

High-Pressure (3000 - 5000 psig) Frost Point Indicator

The Model 5100 High-Pressure Frost Point Indicator (HPFP) is a self-contained instrument, designed to sample the moisture content of a high-pressure compressed air or nitrogen gas stream. The HPFP is designed for manual, intermittent use.

The moisture content of a gas can be expressed by its "dew point" or "frost point" temperature; that is, the temperature to which the gas must be cooled to cause a condensation of moisture as dew (above 32° F) or frost (below 32° F). The HPFP chills a mirror surface and passes a sample of the gas to be checked over this mirror. The operator observes the mirror and notes the mirror temperature at which frost forms on it. This is the frost point of the sample.

The unit requires 115 VAC electrical power and a source of compressed air or nitrogen at 3000 to 5000 psig. The chilling of the mirror is accomplished by using the energy stored in the compressed gas itself by means of Joule-Thompson or adiabatic expansion. Electrical power is used only to operate the digital temperature indicator that displays the mirror temperature.

The HPFP may be used in several ways:

- to determine the actual frost point temperature of a gas sample over the frost point range of 0° F to -70° F,
- to operate only the digital mirror temperature indicator, or
- as a "go/no-go" indicator - by allowing it to cool to a threshold temperature and observing whether or not frost appears.

Specifications:

Manufactured in accordance with Military Specification MIL-I-24144 (listed on QPL 24144)

Operation: Manual

Duty: Semi-portable, intermittent.

Normal Operating Pressure: 3000 to 5000 psig.

Sample Air Flow Rate: 1.5 scfm maximum at 3000 psig and -30° F sample chamber temperature.

Frost Point Indication Range: 0° F to -70° F.

Accuracy: ± 5° F.

Power Requirements: 115 VAC, 60 Hz, single-phase, 10 milliamps approx.

Operating Ambient Temperature: 41° F to 112° F.

Dimensions: 10 in wide x 10 in deep x 12 in high

Weight: 23 lb (30 lb crated)



Howell Laboratories, Inc.

188 Harrison Rd.
Bridgton, Maine 04009

(207) 647-3327

(888) 744-8359

FAX (207) 647-8273

e-mail: contracts@howelllabs.com

web: www.howelllabs.com

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