

# DR 3900™ SPECTROPHOTOMETER

## Applications

- Beverage
- Drinking Water
- Wastewater
- Food QC Lab
- Power



## Prevent measurement errors...simply.

The proven technology you have come to expect from Hach just got better. Built with the future of water analysis in mind, the DR 3900 will give consistently accurate results in a simpler testing format.

### Guided Procedure

The DR 3900 guides you step-by-step through the testing procedure like a GPS, so you can get the accurate results you need every time.

### Elimination of False Readings

Scratched, flawed, or dirty glassware becomes a non-issue when your machine takes 10 readings and eliminates outliers.

### Hands Free Updates\*

RFID technology automatically updates the program calibration factors when you place a TNTplus box near the machine.

### Flexible Connectivity

Built with 1 ethernet and 3 USB ports, the DR 3900 easily connects to your computer and is programmed to easily interface with Hach WIMS™ or any LIMS system.

### Sample Tracking\*

Sample bottles with smart tags can easily be tracked with the optional Hach RFID sample-ID system, eliminating sample mix-ups and providing better sample traceability.

\*RFID technology currently available only in US, Anguilla, American Samoa, Australia, Bolivia, Canada, Cayman Islands, Columbia, Dominican Republic, El Salvador, Federated States of Micronesia, Guam, Guatemala, Marshall Islands, New Zealand, Northern Mariana Islands, Palau, Panama, Puerto Rico, and US Virgin Islands.

## Specifications\*

<b>Operating Mode</b>	Transmittance (%), Absorbance and Concentration, Scanning
<b>Light Source</b>	Gas-filled Tungsten (visible)
<b>Optical System</b>	Reference beam, spectral
<b>Wavelength Range</b>	320 to 1100 nm
<b>Wavelength Accuracy</b>	± 1.5 nm (wavelength range 340 to 900 nm)
<b>Wavelength Reproducibility</b>	± 0.1 nm
<b>Wavelength Resolution</b>	1 nm
<b>Wavelength Calibration</b>	Automatic
<b>Wavelength Selection</b>	Automatic, based on method selection
<b>Spectral Bandwidth</b>	5 nm
<b>Photometric Measuring Range</b>	± 3.0 Abs (wavelength range 340 to 900 nm)
<b>Photometric Accuracy</b>	5 mAbs at 0.0 to 0.5 Abs 1 % at 0.50 to 2.0 Abs
<b>Photometric Linearity</b>	< 0.5 % to 2 Abs ≤ 0.01 % at >2 Abs with neutral glass at 546 nm
<b>Stray Light</b>	< 0.1 % T at 340 nm with NaNO <sub>2</sub>
<b>Display</b>	7 TFT WVGA (800 pix x 480 pix)

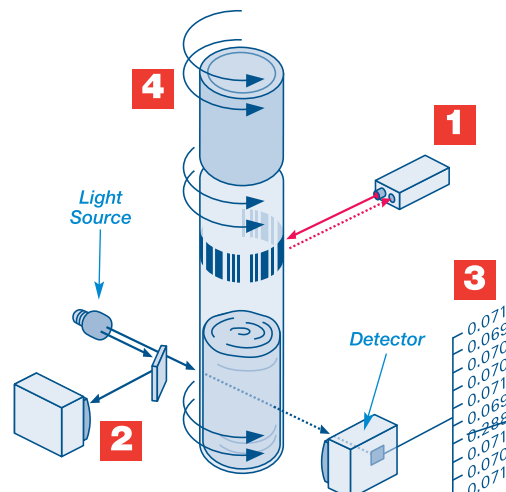
<b>Data Logger</b>	2000 measured values (Result, Date, Time, Sample ID, User ID)
<b>Preprogrammed Methods</b>	> 240
<b>User Programs</b>	100
<b>Sample Cell Compatibility</b>	13 mm round, 16 mm round, 1 cm & 5 cm rectangular, 1 round, 1 square
<b>Dimensions (H x W x D)</b>	5.9 in x 13.8 in x 10 in (151 mm x 350 mm x 255 mm)
<b>Weight</b>	9.26 lbs. (4.2 kg)
<b>Operating Conditions</b>	10 to 40 °C
<b>Storage Conditions</b>	-30 to 60 °C
<b>Enclosure Rating</b>	IP30
<b>Power Supply</b>	Benchtop Power Supply
<b>Power Requirements (Voltage)</b>	110 - 240 V AC
<b>Power Requirements (Hz)</b>	50/60 Hz
<b>Interfaces</b>	USB type A (2), USB type B, Ethernet, RFID module
<b>Warranty</b>	12 months

*\*Subject to change without notice.*

## Principle of Operation

Hach's TNTplus chemistries and spectrophotometers are made to work seamlessly with each other.

- Many of the tests are EPA compliant.
- Over 35 tests available including these popular EPA Approved Parameters:
  - Ammonia
  - COD
  - Chlorine
  - Chromium
  - Iron
  - Nitrate
  - Nitrite
  - Nitrogen
  - Phosphorus
  - Sulfate



## How TNTplus Works

- 1 Barcode Recognition**  
Simply drop in the vial and get results immediately with automatic method detection.
- 2 Reference Detector**  
Monitors and compensates for optical fluctuations.
- 3 10X Measurement and Outlier Elimination**  
Dirty, scratched, or flawed glassware, including fingerprints, is no longer an issue—instrument averages 10 readings and rejects outliers.
- 4 Self-Contained Packaging—Reagents Inside Sealed Cap**  
Reduces exposure to chemicals—no need to open pillows or clean glassware.

See our TNTplus video at: [www.hach.com/tntplus](http://www.hach.com/tntplus)

## Available Tests

The following table lists available tests and overall ranges for the Hach DR 3900 Benchtop Spectrophotometer. The ranges may represent more than one available test for the instrument. Consult your Hach representative, Customer Service, the Hach Master Catalog, or the Hach web site at [www.hach.com](http://www.hach.com) for complete details of all available tests for this instrument.

Parameter	Range	TNTplus Test	Parameter	Range	TNTplus Test
<b>Alachlor</b>	0.1 to 0.5 ppb, threshold		<b>Lead</b>	3 µg/L to 2.0 mg/L	•
<b>Alkalinity, Total</b>	25 to 400 mg/L	•	<b>Manganese</b>	0.006 to 20.0 mg/L	
<b>Aluminum</b>	0.002 to 0.800 mg/L	•	<b>Mercury</b>	0.1 to 2.5 µg/L	
<b>Ammonia, Nitrogen</b>	0.015 to 50.0 mg/L	•	<b>Methylethylketoxime (MEKO)</b>	15 to 1000 µg/L	
<b>Arsenic</b>	0.020 to 0.200 mg/L		<b>Molybdenum, Molybdate</b>	0.02 to 40.0 mg/L	
<b>Atrazine</b>	0.5 to 3.0 ppb, threshold		<b>Nickel</b>	0.006 to 6.0 mg/L	•
<b>Barium</b>	2 to 100 mg/L		<b>Nitrate, Nitrogen</b>	0.01 to 35 mg/L	•
<b>Benzotriazole</b>	1.0 to 16.0 mg/L		<b>Nitrite, Nitrogen</b>	0.002 to 250 mg/L	•
<b>Boron</b>	0.2 to 14.0 mg/L		<b>Nitrogen, Simplified Total Kjeldahl</b>	0 to 16 mg/L	•
<b>Bromine</b>	0.05 to 4.50 mg/L		<b>Nitrogen, Total</b>	0.5 to 150 mg/L	•
<b>Cadmium</b>	.7 µg/L to 0.30 mg/L	•	<b>Nitrogen, Total Inorganic</b>	0.2 to 25.0 mg/L	
<b>Carbohydrazide</b>	5 to 600 µg/L		<b>Nitrogen, Total Kjeldahl</b>	1 to 150 mg/L	
<b>Chloramine, Mono</b>	0.04 to 10.0 mg/L		<b>Ozone</b>	0.01 to 1.50 mg/L	
<b>Chloride</b>	0.1 to 25.0 mg/L		<b>PCB (Polychlorinated Biphenyls)</b>	1 to 50 ppm, threshold	
<b>Chlorine Dioxide</b>	0.01 to 1000 mg/L		<b>Phenols</b>	0.002 to 0.200 mg/L	
<b>Chlorine, Free</b>	0.02 to 10.0 mg/L	•	<b>Phosphonates</b>	0.02 to 125.0 mg/L	
<b>Chlorine, Total</b>	2 µg/L to 10.0 mg/L	•	<b>Phosphorus, Acid Hydrolyzable</b>	0.06 to 100.0 mg/L	
<b>Chromium, Hexavalent</b>	0.010 to 1.00 mg/L	•	<b>Phosphorus, Reactive (Orthophosphate)</b>	19 µg/L to 100.0 mg/L	•
<b>Chromium, Total</b>	0.01 to 0.70 mg/L	•	<b>Phosphorus, Total</b>	0.06 to 100.0 mg/L	•
<b>Cobalt</b>	0.01 to 2.00 mg/L		<b>Potassium</b>	0.1 to 7.0 mg/L	
<b>Color</b>	3 to 500 units		<b>Quaternary Ammonium Compounds</b>	0.2 to 5.0 mg/L	
<b>COD (Chemical Oxygen Demand)</b>	0.7 to 15,000 mg/L	•	<b>Selenium</b>	0.01 to 1.00 mg/L	
<b>Copper</b>	1 µg/L to 8.0 mg/L	•	<b>Silica</b>	3 µg/L to 100 mg/L	
<b>Cyanide</b>	0.002 to 0.240 mg/L		<b>Silver</b>	0.005 to 0.700 mg/L	
<b>Cyanuric Acid</b>	5 to 50 mg/L		<b>Sulfate</b>	2 to 900 mg/L	•
<b>DEHA (Diethylhydroxylamine)</b>	3 to 450 µg/L		<b>Sulfide</b>	5 to 800 µg/L	
<b>Dissolved Oxygen</b>	6 µg/L to 40 mg/L		<b>Surfactants, Anionic</b>	0.002 to 0.275 mg/L	
<b>Erythorbic Acid (Isoascorbic acid)</b>	13 to 1500 µg/L		<b>Suspended Solids</b>	5 to 750 mg/L	
<b>Fluoride</b>	0.02 to 2.00 mg/L		<b>Tannin and Lignin</b>	0.1 to 9.0 mg/L	
<b>Formaldehyde</b>	3 to 500 µg/L		<b>TOC (Total Organic Carbon)</b>	0.3 to 700 mg/L	
<b>Hardness, Total (Calcium and Magnesium as CaCO<sub>3</sub>)</b>	4 µg/L to 4.00 mg/L		<b>Tolyltriazole</b>	1.0 to 20.0 mg/L	
<b>Hydrazine</b>	4 to 600 µg/L		<b>Toxicity</b>	0 to 100% Inhibition	
<b>Hydroquinone</b>	9 to 1000 µg/L		<b>TTHM (Trihalomethanes, Total)</b>	10 to 600 µg/L	
<b>Iodine</b>	0.07 to 7.00 mg/L		<b>TPH (Total Petroleum Hydrocarbons)</b>	2 to 200 ppm, threshold	
<b>Iron, Ferrous</b>	0.02 to 3.00 mg/L		<b>Volatile Acids</b>	27 to 2800 mg/L	•
<b>Iron, Total</b>	0.009 to 6.0 mg/L	•	<b>Zinc</b>	0.01 to 3.00 mg/L	

## Ordering Information

DR 3900 Benchtop Spectrophotometer; includes adapter A for 1 round + AccuVac/1 cm rectangular cuvettes, manual, CD with manual and procedure manual in .pdf format. Power Supply. RFID version available only in a limited number of countries, including US, Australia, Bolivia, Canada, Guatemala, and New Zealand. For complete information, visit [hach.com](http://hach.com) or contact your sales representative.

- LPV440.99.00012** DR 3900 Spectrophotometer with RFID Technology, 110 - 240V  
**LPV440.99.00002** DR 3900 Spectrophotometer without RFID Technology, 110 - 240V

## Accessories

- LZV537** Test Filter Set  
**LZV873** Ethernet cable  
**LZV566** USB Barcode Scanner  
**LZV582** USB Keyboard  
**2960100** Thermo Printer

## Service Options

Comprehensive warranty upgrade includes: All parts, labor, and shipping costs from the factory for depot repairs. One calibration per year on-site, factory recommended maintenance (including required parts), unlimited technical support calls. Also includes a loaner\* while waiting for your factory repair. Please see service terms and conditions for additional details.

*\*Based on availability*

- WRTUPGDR3900** DR 3900 Spectrophotometer WarrantyPlus™ Instrument Protection and Service



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