

# ChemScan®

# UV-2150/N

## WASTEWATER AMMONIA AND NITRATE

### CAPABILITIES

Continuous, On-Line,  
Automatic Monitoring  
One or Two Sample Lines

Two Parameter Analysis

Analog, Serial or MODBUS  
Output Capabilities

Multiple Alarms (Optional)

Continual Self Diagnostics  
with Alarm

### PARAMETERS

Ammonia and Nitrate

### APPLICATIONS

Municipal Wastewater  
- Process (with filtration)  
- Effluent (without filter)

Industrial Wastewater

Sample handling and  
conditioning accessories  
are available for this and  
other ChemScan Analyzers.

- In Situ Cyclic Filters  
- Flow Through Cyclic Filters

### FEATURES

Multiple Wavelength UV  
Absorbance Detection System

Internal Multiple Sample  
Line Manifold

Automatic Zero and Clean

Internal Data Logs

Benign, Inexpensive  
Reagents

No Ion Specific Electrodes  
to Clean or Replace

Simple to Use  
and Maintain

### BENEFITS

A ChemScan On-Line Analyzer  
can automatically provide  
operators with timely process  
chemistry measurements,  
without the need for frequent  
manual sampling or laboratory  
analysis. These measurements  
can be used to:

Assure Process  
Conformance

Control Energy and  
Chemical Costs

Improve Process  
Performance



*For On-Line  
and Real-Time  
Wastewater Analysis*

**ChemScan**  
An  In-Situ Brand

*"Monitoring a World of Water"*

REPRESENTED BY:

**CCLYNCH**  
& ASSOCIATES  
*The Water Monitoring People*

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## ChemScan® UV-2150/N Series Technical Specification

### FUNCTIONS AND OUTPUTS

Measurement Principle	High Resolution, Ultraviolet Absorbance
Detector	256 Element Array
Spectral Range	200 - 450 nm
Calibration Technique	Pattern Recognition of Spectral Data
Number of Parameters	Nitrate and Ammonia Only
Parameter Options	Primary or Secondary Absorbance
Data Communications	4-20mA (4 outputs per sample line max.), RS-232, others optional
Data Log	750 Values Time / Date Stamped, 24 Calibration Spectra
Auto Zeroing	YES (Standard)
Auto Cleaning	YES (Standard)
Analyzer Pump	YES (Standard) Zeroing, Cleaning and Internal Sample Flow Only
Reagent Addition	YES (Standard), Direct Reagent Injection
Number of Sample Lines	1 or 2 through Internal Manifold

### PERFORMANCE SPECIFICATIONS<sup>2</sup>

Reading Interval	3 to 9999 minutes
Response Time	Parameter Dependent (3-5 min. typ.)
Range	Parameter/Site Dependent
Accuracy	Parameter/Site Dependent
	Typ. 2% to 5% of Range
Precision	Parameter/Site Dependent
	Typ. 2% of Range
Zero Drift	Parameter Dependent
	Minimized with Auto Zero

### SAMPLE PARAMETERS

Sample Pressure	Pressurized Sample Lines Std. Regulated to 34-69 Kpa (5-10 psi), (10 psi Fixed Pressure Regulators Provided) (Unpressurized Optional)
Sample Flow	0.5 to 5.0 l/min. 1.5 L flush per sample (0.13 to 1.32 gpm – 0.4 gallon flush)
Filtration Requirement	NONE (For samples meeting turbidity and solids requirements)
Strainer Requirement	#20 Mesh - Opening of 0.69 mm (0.027 inches) provided
Sample Temperature	1 <sup>o</sup> - 60 <sup>o</sup> C (34 – 140 <sup>o</sup> F)
Sample Turbidity	0 - 60 NTU (Standard)
Sample Suspended Solids	0 - 150 mg/l TSS

### MAINTENANCE

Light Source Replacement	Every 4 years
Internal Battery Replacement	Every 2 years
Zero & Cleaning Solutions Refill	As Required (4 weeks typical)
Reagents Refill	As Required (4 weeks typical)

### INSTRUMENT SPECIFICATIONS

Size	102 x 51 x 26 cm (40 x 20 x 10 inches)
Weight	59 kg (130 lbs)
Mounting	Wall (Standard) or Stand (Optional)
Finish Coating / Material	Polyurethane Enamel over Polyester Urethane on Steel (Standard) or Type 316 Stainless Steel (Optional)
Power	120 VAC ±10%, 50-60 Hz, 4 Amps maximum
Power Connection	Hard Wired (Standard) or Plug (Optional)
Power Condition	Dedicated Branch Circuit Free From: Surges/Dips > 10%, RF and Switching Noise
Operator Interface	2 x 20 LCD and 4 x 4 Keypad
Sample Cell Material	Polymer Body with Quartz Windows
Sample Connection	¼" FNPT Fitting
Waste Connection	¼" FNPT Fitting (Open Drain Required)

### OPERATING ENVIRONMENT

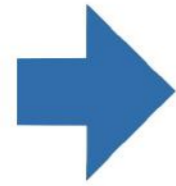
Enclosure Ratings	Upper Enclosure: NEMA 4 (NEMA 4X Optional, 316 SS) Lower Enclosure NEMA 3R(Optional, 316 SS) (shielded spill drain)
Ambient Temperature	5 <sup>o</sup> - 35 <sup>o</sup> C (41 – 95 <sup>o</sup> F)
Relative Humidity	0 - 100% (Non-Condensing) For installation in an indoor or sheltered location

#### Notes:

1. Technical Specifications are subject to change without prior notice.
2. All performance specifications are based on analysis of water standards under factory conditions.



# Data Communication Options



Electronic Interface Enclosure

Analog

Serial

Ethernet IP

## CIM

Customer Interface Module



Features a Max. of Eight 4-20 mA Outputs, Alarms and Input

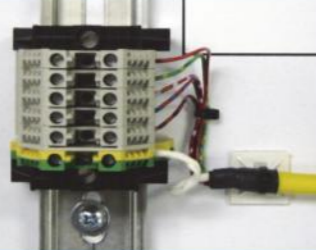
## PLC

Programmable Logic Controller



For use when 4-20 mA Outputs are greater than eight

## RS-232 Modbus RTU



Direct from Analyzer to Terminal Block in EIE

SUB-D RS-232 terminal for temporary laptop connection available in lower enclosure

## RS-422/485 Converter



See Factory for Limitations

## Modbus TCP/IP



## AB Ethernet IP (Allen Bradley)



Typically used when connecting to Allen-Bradley Plant System

# ChemScan<sup>®</sup> Accessories

Sample Handling Options & Data Communication



ChemScan, Inc.  
2325 Parklawn Drive, Suite I  
Waukesha, WI 53186  
Phone 262-717-9500  
ChemScan.com

Contact Your Local Representative for Additional Information:



[www.ChemScan.com](http://www.ChemScan.com)





Wastewater Filter Options

Typical applications:  
 - aeration basins  
 - SBR  
 (sequenced batch reactors)

**External Filter Required**  
 TSS is greater than 150 mg/L  
 NTU is greater than 60

**No Filter Needed**  
 TSS is less than 150 mg/L  
 NTU is less than 60

**In-Situ Cyclic Filter (In-Tank Wand)**



Run is less than 50 ft  
 Lift is less than 10 ft

Maximum of Four Filters/  
 Sample Lines per Analyzer

No external pump required

\* SBR Applications Require  
 Pivoting Wand Mount -  
 Std. Wand is Fixed Angle

Freeze protected (Heat  
 Traced option available)

**Flow-Through Cyclic (FTC) Filter**



Run less than 500 ft



Maximum of Four Filters  
 Per Analyzer

External Pump(s)  
 Required  
 - Provided by ASA  
 or Others

10-20 GPM

**Cross-Flow Filter**



Run is less than 1500 ft.

Maximum of 8 Sample  
 Points Per Filter System

External Pump(s)  
 Required  
 - Provided by ASA  
 Alternative: Valves and  
 Single Central Pump

30 GPM Minimum

**Sample Circulation Chamber (SCC)**

For coarse screening. Algae screening protects analyzer inlet screens and reduces maintenance. Typical applications include post secondary clarifier.

TSS is less than 150 mg/L,  
 NTU is less than 60

Run is greater than 20 ft  
 Lift is greater than 5 ft

Maximum of Eight Sample Lines

External Pump(s) Required

- Provided by ASA or Others  
 - 3 - 10 GPM



**Sample Extraction Accessory**

For use with the ChemScan mini analyzer. Provides a pressurized sample.

TSS is less than 150 mg/L,  
 NTU is less than 60

(Includes Pump and  
 Sample Circulation  
 Loop Assembly)



**Legend**

- TSS - Total Suspended Solids
- NTU - Nephelometric Turbidity Units
- GPM - Gallons Per Minute
- Run - Horizontal Distance to Sample Point
- Lift - Vertical Distance to Sample Point

**Other Accessories**

**Heat Traced Cyclic Sample Line**

Flexible conduit prevents freezing and damage to sample line. An option for any cyclic wand application.



**Outdoor Enclosure**

Providing a stable environment for the ChemScan mini along with the ability to locate the analyzer near the sample site.

**Filter Wand with Disposable Cartridge**

Simple design, no cleaning air, water or chemicals required. Inexpensive operational cost.



**Sample Circulation Pumps**

Light Duty, Submersible Pump  
 1.3" Max. Dia. Solids  
 Weight: 20 - 30 lbs  
 Power: 1/4 - 3/4 HP, 120 VAC 60 Hz  
 Power Cable: 20 feet  
 12 foot SS support cable



Heavy Duty, High Head, Submersible, Grinder Pump. Cast Iron Construction.  
 Weight: 70 lbs  
 Power: 2.3 HP 230 or 460 VAC  
 Power Cable: 30 feet  
 Mounting: Dual guide bars  
 Note: Guide bars are typically provided by others