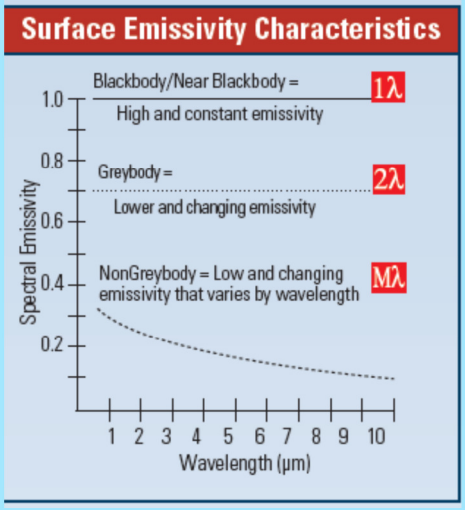
Thermal Solutions of Texas

Williamson Infrared Sensors

ACCURATE MEASUREMENT OF COMPLEX MATERIALS

Infrared thermometers measure the amount of infrared energy emitted by an object's surface, and then convert this signal into a temperature value. While many factors affect the measurement accuracy, the most important consideration is the selection of the sensor that most effectively compensates for the emissivity characteristics of the measured surface. Emissivity is a term used to quantify a material's tendency to emit infrared energy. It is measured on a scale of 0 to 1.0, and it is related to the reflective and transmission characteristics of the material. For example, a highly reflective surface like aluminum has a low emissivity of 0.1, while a dull surface like refractory brick has a higher emissivity of 0.9.



TYPICAL APPLICATIONS

Single Wavelength

- Food Processing
- Paper, Rubber, Textile, Plastics, and Paint
- Ceramic, Glass, and Aggregate
- Flame Fired Processes
- Low Temperature Metals

Dual Wavelength

- Casting, Forming, and Heat Treating of Metals
- Welding and Brazing
- Crystal Growing and CVD

Multi Wavelength

- Aluminum, Copper, Brass and Other Nonferrous Metals

Unequaled Performance in Temperature Measurement

Thermal Solutions of Texas is proud to represent Williamson Infrared Temperature Sensors, with versatile systems to meet any requirement. Williamson's advanced infrared thermometers feature state-of-the-art technology to provide accurate and reliable measurements for challenging applications in heavy-industrial environments.

Williamson Sensor Selection Guide	
Sensor	**Application Characteristics**
Single Wavelength T° > -40°F / -40°C **Silver C,U (line of site)** **Gold 20 (Laser)** **Gold 30 (Fiberoptic)** **Pro 40 (Visual)** **Pro 50 (Fiberoptic)**	Single-wavelength sensors provide an average temperature measurement of the measured target area, and short wavelengths are recommended to reduce or eliminate errors due to emissivity variation. The Patented Auto Null Design eliminates noise and calibration drift often associated with this type of sensor. Advanced signal processing techniques allow for broad temperature ranges, operation at low temperatures, and long term calibration stability. These sensors are recommended for applications involving: ▪ *A constant emissivity with an unobstructed view of the target* ▪ *Low temp measurements of low-emissivity materials*
Dual Wavelength T° > 300°F / 150°C **Pro 80 (Visual)** **Pro 90 (Fiberoptic)**	Dual-wavelength sensors tend to measure the hottest temperature viewed in the target area, and they provide automatic compensation for emissivity variations of greybody materials. With a unique single-detector design and the industry's highest signal dilution factor, Williamson's dual-wavelength sensors outperform all other ratio sensors when demanding application issues exist. Typically difficult application issues include: ▪ *Low or varying emissivity* ▪ *Intervening media such as optics, scale, steam, dust, or spray* ▪ *A partially filled field-of-view caused by a mechanical obstruction or a small or wandering target*
Multi Wavelength T° > 300°F / 150°C **Pro 100 (Visual)** **Pro 200** **(Fiberoptic)**	Multi-wavelength sensors utilize programmable ESP algorithms to provide 'aim and read' capabilities for non-greybody materials that are not accurately measured by single and dual wavelength sensors. These sensors are recommended for applications involving: ▪ *Non-Greybody Materials such as aluminum, brass, chrome, copper, molybdenum, steel, tin, titanium, tungsten, and zinc* ▪ *Intervening media such as dirty optics, scale, steam, dust, or water spray* ▪ *A partially filled field-of-view caused by a mechanical obstruction or a small or wandering target*

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