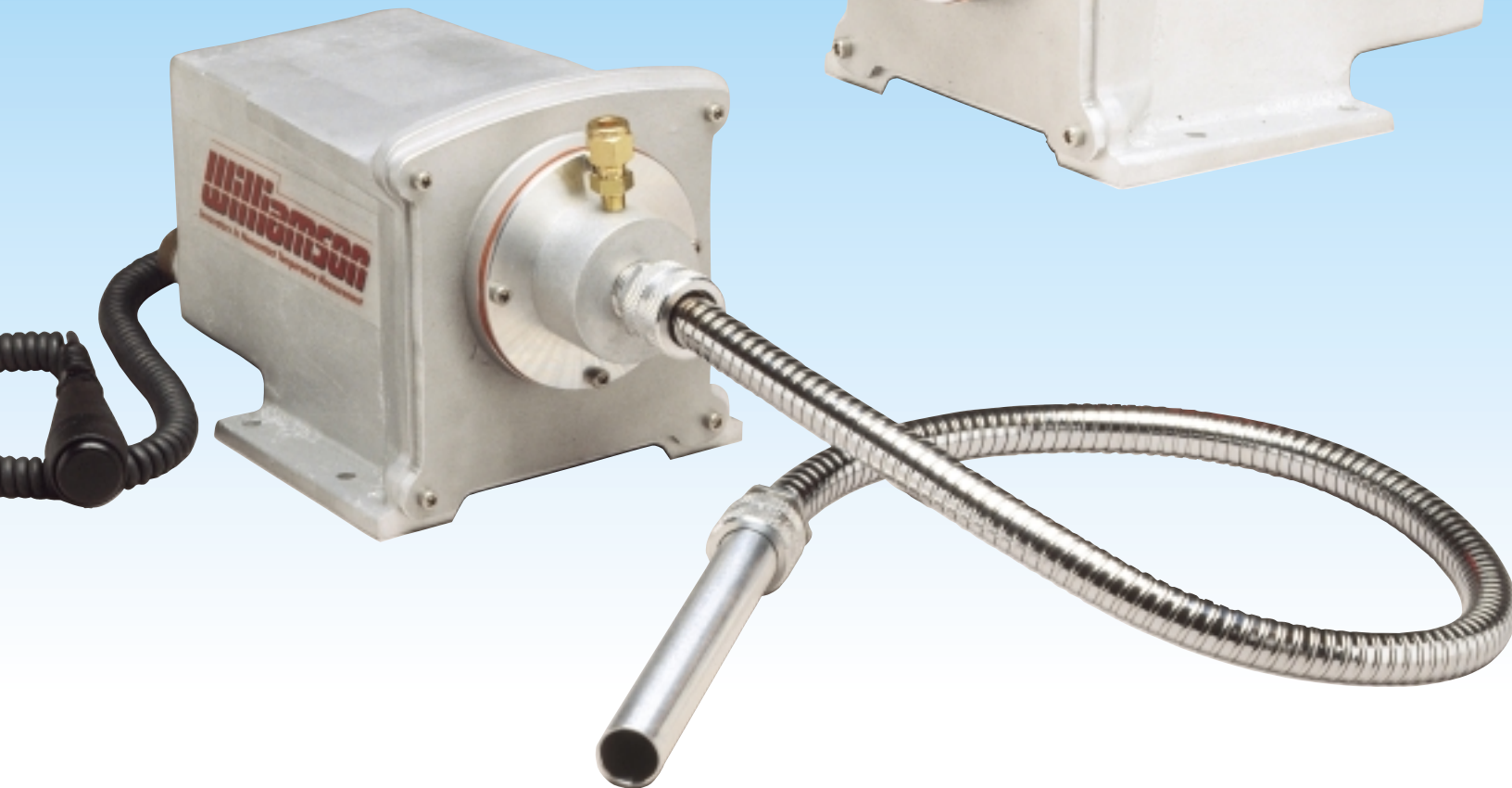
MULTI WAVELENGTH TEMPERATURE SYSTEMS

For Noncontact Temperature Measurement and Control

TempMatic 12200 Series
Visual Aiming Sensors



FiberView 12200 Series
Fiber Optic Sensors



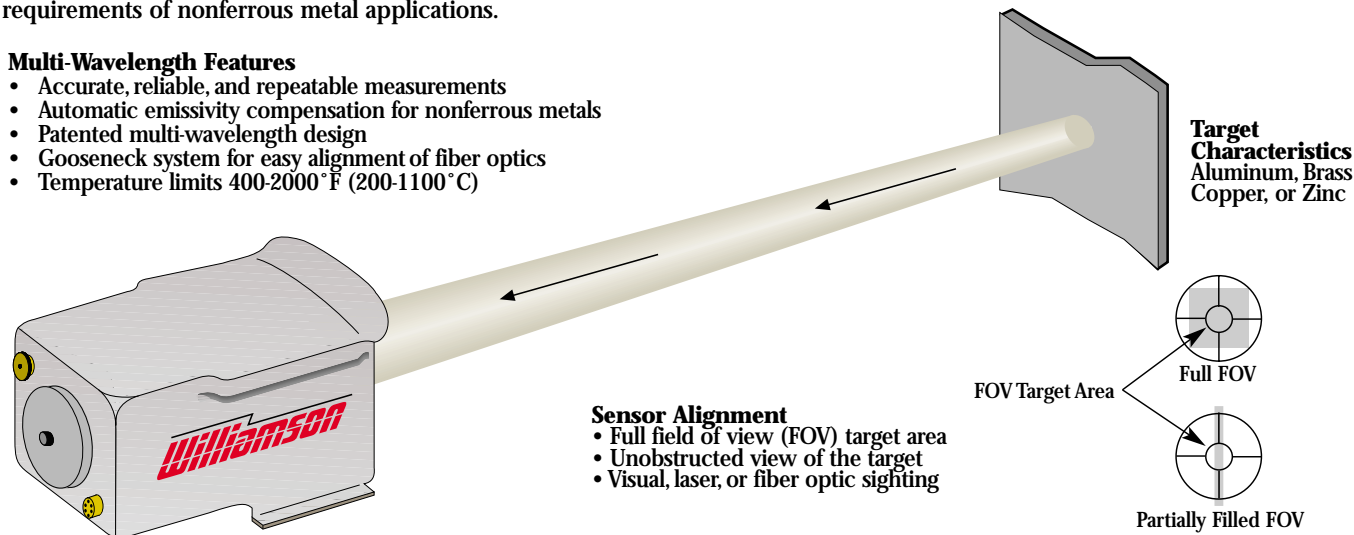
Williamson
Innovators in Noncontact Temperature Measurement

A SIMPLE SOLUTION TO COMPLEX PROBLEMS

The multi-wavelength TempMatic 12200 and FiberView 12200 Series sensors are designed to provide high performance and low maintenance operation for applications in the aluminum, copper, brass and zinc industries. These multi-wavelength sensors are designed specifically for temperature measurement of non greybody surfaces. They automatically compensate for surface emissivity issues resulting from varying degrees of oxidation, alloy composition, temperature, mechanical roughness and surface chemistry. This proven multi-wavelength technology is used where single wavelength and dual wavelength sensors do not meet the accuracy and repeatability requirements of nonferrous metal applications.

Multi-Wavelength Features

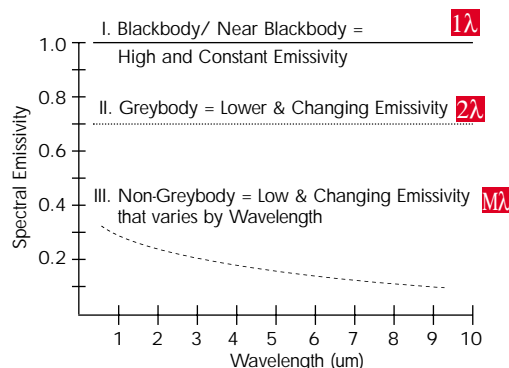
- Accurate, reliable, and repeatable measurements
- Automatic emissivity compensation for nonferrous metals
- Patented multi-wavelength design
- Gooseneck system for easy alignment of fiber optics
- Temperature limits 400-2000°F (200-1100°C)



Improving Quality and Productivity Through Temperature Measurement

UNEQUALLED PERFORMANCE FOR PROCESS MONITORING AND CONTROL

Williamson's patented 12200 Series sensors are the industry standard for nonferrous metal applications. The non-greybody emissivity properties of these unusual materials requires the use of this powerful technology. The sensors combine multi-wavelength hardware with a blending algorithm for accurate and repeatable measurement of these surfaces. The sensors also use Williamson's unique single detector design, which provides a long-term, drift-free operation for greater accuracy and calibration stability.

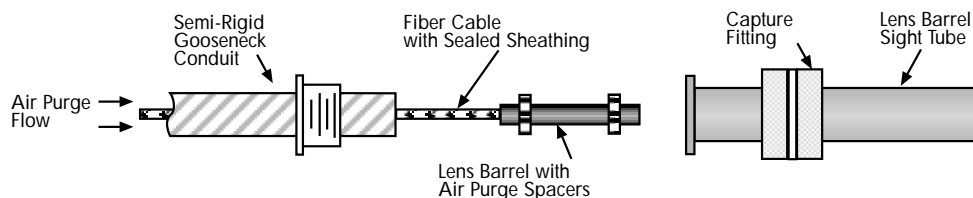


Infrared Emissivity Analysis

PRECISE SENSOR ALIGNMENT

The TempMatic 12200 Series uses visual (SLR) or laser aiming for accurate alignment to measure small or distant targets. The FiberView 12200 Series uses durable fiber optic cables to access targets in confined or obstructed areas and to survive excessive heat and hostile conditions. The optional Gooseneck System (GN) is used for quick and easy alignment when frequent process and tooling changes dictate sensor re-alignment. The standard 3 foot (91cm) gooseneck system consists of a sealed fiber optic cable enclosed in a semi-rigid sheathing that enables the alignment of the

fiber cable. The system also includes an air purge that circulates air down the sheathing and across the lens assembly to keep the system cool and the lens clean. Other recommended accessories with the Gooseneck option are a remote aim light (RAL) to illuminate the target, and a process air control system (PACS) to regulate and clean the plant air that is used with the air purge. A longer 6 foot (1.8m) Gooseneck System is available for more congested and hot working areas.



Fiber Optic Gooseneck Assembly

SYSTEM SPECIFICATIONS AND ACCESSORIES

RUGGED SYSTEMS THAT ARE EASY TO INSTALL AND OPERATE

With Williamson's patented multi-wavelength design and a broad selection of options and accessories, it is easy to customize each sensor for maximum performance. The sensors are available as a system configuration with a 1/4 DIN remote digital display which provides five simultaneous output signals or as a stand alone sensor with a 4-20 mA output. Each sensor is protected in a rugged NEMA 4 (IP65) enclosure and includes a variety of options and accessories to facilitate installation and provide added protection for tough industrial environments. A variety of remote PID control and alarm options are also available for closed loop control and turn key applications.

SPECIFICATIONS FOR THE 12200 SERIES

Detailed information about the sensor temperature range, spectral response, and field of view options are included on the back page.



Stand Alone Sensor Controls



Remote Digital Display

SENSOR SPECIFICATIONS

Accuracy	±0.75% full scale
Repeatability	±0.25% full scale
Field of View	99% of the Measured Value
Sensor Input Power	Standard: ±15 Vdc (200mA) Optional: 24Vdc (150mA)
Output Signal	Linear 4-20mA (0-500ohms)
Standard Sensor Adjustments	TruSet, Adjustable Response Time, Adjustable Peak Hold, Status Indicators
Response Time	98% of reading, 4τ - See back page
Ambient Temperature Range	12200 Sensors 32-110°F (0-43°C) With Water Cooling: 200-350°F (95-175°C) max. Fiber Optic Cable: 400°F (200°C) max.
CE Certification	EMI/RFI for Heavy Industry LVD - Low Voltage Directive
Enclosure	Aluminum Casting with NEMA 4 (IP65) Rating
Dimensions	8.50" x 5.25" x 6.00" (21.6cm x 13.3cm x 15.2cm)
Weight	6.75 lbs (3kg)
Warranty	2 years

DISPLAY SPECIFICATIONS

Linear Output Signals	4-20mA, 0-100mV, 0-1V, 0-10V, & 1mV/degree (scaled to temperature)
Input Power	110Vac (50/60Hz): 90 - 130Vac (250mA), or 220Vac (50/60Hz): 180 - 260Vac (125mA)
Ambient Temperature Range	32-140 °F (0-60 °C)
Dimensions	1/4 DIN: 8.95" x 3.78" x 3.78" (22.7cm x 9.6cm x 9.6cm)
Weight	4.0 lbs (1.8kg)

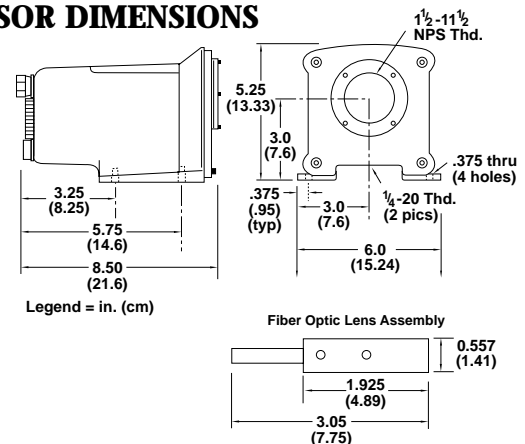
DISPLAY MODELS AND OPTIONS

20	Display, Power Supply, and Five Linear Outputs
22	Display, Power Supply, Five Linear Outputs, and Dual Set Point Alarms and Dual Logic Controller
25/25S/25RS	PID Controllers with Power Supply, 4-20mA Output, and Signal Conditioning Options.
RS232	Optional RS232 Serial Output

SENSOR OPTIONS AND ACCESSORIES

PS110/PS220	Power Supply Module for Stand Alone Sensors ±15Vdc (200mA) to 110/220Vac (50/60Hz)
AP	Air Purge
WCAP	Water Cooling Air Purge
SB	Swivel Mounting Bracket
TMB	Adjustable Tilt Mounting Bracket
LA	Laser Aiming for the both 12200 Series
PACS	Purge Air Control System
CS100	Calibration System
Fiber Optic Cables	3ft (91cm) and 6ft (1.8m) lengths
GN	Gooseneck System for alignment
S	Sealed Fiber Cable for protection
AL/RAL/FPAL	Aim Light with three switch options
For other accessories, consult Williamson	

SENSOR DIMENSIONS

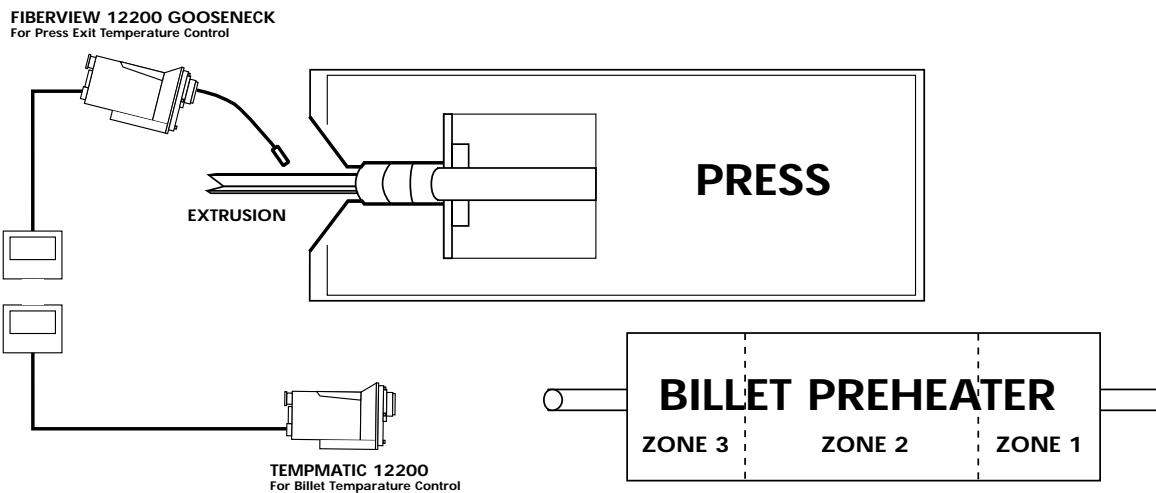


SYSTEMS DESIGNED FOR DIFFICULT APPLICATIONS

Multi-wavelength sensors are used for aluminum, brass, copper, and zinc applications, as well as for coated metals such as galvanized steel. Typical applications for the rugged 12200 Series sensors include preheating, forming, and heat treating operations in extrusion, forging, rod casting, and hot rolling mills.

A common application for the 12200 Series is to characterize the thermodynamics of the aluminum extrusion process by measuring the aluminum temperature as it enters and exits the press. Knowing both the material temperature and press pressure, it is possible to optimize the press operation to improve product quality and consistency. This results in a new level of performance that delivers better quality product at a lower cost. Other forming applications using the 12200 Series sensors yield the same type of improvements. Contact Williamson for Application Bulletins about specific applications.

ALUMINUM EXTRUSION APPLICATIONS



SENSOR SELECTION GUIDE FOR THE 12200 SERIES

TEMPMATIC 12200 SERIES - Multi-Wavelength/Visual Aiming					
Sensor Model	Spectral Response (microns)	Temperature Range		Field Of View*	
		(°F)	(°C)	Standard Resolution Optics (D/F)	High Resolution Optics (D/F)
12200LT	2.1 & 2.4	400-700	200-375	D/25	n/a
12200A	2.1 & 2.4	500-800	250-425	D/25	n/a
12200B	2.1 & 2.4	600-1100	300-600	D/55	D/75
12200C	2.1 & 2.4	800-1600	425-875	D/80	D/110
12200D	2.1 & 2.4	1000-2000	550-1100	D/80	D/110

FIBERVIEW 12200 SERIES - Multi-Wavelength / Fiber Optics								
Sensor Model	Spectral Response (microns)	Temperature Range		Field Of View*			Fiber Cable Selection	
		(°F)	(°C)	Standard Resolution Optics (D/F)	High Resolution I Optics (D/F)	High Resolution II Optics (D/F)	Maximum Length	Cable Grade
12200B	2.1 & 2.4	600-1100	300-600	D/2, D/12	n/a	D/50	3ft/91cm	Far IR
12200C	2.1 & 2.4	800-1600	425-875	D/2, D/16	D/50	D/75	6ft/1.8m	Far IR
12200D	2.1 & 2.4	1000-2000	550-1100	D/2, D/16	D/50	D/75	6ft/1.8m	Far IR
12200E	2.1 & 2.4	700-1100	375-575	D/2, D/12	n/a	D/50	6ft/1.8m	Far IR

*FOV Selection: $d = D/F$, d = Measured Target Diameter, D = Working Distance, F = Optical Resolution

Response time values are measured on an aluminum surface using a 4τ standard (98% of reading)

Standard: 3sec. to 15sec.; Fast (FRT): 1sec. to 5sec.

Consult with Williamson for custom temperature ranges, wavelengths, optics, and fiber optic cable lengths.

Specifications are subject to change without notice. Made in USA

