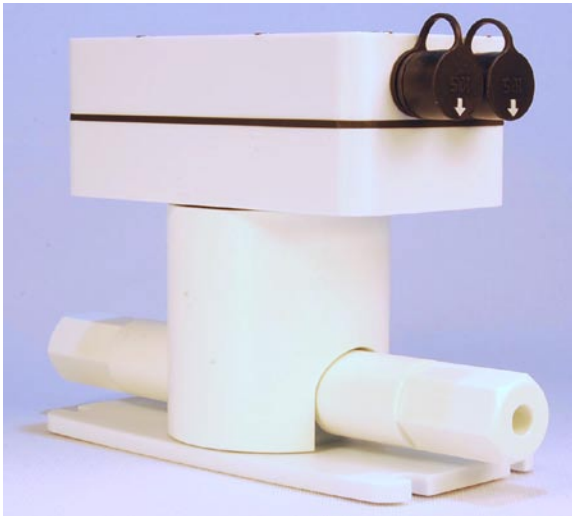


# Concentration Monitor

## NX-148 Hammerhead™



- Provides process monitoring for inline liquid chemical applications in a compact, integrated package
- Provides real-time information for point-of-use chemical/mixing blending, spiking and dilution without process intrusion or interruption
- PC-based graphical user interface software for data collection, analysis, and field calibration
- Stand-alone tool for improved productivity

The Jetalon NX-148 Hammerhead® concentration monitor uses Jetalon's miniaturized optical sensor system to provide real-time, temperature-compensated concentration measurement in a compact, ultrahigh-purity package. The integrated electronics and 148-connect® software package combine convenient, scalable data interface and acquisition options via a graphical user interface.

### Features

#### Sensor:

- Compact, ultrahigh-purity package
- Meets SEMI F57-0301
- Index of Refraction-based measurement
- Design optimizes fluid flow over the sensor
- Fine thread flare end connections standard; other end connections available.
- Optional gas-purge configuration

#### Electronics:

- Integrated with flowcell into single compact package
- DSP-based data acquisition
- FEP-jacketed, EMC-shielded 20ft. (6m) provided; other lengths available

#### Connection:

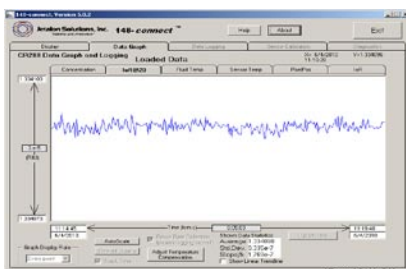
- MODBUS-compliant architecture provides interface for PLC, software with output for concentration, temperature, IoR and sensor configuration
- RS-485 long-distance communication interface
- RS-485-to-USB converter included
- Optional 4-20 mA analog output



Standard Configuration



Gas Purge Configuration



#### 148-connect® Software Package:

- Windows based
- Interfaces into real-time processes
- Real-time concentration and temperature data logging
- Allows rapid field calibration to specific process fluid

## Sensor Materials of Construction

Component	Material
<i>Flowcell</i>	<i>DuPont Teflon (modified PTFE)</i>
<i>Optical Window</i>	<i>Semiconductor-grade Sapphire</i>
Fasteners	PTFE-coated Stainless Steel
Bonnet, mounting plate	Homopolymer polypropylene (PP)
Body-to-bonnet gasket	DuPont Teflon (modified PTFE)

Wetted components listed in *italics*.

## Performance Data

Data based on operation within the calibrated range, +/- 10% of the refractive index range.

- Refractive Index Accuracy (Refractive Index Units, RIU): +/-  $1 \times 10^{-5}$
- Refractive Index Repeatability:  $1 \times 10^{-5}$
- Concentration Accuracy: +/- 0.1% \*
- Concentration Repeatability: 0.01%
- Temperature Accuracy: 0.1 C
- Temperature Resolution and Repeatability: 0.01 C
- Response Time: 1.2 sec (undamped) - damping is user configurable

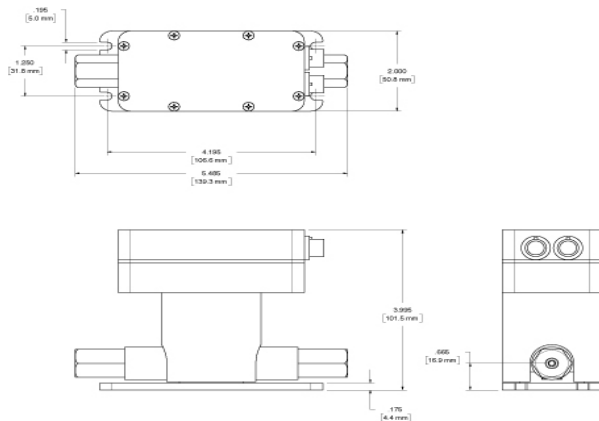
\* Based on measuring ethylene glycol and water at 20 psig (1.3 bar), 76.1 F to 78.8 F (24.5 to 26 C), and a calibration range of 0 to 100% concentration.

## Cleaning and Packaging

Every NX-148® Hammerhead sensor is cleaned and packaged in accordance with SEMI Standard F57-301 for ultrahigh-purity fluid system components. Sensors are laser marked for traceability.

## Testing and Calibration

Every NX-148® Hammerhead sensor is factory leak tested to meet SEMI Standard E49.3, Section 9.2 for allowable leak rate. Each sensor is factory calibrated to deionized water at 20 C. The sensor calibration table can be updated with the 148-*connect*® software to optimize performance with other liquids.



## Technical Data

### Sensor Operating Parameters

Fluid Pressure Rating	0 to 80 psig (0 to 5.5 bar)
Fluid Temperature Rating	60 to 149 F (16 to 65 C)
Process Fluid Index of Refraction Range	1.28000 to 1.46389

### Sensor Operating Parameters

Power Requirements	12-24V (DC) 2 W
Included Power Supply Input Requirements	100/240 V (AC) 50/60 +/- 3 Hz
Output	RS-485 MODBUS
Analog Output [optional]	4 -20 mA
Electrical Connector	IP67-compliant, 12-pole, 1 A, panel-mount type
Ambient Operating Environment	Room Temperature: 77 +/- 9 F (25 +/- 5 C)
Electromagnetic Compatibility	CE-conformity, EN61326, FCC part 15, IDES-001, SEMI E33-94

## Software

Windows-based interface for user setup, calibration, monitoring and data-logging of up to four sensors. System Requirements: Windows 98 or higher, 128+MB RAM, CD-ROM

## Warranty Information

NX-148® Hammerhead is backed by a Limited Lifetime Warranty. For more information, please contact Jetalon directly.

## Purchasing Information

To purchase the NX-148® Hammerhead Integrated Concentration Monitor, please contact Jetalon directly:

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