



## Description

The LumiTherm X5R rack mount and LumiTherm X5M module offer a modular solution for an "optical thermocouple." The rack mount unit comes standard with one module installed. Up to six additional modules may also be installed. This temperature measurement system provides accurate and reliable measurements in environments where conventional temperature sensors are unreliable or inoperable.

A Windows-based user interface controls each of the installed modules via an ethernet connection from a host computer, such as a laptop, to the rack mount unit. The user-interface software provides for plotting temperature data separately for each module, as well as logging to data files.

## HIGHLIGHTS

- True Accuracy to Better than  $\pm 0.2^{\circ}\text{C}$
- Range from  $-40^{\circ}$  to  $300^{\circ}\text{C}$
- 4 to 28 Channels
- Fast Response
- Ethernet Communication Interface
- Windows-based User Interface Software
- Modular Configuration

## Accurate

X5 systems use the recognized fluorescence decay temperature sensing principle to provide Fast, Accurate and Consistent temperature measurement in harsh environments. Our fiber optic temperature sensing systems are the most accurate on the market today.

## Affordable

The X5 line has benefitted from recent improvements in components manufacturing. Because of this, IPITEK was able to design an extremely high-quality product with one idea in mind: Your Budget. Many applications that would benefit from the use of optical sensors cannot justify the investment in high-priced equipment offered by legacy vendors. IPITEK's Lumitherm X5 addresses just that issue.

## Simple

There's no reason for it to be complicated, after all, it's just a thermometer. With its LumiSmart connector, the X5 system is easier to use than a thermocouple and ready to use in just three simple steps:

**Unwrap it - Plug it in - Read**

Individual LumiTherm X5M modules can accommodate four fiber-optic temperature sensors. A variety of sensor configurations are available using plastic or glass fiber, including custom designs to meet specific customer needs. Each sensor contains on-board calibration data, ensuring accurate temperature measurements.

Like its predecessor, the X5 system features sensors that are environmentally inert, non-conductive, non-metallic, and miniature, making it ideal for harsh operating conditions, in vivo usage, or other applications where metal probes are useless. This system is ideal for applications where high levels of electromagnetic interference (EMI) such as RF or microwave fields, or high voltages, are commonly encountered in such environments as electrical power generation, semiconductor fabrication, electronics testing, electrolytic processing, and RF or microwave heating and curing. Since the sensor itself is inert to chemical and biological agents, it is ideally suited to applications where a completely non-reactive sensor is required or where other types of sensors would malfunction or become damaged. For medical applications, IPITEK can make sensors that fit in standard catheters or sealed sensors that can be catheterized and autoclaved.

## SPECIFICATIONS

Range:	-40° to 300°C
Calibration (NIST traceable):	Standard: $\pm 1^\circ\text{C}$
	High: $\pm 0.25^\circ\text{C}$
	<i>True</i> : $\pm 0.2^\circ\text{C}$ or better
Resolution:	0.1°C (0.05°C - <i>True</i> )
Communication:	Ethernet
Operating Temp:	0 to 50°C
Input Voltage:	110/220 VAC

### X5 Sensors

**X5-BLUE**  
Simple Measurement

**X5-RED**  
High Temperature

**X5-TRUE**  
High Accuracy

(Click button to view data sheet)

## X5 TECHNOLOGY

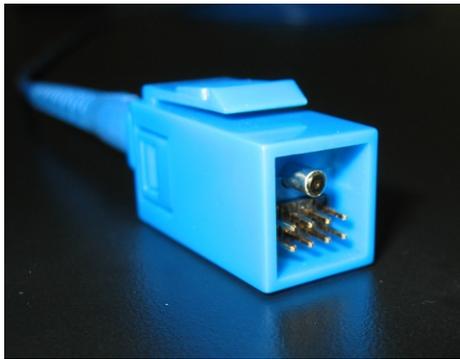
LumiTherm X5 Technology uses a fluorescence-decay process. Since fluorescence decay is a fundamental atomic property of phosphors, it can accurately determine temperature and remains ultra-stable for years.

## OTHER READOUTS

(click button to view data sheet)

**X5B Benchtop**  
1 to 4 Channels

**X5O OEM Board**  
1 to 4 Channels



## LumiSmart CONNECTOR

The LumiSmart connector contains an embedded microchip that stores the sensor's calibration data. This way, you never have to worry about identifying the sensor to the signal conditioner. It's as simple as "plug-and-read."

For improved accuracy, the in-situ one point calibration *True* feature can be used to achieve better than  $\pm 0.2^\circ\text{C}$ .

## DIMENSIONS

