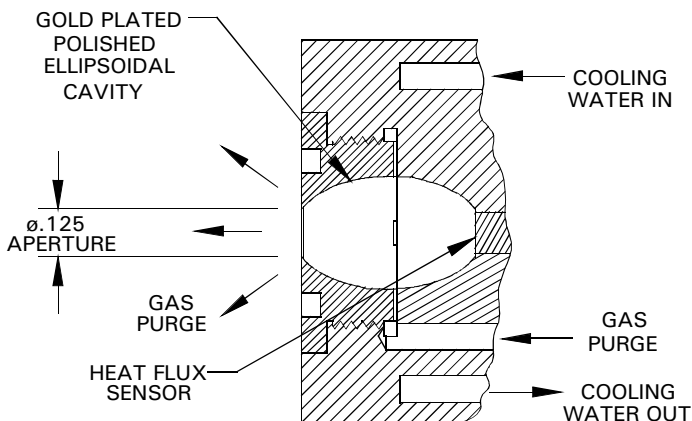


ELLIPSOIDAL RADIOMETERS

SENSOR DETAIL



FEATURES

- Windowless radiometer
- More than 160° field of view
- 1 inch diameter probe or less
- Water cooled, nitrogen purged
- Sturdy construction
- Linear and high output
- Calibration included

APPLICATIONS

- Furnace and flame radiation heat flux measurements
- Radiant flux measurement without window spectral transmittance corrections.

SPECIFICATIONS

- Range: Up to 50 Watts/cm²
- Nominal 10 millivolt output.
- Linearity: ±2%
- Accuracy: ±3%

DESCRIPTION

The Ellipsoidal Radiometer is a windowless infrared radiometer probe designed for furnace and flame radiant heat flux measurements without window spectral transmittance corrections.

The radiometer sensing head is constructed with a reflective gold plated ellipsoidal cavity with the radiometer aperture at one focus of the ellipsoid and a heat flux sensor at the other focus. An inert gas purge is provided to keep the cavity clean.

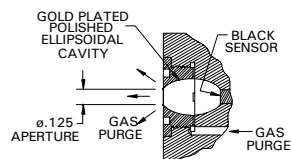
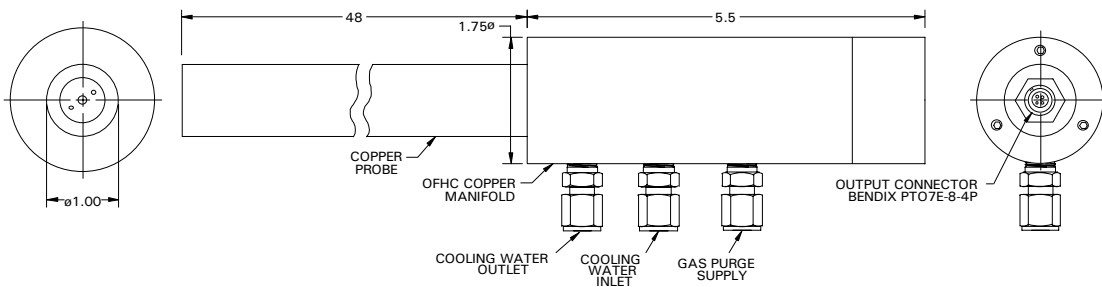
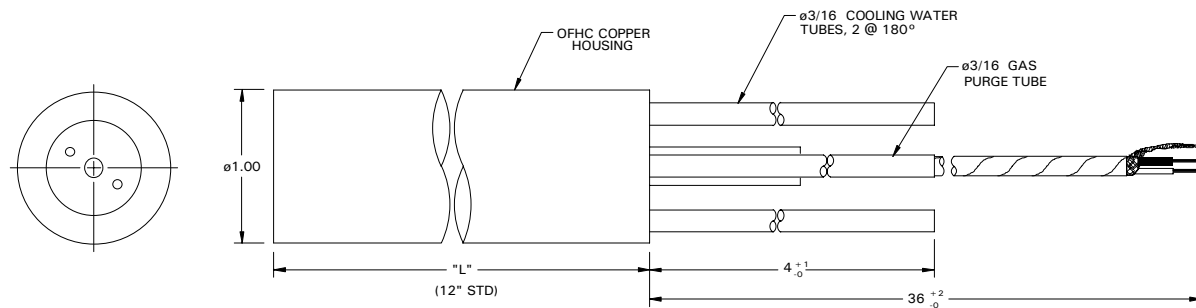
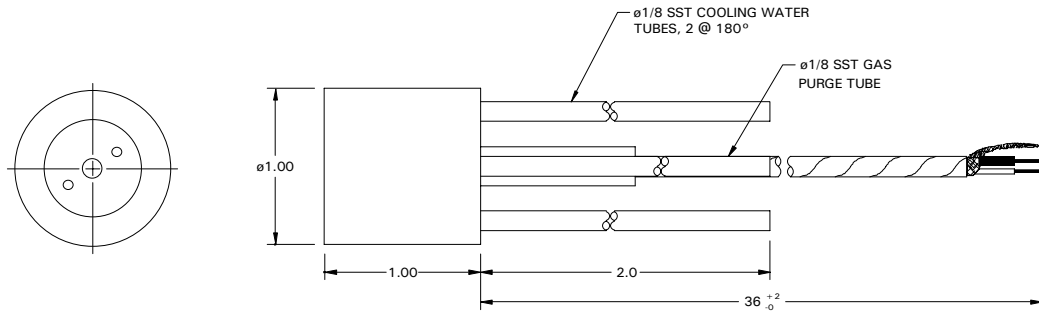
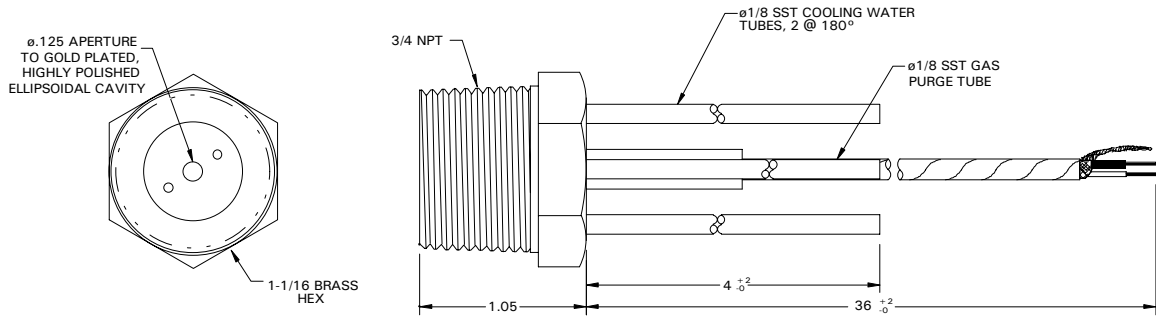
This design provides more than a 160 degree field of view while eliminating the need for the infrared window required by many other radiometer types.

The Ellipsoidal Radiometer is available in a wide variety of external probe configurations, some of which are shown on the back side of this Bulletin. These probes are designed for water cooling and nitrogen purging of the sensor cavity.

When the convective heat flux is desired, a MEDTHERM total heat flux transducer is used to measure the total heat flux. The convective flux is then the difference between the total heat flux and the radiant flux measured by the Ellipsoidal Radiometer. The 64-10-18 total heat flux transducer has the same external configuration as the 64EP-10-20544 Ellipsoidal Radiometer.

When the radiant source is stable, the MEDTHERM H-201 Universal Heat Flux Indicator is recommended as a convenient readout directly in watts/cm² for the Ellipsoidal Radiometer.

EXAMPLES OF SOME AVAILABLE MEDTHERM ELLIPSOIDAL RADIOMETERS



CAVITY DETAIL