

# Application Analysis Form



## PYROMETERS FOR NON-CONTACT TEMPERATURE MEASUREMENT

Contact Name: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Company: \_\_\_\_\_

☐ New Application

Address: \_\_\_\_\_

☐ Currently Using Infrared

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

☐ Brand / Model # \_\_\_\_\_

### TYPE OF USE:

☐ Portable

☐ Process

☐ Temperature Display Needed: ☐ Yes ☐ No // ☐ On-board temp. display ☐ None

### TARGET INFORMATION:

A. Process Description (A sketch of your application illustrating setup configuration is very helpful)

\_\_\_\_\_

B. Nature of target surface (Material type, shape, color, and surface condition – **Dull or Shiny**)

\_\_\_\_\_

C. Working temperature range: ☐ °F ☐ °C \_\_\_\_\_ ° to \_\_\_\_\_ ° Critical temp. \_\_\_\_\_ °

D. Target distance from pyrometer: ☐ Inches ☐ mm \_\_\_\_\_ Min. \_\_\_\_\_ Max.

E. Target size: ☐ Inches ☐ mm \_\_\_\_\_ at a \_\_\_\_\_ Distance

F. How is the target being heated: \_\_\_\_\_ example; Resistance, Flames, Electric, Plasma, IR lamps etc. Specify IR emission wavelength \_\_\_\_\_ u (microns).

G. Is target directly under infrared energy source during temperature measurement? ☐ Yes ☐ No

H. Target is: ☐ Stationary ☐ Moving at \_\_\_\_\_ per second. (inches, feet, mm).

I. Target is: ☐ In a vacuum: Viewport window type \_\_\_\_\_ ☐ In atmosphere.

J. Preferred method of aiming: ☐ Laser ☐ Thru-lens sighting ☐ Video output

K. Pyrometer selection: ☐ Non-fiber optics ☐ Fiber Options (F.O. Cable length); \_\_\_\_\_ in meters.

### ENVIRONMENTAL CONDITIONS

A. Ambient temperature at pyrometer's installation: ☐ °F ☐ °C \_\_\_\_\_ ° Min. \_\_\_\_\_ ° Max.

B. Atmospheric contaminants: ☐ Dust ☐ Smoke ☐ Steam ☐ Other: \_\_\_\_\_

C. Is a strong RFI / Magnetic field present? ☐ Yes ☐ No

**IR Temp Sales Office:** 787 Susquehanna Avenue | Franklin Lakes, NJ 07417 USA | Phone: +1 774.399.0461

**Address all purchase orders and payments to:**

**KPM Analytics North America Corporation**

8 Technology Dr. | Westborough, MA 01581 USA | Phone: +1 774.399.0500

**Order entry email:** IRtemp@ProcessSensors.com | www.processsensorsIR.com

# The Differences Between 1-color and 2-color IR Sensors

## 1-COLOR PYROMETERS:

1. **Must set and determine target material emissivity to get accurate temperature.**
  - Short wavelength selection ( $< 3\mu$ ) reduces emissivity errors for shiny metals or semi-shiny materials.
  - Very accurate if emissivity and atmospheric conditions is known and constant.
  - Offers a variety of wavelengths for specific applications.
  - Offers low temperature measurements (Sub-zero).
  - Lower cost.
2. **Measures the average temperature within the pyrometer's Field of View (FOV):**
  - Pyrometer's Spot Size must be smaller than the measured target.
  - Affected by dirty windows or dusty atmosphere.

## 2-COLOR PYROMETERS:

1. **Independent of target emissivity when changes proportionally within each single-color wavelength.**
2. **Measures the weighted peak temperature within the field of view / target**
  - Tolerates up to 99% blockage of the field of view / target.
  - Unaffected by dust, dirty viewing windows / Pyrometer Lens and other contaminants in the field of view.
  - Unaffected by moving targets within the field of view.
  - Higher cost solution compared to 1-color sensors
3. **Limited starting temperature measurements of 300°C / 572°F**

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