



**Model 5000**

**T**eledyne's Series 5000 NIR Photometers utilize a chopper stabilized, single beam, single sample cell, dual wavelength optical design. This allows for the continuous monitoring of water and organic compounds (in the liquid or gas phase) that have distinct absorbance peaks within the NIR region of the electromagnetic spectrum.

In addition to providing inherent stability, this design assures automatic compensation for background components whose absorbance can often overlap that of the component of interest.

These analyzers stand apart from other commercially available NIR analyzers by their unique folded optical layout and sample cell / temperature compensated measurement. The 5020's pre-heater design ensures stable performance over a wide sample temperature range or when the process sample must maintain a high temperature physical state.

## **SERIES 5000**

### **NIR Photometers**



**Model 5020**

**Microprocessor Based System:** multiple microprocessors perform advanced signal processing, easy operator interfacing, self-diagnostics, internal calibration, analyzer control and data handling.

**Solid State Detectors:** detectors operate at ambient, non-cooled temperatures, require no mechanical adjustment with minimal assure excellent linearity and long life.

**Digital Signal Processing:** high signal to noise enhancements lead to stable measurements.

**Isolated Sample Cell:** prevents corrosive and flammable gas or liquid streams from coming in contact with electronics, and permits the temperature control and/or compensation of the sample through the cell to be optimized for varying sample conditions. Easy access and removal for maintenance with no critical re-alignment.

**Built for Reliability and Performance**

# SERIES 5000 NIR PHOTOMETERS

## Features

- Three user selectable ranges
- Signal and Range ID output: 0-1 VDC and 4-20 maDC (isolated)
- Programmable auto ranging
- Range ID contacts, 3A@250 VAC resistive
- Two adjustable concentration alarm set points with programmable relay function Form C contacts, 3A@250 VAC resistive
- Programmable auto calibration with mode ID Form A normally open contacts
- Remotely operated calibration (customer supplied valves) and 24 VDC signal, application dependent
- Self diagnostics with Form C failure contacts
- Full duplex RS-232 communication link
- Alphanumeric VF display for set up and diagnostics
- Power 115 / 230 VAC, 50 / 60 Hz

## Performance Specifications

Precision:	±1% full scale or better
Noise:	Less than ±1%
Zero drift:	Less than 1% per day
Response time:	Programmable

Readout	Digital, 2 line alphanumeric device: vacuum fluorescent display (VFD)
Analog output signal:	0-1 VDC (standard) 4-20 mA isolated

## Operating Specifications

Ambient temp range:	32-122° F (0-50° C)
Internal calibration:	Optical span flag / zero and span calibration
Light source:	NIR / VIS: quartz UV: Deuterium, Hg, Xenon IR: quartz
Filter wavelengths:	IR / NIR / VIS: 0.34 - 5.0 microns UV: 0.2 - .5 um
Sample cell:	316 ss / sapphire pressures to 500 PSIG (5020: temp control to 130° C)
Sample flow rate:	20 - 1000 cc / min (5020: 20 - 100 ccm)
Power rating:	115 / 230 VAC, 50 / 60 Hz approximately 200 watts

## Area Classification

Non-hazardous:	Model 5000 / 5000BF
Hazardous / Explosion-proof:	Model 5020
Purge options:	X / Z for Class I or II as per NFPA standards, CENELEC IIB plus H2 (pending) for Zone I applications

## Enclosure Purging \*

Purge air startup:	44 - 88 PSIG (3 - 6 BARG), 0.5 CFM (15 L / min)
Purge optical path:	15 - 30 PSIG (1 - 2 BARG), 10 cc / min, purity of Nitrogen, - 110° F (-80° C) dewpoint

\* If ordered with purge option

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