

# DR 2700™ Spectrophotometer

Spectrophotometry



*The Hach DR 2700 Spectrophotometer has an intuitive touch screen user interface and accommodates a wide range of pre-programmed water analysis methods.*

DW

WW

PW

IW

E

FB

## Features and Benefits

### More than 130 Analytical Methods and Chemistries

The Hach DR 2700 Spectrophotometer can be used for more than 130 analytical methods. (Test parameters are listed on page 3.) All of the chemistries and supplies needed for these tests are available from Hach. The spectrophotometer can store up to 10 user programs and 200 data points, along with the ability to define sample and operator ID.

### Use a USB Memory Stick to Update the Instrument or Transfer Data

Easily update DR 2700 Spectrophotometer systems and transfer measurement data with a USB memory stick. Use it to stay current as Hach releases new test methods and chemistries. For simple storage and analysis, measurement data is stored in .csv format for compatibility with common spreadsheet and data management programs.

### Runs on Either Line Power or Battery Power

Use the DR 2700 spectrophotometer in the lab with regular line power or in the field with the optional, rechargeable lithium battery.

### Small Footprint and Large Touch Screen Interface

The small footprint of the DR 2700 Spectrophotometer—only 8.5 by 13 inches—lets it easily fit into any lab. The touch screen display is intuitive to use and ergonomic in design. Saves testing and training time by allowing users to easily find and select program functions.

### Accommodates Multiple Cell Sizes and Sample Delivery Methods

The DR 2700 Spectrophotometer holds several types of Hach cells—including 1-in. square cells, 1x5-cm cells, and 16-mm round vials. Three adapters are included with the spectrophotometer for other vial types such as 1-in. round/AccuVac® cells, multipath 1-in./1-cm cells, 1x1-cm square cells, and Pour-Thru™ cells. The optional Pour-Thru cell kit is ideal for Rapid Liquid methods when high throughput analysis is needed.

DW = drinking water WW = wastewater municipal PW = pure water / power  
IW = industrial water E = environmental C = collections FB = food and beverage



Be Right™

## Specifications\*

### Operating Mode

Transmittance (%), Absorbance, and Concentration

### Source Lamp

Tungsten

### Pre-Installed Programs

More than 130

### Available User Programs

10

### Data Storage

200 points

### Export Capability

.csv (comma-separated values) file format

### Wavelength Range

400 to 900 nm

### Wavelength Accuracy

±1.5 nm

### Wavelength Resolution

1 nm

### Spectral Bandwidth

5 nm

### Wavelength Calibration

Internal, automatic at power-on, visual feedback

### Wavelength Selection

Automatic based on selected program

### Enclosure Rating

IP41 with lid closed  
IP42 with Protective Cover

### Operating Temperature

10 to 40°C (50 to 104°F)

### Operating Humidity

80% relative humidity, non-condensing, maximum

### Storage Requirements

Temperature: -40 to 60°C (-40 to 140°F)

Humidity: 80% relative humidity, non-condensing, maximum

### Power Requirements

Line: 100 to 240 V; 47/63 Hz; automatic changeover

Battery: Lithium-Ion 11 V/4400 mAh

### Interface

USB 1.1 (10 ft. (3 m) cable, maximum)

### Languages

English, French, German, Italian, Spanish, Portuguese, Korean, Japanese, Chinese, Czech, Danish, Dutch, Hungarian, Polish, Romanian, Russian, Slovak, Swedish, and Turkish

### Connections

1 x USB Type A

1 x USB Type B

### Sample Cell Compatibility

1-in. square

1-in. round

1 cm square

1 x 5 cm

13 mm round

16 mm round

Multipath 1-in./1 cm

Pour-Thru™ with 1-in./1 cm path length

### Accessories

#### Included:

- 1-in. square matched glass sample cells
- Cell adapters for 1-in. round/AccuVac cells, 1x1 cm cells, and multi-path 1-in./1 cm cells
- Universal power supply, 100 to 240V, 47/63Hz, with plug adapters for EU, GB, US, China
- Protective cover for storing adapters

#### Optional:

- Hach Pour-Thru Cell
- Test Filter Set
- External USB Keyboard
- DataTrans™ Software
- Citizen PD-24 Printer

### Dimensions

220 x 137 x 332 mm

(8.7 x 5.4 x 13.1 in.) width, height, depth

### Weight

Without battery: 4.0 kg (8.8 lbs.)

With battery: 4.3 kg (9.5 lbs.)

\*Specifications subject to change without notice.

## Engineering Specifications

1. The spectrophotometer instrument shall be a multiwavelength spectrophotometer designed for laboratory or field analysis of multiple analytes.
2. The instrument shall be capable of measuring the following substances or characteristics: alachlor; aluminum; arsenic; atrazine; barium; benzotriazole; boron; bromine; cadmium; chloride; chlorine dioxide; chlorine; chromium; cobalt; color; copper; cyanide; cyanuric acid; dissolved oxygen; fluoride; formaldehyde; hardness; hydrazine; iodine; iron; lead; manganese; mercury; molybdenum/molybdate; monochloramines; nickel; nitrogen (as ammonia, nitrate, nitrite, total nitrogen, total Kjeldahl nitrogen); chemical oxygen demand; oxygen scavengers; ozone; polychlorinated biphenyls; phenols; phosphonates; phosphorus; potassium; quaternary ammonium compounds; selenium; silica; silver; sulfate; sulfide; surfactants; suspended solids; tannin and lignin; total organic carbon; tolyltriazole; total petroleum hydrocarbons; trihalomethanes; toxicity; volatile acids; and zinc.
3. The following tests shall conform to USEPA-compliant methods: arsenic; chlorine (free); chlorine (total); chlorine dioxide; chromium (hexavalent); copper; fluoride; iron (total); lead; manganese; nickel; nitrogen (nitrite); chemical oxygen demand; phenols; phosphorus (reactive); phosphorus (total); sulfate; sulfide; and zinc.
4. The wavelength range of the instrument shall be 400 to 900 nm with accuracy of ±1.5 nm, resolution of 1 nm, and maximum bandwidth of 5 nm.
5. The instrument, depending on the test selection, shall automatically select the wavelength.
6. Readout modes shall include transmittance, absorbance, and concentration.
7. The interface of the instrument shall be graphical with touch screen.
8. The instrument shall provide graphical display and be capable of printing test results.
9. The instrument shall be equipped with storage capacity for 200 data points (date, time, results, sample ID, user ID) and 10 user-defined calibrations.
10. Information stored in the instrument shall be capable of being downloaded in standard report format.
11. The instrument shall be capable of accepting 1-in. (25 mm) round cells/vials, 1-in. square cells, 13 mm round cells, 16 mm round cells, 1 cm square cells, 1x5 cm cells, and Pour-Thru cells with 1-in./1 cm path.
12. Power requirement shall be line voltage or optional rechargeable battery.
13. The instrument shall be warranted for one full year against defects in materials and workmanship.
14. The instrument shall be model DR 2700 Spectrophotometer, manufactured by Hach Company.

## Available Tests

The following table lists available tests and overall ranges for the Hach DR 2700 Spectrophotometer. The ranges may represent more than one available test for the instrument. Consult your Hach representative, customer service, the Hach Master Catalog (Lit #2550) 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	Parameter	Range
<b>Alachlor</b>	0.1 to 0.5 ppb, threshold	<b>Lead</b>	3 to 300 µg/L
<b>Aluminum</b>	0.002 to 0.800 mg/L	<b>Manganese</b>	0.006 to 20.0 mg/L
<b>Ammonia, Nitrogen</b>	0.01 to 50.0 mg/L	<b>MEKO (Methylethylketoxime)</b>	15 to 1000 µg/L
<b>Arsenic</b>	0.020 to 0.200 mg/L	<b>Mercury</b>	0.1 to 2.5 µg/L
<b>Atrazine</b>	0.5 to 3.0 ppb, threshold	<b>Molybdenum, Molybdate</b>	0.02 to 40.0 mg/L
<b>Barium</b>	2 to 100 mg/L	<b>Nickel</b>	0.006 to 1.80 mg/L
<b>Benzotriazole</b>	1.0 to 16.0 mg/L	<b>Nitrate, Nitrogen</b>	0.01 to 30.0 mg/L
<b>Boron</b>	0.2 to 14.0 mg/L	<b>Nitrite, Nitrogen</b>	0.002 to 250 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>	0.7 to 80.0 µg/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>	0.02 to 100.0 mg/L
<b>Chromium, Hexavalent</b>	0.010 to 0.700 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>	0.02 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 (Oxygen Demand, Chemical)</b>	3 to 15,000 mg/L	<b>Selenium</b>	0.01 to 1.00 mg/L
<b>Copper</b>	1 µg/L to 5.00 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 70 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 40.0 mg/L	<b>Surfactants, Anionic (Detergents)</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>Tolytriazole</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 3.00 mg/L	<b>Zinc</b>	0.01 to 3.00 mg/L

## Ordering Information

- DR2700-01** DR 2700 Spectrophotometer; includes printed instrument manual, procedure manual on CD-ROM, protective cover with Adapters A, B, and C, universal power supply with exchangeable plug adapters for EU, GB, US, and China, and 1-in. square matched glass sample cells
- DR2700-01B1** Same as above but includes a rechargeable lithium battery pack.

### Replacement Parts

- LZV610** Power Supply; 100 to 240V, 47 to 63 Hz, international (exchangeable plug adapters for EU, GB, US, and China)
- LZV583** Adapter A, for 1-cm square cells
- LZV585** Adapter B, for multi-path cell, 1-in./1 cm cells, or Pour-Thru cell
- LZV584** Adapter C, for 1-in. round cells
- LZV565** Replacement Lamp; 6V, 10W
- LZV642** Protective Cover for storing adapters
- LZV646** Light Shield

### Optional Accessories

- 5940400** Pour-Thru Cell Kit; includes 1-in./1 cm Pour-Thru cell, stand, funnel, and tubing
- LZV770** Filter Set; consists of six filters for checking the absorbance accuracy, stray light, and wavelength accuracy
- LZV582** USB Keyboard
- LZY274** DataTrans™ Software
- HYH019** Dust Cover
- LZV551** Rechargeable Battery Pack; lithium-ion 11 V/4400 mAh
- 2960100** Citizen PD-24 Printer Package

## Upgrade your laboratory analytical instrumentation with one of these spectrophotometers...

### DR 2800™ Portable Spectrophotometer

(see Lit. #2489)

The Hach DR 2800 Portable Spectrophotometer offers automatic method detection when used with TNTplus™ reagent vials for reducing test time and potential errors. The optional battery provides portability to multiple points in your system. Intuitive touch screen user interface. Wide range of pre-programmed water analysis methods. The small footprint is an advantage whenever you need a reliable portable analytical tool.



### DR 5000™ UV-Vis Laboratory Spectrophotometer

(see Lit. #2479)

The Hach DR 5000 UV-Vis Laboratory Spectrophotometer offers a broad range of water analysis methods with more than 240 pre-programmed tests. Improved wavelength accuracy, advanced delivery options, high speed scanning. Wavelengths as low as 190 nm. Use Hach TNTplus™ reagents for automatic method detection capability that reduces test time and potential errors.



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In the interest of improving and updating its equipment, Hach Company reserves the right to alter specifications to equipment at any time.

*At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...*

*Keep it pure.*

*Make it simple.*

*Be right.*

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