

Hach Test Kits: Portable Environmental Labs

Portable Environmental Labs

See Inside!

- **PELs include everything you need to test water in various applications on the bench or in the field.**
- **Choose from either a DREL (Direct Read Environmental Lab) with a portable spectrophotometer, or a CEL (Colorimetric Environmental Lab) with a DR/800 Series Colorimeter.**
- **DRELS and CELs combine durable instruments, premeasured reagents impervious to environmental contamination, and apparatus built to withstand field conditions.**



Be Right™

What is a PEL?



Portable Environmental Labs are ready to go anywhere you go.

- *PELs include everything you need to test water in various applications*
- *Stand up to harsh environments, challenging samples*

Choose from either a DREL/2800 (Direct Read Environmental Lab) with the DR/2800 Portable Spectrophotometer or a CEL/800 Series Laboratory (Colorimetric Environmental Lab) with the DR/800 series colorimeter. Both laboratories offer rugged, flexible accuracy.

Using the popular Hach DR/2800 as the backbone, DREL portable laboratories are the ultimate in convenience. Each DREL/2800 combines durable instruments, premeasured reagents impervious to environmental contamination, and apparatus and labware built to withstand harsh field conditions. For laboratory precision in the field, you need a DREL/2800.

If you need speed and mobility in analysis, you need a CEL/800. At the heart of every CEL/800 Series Portable Laboratory is a DR/800 Series Colorimeter. Factory-configured laboratories for drinking water, wastewater, industrial water treatment, water conditioning, educational studies, environmental studies, and aquaculture contain reagent sets, required apparatus, additional instruments, and everything needed to conduct field testing. See page 76 for more information on the DR/800 series colorimeters.

Fast Set Up

Whether you're in the field or at the bench, getting started with your DREL/2800 or CEL/800 Series Laboratory is simply a matter of popping the latch on the case lid, lifting out your instrument, adding reagents to the sample, and reading results.

Whether you equip your DREL with a pH meter, a conductivity/TDS meter, or a portable turbidimeter, you'll find everything you need to run common water quality tests in the portable laboratory configuration.

And because all the instruments have the option of running on batteries, you can run tests immediately without worrying about sample preservation and handling.



For more information, visit www.hach.com



Efficiently cover all your bases.

As standard equipment, each DREL includes a DR/2800 Spectrophotometer, a digital titrator, a rechargeable battery, a battery eliminator/charger, a comprehensive illustrated procedures manual, and a durable carrying case. You may select other instruments for your DREL, including:



*sensION™ Meters
(See pages 42-43
for more information.)*



*2100Q Turbidimeter
(See page 84
for more information.)*



*HQd Meters and IntelliCAL™ Probes
(See pages 24-33
for more information.)*



The DREL/2800 Industrial Water Quality Lab contains everything you need to run tests on approximately 25 different industrial parameters.



Take the DREL/2800 Complete Water Quality Lab with you to conduct field measurements of approximately 24 different water quality parameters.

PEL Quick Reference Guide

PARAMETER	DRINKING WATER				DRINKING WATER & WASTEWATER	
	CEL/890 Advanced Drinking Water Lab Prod. No. 2688100	CEL/850 Basic Drinking Water Lab Prod. No. 2688000	CEL/850 Professional Water Conditioning Lab Prod. No. 2687700	CEL/820 Water Conditioning Lab Prod. No. 2689100	CEL/890 Advanced Portable Lab Prod. No. 2688500	DREL/2800* Complete Water Quality Lab Prod. No. 2922400
Acidity					•	•
Alkalinity (as CaCO ₃)	•	•	•	•	•	•
Aluminum	•	•				
Ammonia (as Nitrogen)					•	•
Bacteria						
Bromine						•
Calcium						•
Carbon Dioxide					•	
Chelant, Total (as EDTA)						
Chloramine (as Cl ₂)	•	•				
Chloride			•		•	•
Chlorine, Free	•	•			•	•
Chlorine, Total	•	•	•	•	•	•
Chlorine Dioxide	•				•	
Chromium						•
Color	•				•	•
Conductivity/TDS	•	•	•	• TDS only	•	
Copper	•				•	•
Dissolved Oxygen	•	•			•	
Fluoride	•	•	•			
Hardness (as CaCO ₃)	•	•	•	•	•	•
Iodine						•
Iron, Total	•	•	•	•	•	•
Manganese	•		•	•	•	•
Molybdenum/Molybdate						
Nitrate (as Nitrogen)	•	•	•	•	•	•
Nitrite (as Nitrogen)	•	•			•	•
Oxygen Scavengers						
Ozone			•			
pH	•	•	•	•	•	•
Phosphonates						
Phosphorus, Reactive	•	•	•		•	•
Phosphorus, Total						•
Residue, Non-filterable						
Salinity						
Silica					•	•
Soap Demonstration			•	•		
Sulfate	•	•	•	•	•	•
Sulfide	•	•			•	•
Sulfite						
Suspended Solids					•	•
Tannin-Lignin			•			
Temperature	•	•	•	•	•	
Turbidity	•	•	•	•	•	•
Water Softener			•	•		
Zinc			•		•	



PEL Quick Reference Guide

Portable Environmental Labs

PARAMETER	POINT OF USE	WASTEWATER		INDUSTRIAL	ENVIRONMENTAL		
	CEL/890 Professional Water Treatment Lab Prod. No. 2688400	CEL/890 Advanced Wastewater Lab Prod. No. 2688300	CEL/820 Basic Wastewater Lab Prod. No. 2688200	DREL/2800 Industrial Water Quality Lab Prod. No. 2922500	CEL/850 Environmental Water Quality Lab Prod. No. 2687800	CEL/850 Aquaculture Lab Prod. No. 2687900	CEL/820 Water Education Lab Prod. No. 2687600
Acidity					•	•	
Alkalinity (as CaCO ₃)	•			•	•	•	
Aluminum		•	•				
Ammonia (as Nitrogen)		•		•	•	•	
Bacteria	•						
Bromine	•			•			
Calcium				•			
Carbon Dioxide					•	•	
Chelant, Total (as EDTA)	•						
Chloramine (as Cl ₂)							
Chloride	•			•		•	
Chlorine, Free	•			•	•		
Chlorine, Total	•	•	•	•	•		•
Chlorine Dioxide	•	•					
Chromium		•		•			
Color	•	•		•			
Conductivity/TDS	•					•	
Copper	•	•		•			
Dissolved Oxygen	•	•	•			•	•
Fluoride							
Hardness (as CaCO ₃)	•			•	•	•	
Iodine				•			
Iron, Total	•	•	•	•	•	•	•
Manganese	•	•		•	•		
Molybdenum/Molybdate	•						
Nitrate (as Nitrogen)		•	•	•	•	•	•
Nitrite (as Nitrogen)	•	•	•		•	•	
Oxygen Scavengers				•			
Ozone							
pH	•	•	•	•		•	•
Phosphonates	•						
Phosphorus, Reactive	•	•	•	•	•	•	
Phosphorus, Total				•			
Residue, Non-filterable							
Salinity							
Silica	•			•			
Soap Demonstration							
Sulfate				•			
Sulfide	•						
Sulfite				•			
Suspended Solids	•	•		•			
Tannin-Lignin					•		
Temperature	•	•	•		•	•	•
Turbidity	•	•	•		•	•	•
Water Softener							
Zinc	•	•			•		

Complete Water Quality Laboratories

Portable Environmental Labs



DREL/2800 Complete Water Quality Laboratory

Product No. 2922400

Contains a DR 2800 portable spectrophotometer and Digital Titrator, along with the reagents and apparatus necessary to run approximately 100 tests* on 24 different parameters. Two test kit cases with molded inserts are included. One case holds the instrument and accessories, and the other case holds reagents and testing apparatus. The instrument case has additional storage space for adding optional pH meter, portable turbidimeter, and 2 probes. Case size (2 cases): 21x11.5x11" (WxDxH)

DREL/2800 Complete Water Quality Laboratory, with Meters

Product No. 2922600 (Shown above.)

Contains a DR 2800, Digital Titrator, sensION™ 156 pH/conductivity meter, 2100Q Portable Turbidimeter, a Platinum series pH electrode, and a conductivity probe along with the reagents and apparatus necessary to run approximately 100 tests* on 24 different parameters. One case holds the instrument and accessories, and the other case holds reagents and testing apparatus. The instrument case has storage space for the included pH meter, portable turbidimeter, and 2 probes. Case size (2 cases): 21x11.5x11" (WxDxH)



Complete Water Quality Laboratories

DREL/2800 Complete Water Quality Laboratory

Parameters	# of Tests*	Range
Acidity [†]	40 - 100	10–4000 mg/L
Alkalinity [†]	40 - 100	10–4000 mg/L
Ammonia	100	0.01–0.50 mg/L
Bromine	**	0.05–4.50 mg/L
Calcium [†]	40 - 100	10–4000 mg/L
Chloride [†]	40 - 100	10–10,000 mg/L
Chlorine, Free & Total	100 (F) 100 (T)	0.02–2.00 mg/L
Chromium 6+	100	0.010–0.700 mg/L
Color	Unlimited	15–500 units
Copper	100	0.04–5.00 mg/L
Hardness [†]	40 - 100	10–4000 mg/L
Iodine	**	0.07–7.00 mg/L
Iron	100	0.02–3.00 mg/L
Manganese	100	0.1–20.0 mg/L
Nitrate	100	0.1–30.0 mg/L
Nitrite HR	100	2–250 mg/L
Nitrite LR	100	0.002–0.300 mg/L
pH (test strips)	50	4–9 pH (Steps: 4, 5, 6, 7, 8, & 9)
Phosphate, Total [‡]	100	0.02–2.50 mg/L
Phosphate, React	100	0.02–2.50 mg/L
Silica HR	100	1–100 mg/L
Silica LR	100	0.020 - 1.600 mg/L
Sulfate	100	2–70 mg/L
Sulfide	100	5 – 800 µg/L
Sulfite [†]	40 - 100	—
Suspended Solids	Unlimited	5 – 750 mg/L

*The titration methods may yield between 40 and 100 tests depending on amount of titrant used.

**Bromine and Iodine tests use the same reagents as the Chlorine tests.

[†]Titration Method.

[‡]Requires additional heating apparatus. See page 311 for Heatab Cookit Kit (Prod. No. 220600) and other heating accessories.

EACH LABORATORY CONTAINS:

DR 2800 Spectrophotometer, Rechargeable Battery, 1" Matched Glass Sample Cells, Instrument Case, Reagent/Apparatus Case, Reagent Set, Apparatus Set, Cell Adapters, Power Supply.

Prod. No. Description

COMPLETE WATER QUALITY LABORATORY

- 2922400** DREL/2800 Complete Water Quality Laboratory
- 2922600** DREL/2800 Complete Water Quality Laboratory With Meters: pH meter: SensION 156 (pH, conductivity, DO), Turbidimeter: 2100Q portable turbidimeter, SensION accessory kit, Electrode, pH: SensION Platinum Series Conductivity probe
- 2923200** Replacement Reagent Set for 2922400, 2922600, and 2951500
- 2923400** Replacement Apparatus Set for 2922400, 2922600, and 2951500

ACCESSORIES

- 5839700** DR 2800 Carrying Case
- 5839100** DREL Apparatus and Reagents Case
- 5838500** DREL Instruments Case

EACH DREL/2800 LABORATORY ALSO CONTAINS:

Apparatus Set (items can be ordered separately)

- 2299442** Beaker, 50 mL (2)
- 1704200** Bottle, mixing, 25 mL (2)
- 69000** Brush (1)
- 108141** Cylinder, grad 50 mL (1)
- 108140** Cylinder, grad poly 25 mL (1)
- 1720500** Delivery tubes - Dig Titr pk/5
- 1690002** Digital Titrator (1)
- 2124720** Dropper pk/20 (1)
- 4530700** Electrode Holder (1)
- 4530600** Electrode Holder Rod (1)
- 50546** Flask, Erlenmeyer 250 mL (2)
- 50541** Flask, Erlenmeyer 50 mL (2)
- 1690008** Manual, Digital Titrator (1)
- 209738** Pipet, 10 mL (2)
- 1465100** Safety Bulb (1)
- 2552200** Sample container (4)
- 2369400** Shears (1)
- 173106** Stopper, for 18 mm tube pk/6 (1)
- 187701** Thermometer (1)

Industrial Water Quality Laboratory

Portable Environmental Labs



DREL/2800 Industrial Water Quality Laboratory

Product No. 2922500

The DREL/2800 Industrial Water Quality Laboratory (2922500) contains a DR 2800 portable spectrophotometer along with the reagents and apparatus necessary to run approximately 100 tests* on 25 different parameters. Two test kit cases are included. One case holds the instrument and accessories, and the other case holds reagents and testing apparatus. The Instrument Case has additional storage space for adding *optional* pH meter, portable turbidimeter, and 2 probes. Case size (2 cases): 21 x 11.5 x 11" (W x D x H)

Hach DREL Portable Water Quality Laboratories are for customers that need the flexibility, accuracy and convenience of a portable spectrophotometer, with all necessary reagents and apparatus, in a rugged, well organized carrying case. These updated kits all include a new DR 2800, reagents and apparatus necessary for running each included test 100 times*.

Hach's water quality laboratories contain everything you need for water analysis— instruments, meters, reagents, apparatus, and accessories—all in convenient, rugged carrying cases!



DREL/2800 Industrial Water Quality Laboratory

Parameters	# of Tests*	Range
Alkalinity†	40 - 100	10–4000 mg/L
Ammonia	100	0.01–0.50 mg/L
Bromine	**	0.05–4.50 mg/L
Calcium†	40 - 100	10–4000 mg/L
Chloride†	40 - 100	10–10,000 mg/L
Chlorine, Free & Total	100 (F) 100 (T)	0.02–2.00 mg/L
Chromium 6+	100	0.010–0.700 mg/L
Color	Unlimited	15–500 units
Copper	100	0.04–5.00 mg/L
Hardness†	40 - 100	10–4000 mg/L
Iodine	**	0.07–7.00 mg/L
Iron	100	0.02–3.00 mg/L
Manganese	100	0.1–20.0 mg/L
Nitrate	100	0.1–30.0 mg/L
Nitrite HR	100	2–250 mg/L
pH (test strips)	50	4–9 pH (Steps: 4, 5, 6, 7, 8, & 9)
Phosphate, Total‡	100	0.02–2.50 mg/L
Phosphate, React	100	0.02–2.50 mg/L
Silica HR	100	1–100 mg/L
Silica LR	100	0.020 - 1.600 mg/L
Sulfate	100	2–70 mg/L
Sulfite†	40 - 100	—
Suspended Solids	Unlimited	5 - 750 mg/L

*The titration methods may yield between 40 and 100 tests depending on amount of titrant used.

**Bromine and Iodine tests use the same reagents as the Chlorine tests.

†Titration Method.

‡Requires additional heating apparatus. See page 311 for Heatab Cookit Kit (Prod. No. 220600) and other heating accessories.

EACH LABORATORY CONTAINS:

DR 2800 Spectrophotometer, Rechargeable Battery, 1" Matched Glass Sample Cells, Instrument Case, Reagent/Apparatus Case, Reagent Set, Apparatus Set, Cell Adapters, Power Supply.

Prod. No. Description

INDUSTRIAL WATER QUALITY LABORATORY	
2922500	DREL/2800 Industrial Water Quality Laboratory
2923300	Replacement Reagent Set for 2922500
2923400	Replacement Apparatus Set for 2922500

ACCESSORIES

5839700	DR 2800 Carrying Case
5839100	DREL Apparatus and Reagents Case
5838500	DREL Instruments Case

EACH LABORATORY ALSO CONTAINS:

Apparatus Set (items can be ordered separately)

2299442	Beaker, 50 mL (2)
1704200	Bottle, mixing, 25 mL (2)
69000	Brush (1)
108141	Cylinder, grad 50 mL (1)
108140	Cylinder, grad poly 25 mL (1)
1720500	Delivery tubes - Dig Titr pk/5
1690002	Digital Titrator (1)
2124720	Dropper pk/20 (1)
4530700	Electrode Holder (1)
4530600	Electrode Holder Rod (1)
50546	Flask, Erlenmeyer 250 mL (2)
50541	Flask, Erlenmeyer 50 mL (2)
1690008	Manual, Digital Titrator (1)
209738	Pipet, 10 mL (2)
1465100	Safety Bulb (1)
2552200	Sample container (4)
2369400	Shears (1)
173106	Stopper, for 18 mm tube pk/6 (1)
187701	Thermometer (1)



CEL/890 Advanced Portable Laboratory

Our most versatile portable laboratory, this fully configured system meets the most demanding needs. It includes a full complement of instruments and reagent sets for more than 20 parameters.

Prod. No. Description

- 2688500** The Advanced Portable Laboratory includes DR/890 Colorimeter, SensION1 pH/ mV/Temp Meter, SensION5 Conductivity/TDS Meter, Digital Titrator, illustrated instrument and procedures manuals, reagent sets, and all required apparatus in a rugged carrying case.
- 2690600** Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Acidity (as CaCO ₃)*	10-4,000 mg/L	100
Alkalinity (as CaCO ₃)*	10-4,000 mg/L	100
Ammonia, LR (as N)	0-0.50 mg/L	100
Carbon Dioxide*	10-1,000 mg/L	100
Chloride*	10-10,000 mg/L	100
Chlorine, Free	0-2.00 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Chlorine Dioxide	7-50 mg/L	†
Color	0-500 units	†
Conductivity/TDS	0-199.9 mS/cm	†
Copper	0-5.00 mg/L	100
Dissolved Oxygen	0-15.0 mg/L	25
Hardness (as CaCO ₃)*	10-4,000 mg/L	100
Iron, Total	0-3.00 mg/L	100
Manganese, HR	0-20.0 mg/L	100
Nitrate (as N)	0-30.0 mg/L	100
Nitrite (as N)	0-0.350 mg/L	100
pH	0-14 pH units	†‡
Phosphate	0-2.50 mg/L	100
Silica, LR	0-1.60 mg/L	100
Sulfate	0-70 mg/L	100
Sulfide	0-0.70 mg/L	100
Suspended Solids	0-750 mg/L	†
Temperature	-10 to 110°C	—
Turbidity	21-1,000 FAU	—
Zinc	0-3.00 mg/L	100

*Titration method.

†No reagent required. For pH and conductivity, see pages 52-53 for standards.

‡pH buffers are included with purchase of CEL/890 Advanced Laboratory, but are not included with purchase of replacement reagent set.



CEL/850 Environmental Water Quality Laboratory

Most important environmental tests can be performed using just one portable laboratory, with everything necessary for determining water quality in the field, and fast, on-the-spot results. The laboratory includes a Digital Titrator.

Prod. No. Description

- 2687800** The Environmental Water Quality Laboratory includes DR/850 Colorimeter, Digital Titrator, reagent sets, apparatus, and illustrated instrument and procedures manuals in a sturdy field case.
- 2690800** Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Acidity (as CaCO ₃)*	10-4,000 mg/L	100
Alkalinity (as CaCO ₃)*	10-4,000 mg/L	100
Ammonia (as NH ₃ -N)	0-0.50 mg/L	100
Carbon Dioxide*	10-1,000 mg/L	100
Chlorine, Free	0-2.00 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Hardness (as CaCO ₃)*	10-4,000 mg/L	100
Iron, Total	0-3.00 mg/L	100
Manganese, HR	0-20.0 mg/L	100
Nitrate, LR (as N)	0-0.50 mg/L	100
Nitrite (as N)	0-0.350 mg/L	100
Phosphate	0-2.50 mg/L	100
Sulfide	0-0.70 mg/L	100
Tannin/Lignin	0-9.0 mg/L	100
Temperature	-10 to 110°C	†
Zinc	0-3.00 mg/L	100

*Titration method.



CEL/890 Advanced Drinking Water Laboratory

The CEL/890 Advanced Drinking Water Laboratory provides complete field capabilities, with instrumentation and tests that cover every major drinking water parameter.

Prod. No. Description

2688100 The Advanced Drinking Water Laboratory includes DR/890 Colorimeter, SensION1 pH meter, SensION5 Conductivity Meter, Digital Titrator, reagent sets, apparatus, illustrated instrument and procedures manuals, and a sturdy field case.

2690200 Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Alkalinity (as CaCO ₃)*	10-4,000 mg/L	100
Aluminum	0-0.800 mg/L	100
Ammonia, Free (as N)	0 - 0.50mg/L	50
Chloramine, mono (as Cl ₂)	0-4.50 mg/L	**100
Chlorine, Free	0-2.00 mg/L	100
Chlorine, Free	0-10.0 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Chlorine, Total	0-10.0 mg/L	100
Chlorine Dioxide	7-50 mg/L	†
Color	25-500 units	†
Conductivity/TDS	0-199.9 mS/cm	†
Copper	0-5.00 mg/L	100
Dissolved Oxygen	0-15.0 mg/L	25
Fluoride	0-2.0 mg/L	25
Hardness (as CaCO ₃)	10-4,000 mg/L	100
Iron, Total	0-3.00 mg/L	100
Manganese, LR	0-0.700 mg/L	100
Nitrate, HR (as N)	0-30.0 mg/L	100
Nitrate, LR (as N)	0-0.50 mg/L	100
Nitrite (as N)	0-0.350 mg/L	100
pH	0-14 pH units	†‡
Phosphate	0-2.50 mg/L	100
Sulfate	0-70 mg/L	100
Sulfide	0-0.70 mg/L	100
Temperature	10 to 110°C	†
Turbidity	21-1,000 FAU	†

*Titration method.

**100 tests for Chloramine or 50 tests for Chloramine plus 50 tests Free Ammonia

†No reagent required.

‡pH buffers are included with purchase of CEL/890 Advanced Laboratory, but are not included with purchase of replacement reagent set.



CEL/850 Basic Drinking Water Laboratory

Designed to include the most commonly tested parameters for drinking water, the CEL/850 Basic Drinking Water Laboratory offers operators basic analytical capabilities in a single convenient package. Monitor influent, finished product, and distribution water quickly and easily.

Prod. No. Description

2688000 The Basic Drinking Water Laboratory includes DR/850 Colorimeter, SensION5 Conductivity Meter, reagent sets, apparatus, illustrated instrument and procedures manuals, and a sturdy field case.

2689800 Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Alkalinity (as CaCO ₃)*	5-400 mg/L	100
Aluminum	0-0.800 mg/L	100
Chloramine, mono (as Cl ₂)	0-4.5 mg/L	**100
Chlorine, Free	0-2.00 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Conductivity/TDS	0-199.9 mS/cm	†
Dissolved Oxygen	0-15.0 mg/L	25
Fluoride	0-2.0 mg/L	25
Hardness (as CaCO ₃)	20-400 mg/L	100
Iron, Total	0-3.00 mg/L	100
Nitrate (as N)	0-30.0 mg/L	100
Nitrite (as N)	0-0.350 mg/L	100
pH	6.5-8.5 pH units	100
Phosphate	0-2.50 mg/L	100
Sulfate	0-70 mg/L	100
Sulfide	0-0.700 mg/L	100
Temperature	10 to 110°C	†
Turbidity	21-1,000 FAU	†

*Titration method.

**100 tests for Chloramine or 50 tests for Chloramine plus 50 tests Free Ammonia

†No reagent required.



CEL/890 Advanced Wastewater Laboratory

The CEL/890 Advanced Wastewater Laboratory includes the testing capabilities of the DR/890 Colorimeter, providing an analytical platform suited to a wide array of additional optional parameters.

Prod. No. Description

- 2688300** The Advanced Wastewater Laboratory includes the testing capabilities of the DR/890 Colorimeter, providing an analytical platform well-suited to a wide array of optional test parameters.
- 2690400** Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Aluminum	0-0.800 mg/L	100
Ammonia (as N)	0-0.50 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Chlorine Dioxide	7-50 mg/L	†
Chromium, Total + Hexavalent	0-0.60	100
Color	25-500 units	†
Copper, HR	0-5.00 mg/L	100
Dissolved Oxygen	0-15.0 mg/L	25
Iron, Total	0-3.00 mg/L	100
Manganese, LR	0-0.700 mg/L	100
Nitrate (as N)	0-30.0 mg/L	100
Nitrite (as N)	0-0.350 mg/L	100
pH	0-14 pH units	†‡
Phosphate, LR	0-2.50 mg/L	100
Phosphate, HR	0-30.0 mg/L	100
Suspended solids	0-750 mg/L	†
Temperature	-10 to 110°C	†
Turbidity	21-1,000 FAU	†
Zinc	0-3.00 mg/L	100

†No reagent required.

‡pH buffers are included with purchase of CEL/890 Advanced Laboratory, but are not included with purchase of replacement reagent set.



CEL/820 Basic Wastewater Laboratory

Offering broad analytical capabilities to meet the needs for basic wastewater analysis, the CEL/820 Basic Wastewater Laboratory provides accurate results, wherever you need them. It also includes the pH Pocket Pal™ Tester.

Prod. No. Description

- 2688200** The Basic Wastewater Lab includes DR/820 Colorimeter, Pocket Pal pH tester, reagent sets, apparatus, and illustrated instrument and procedures manuals in a sturdy field case.
- 2690000** Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Aluminum	0-0.800 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Dissolved Oxygen	0-15.0 mg/L	25
Iron, Total	0-3.00 mg/L	100
Nitrate (as N)	0-30.0 mg/L	100
Nitrite (as N)	0-0.350 mg/L	100
pH	0-14 pH units	†
Phosphate, HR	0-30.0 mg/L	100
Temperature	-10 to 110°C	†
Turbidity	21-1,000 FAU	†

†No reagent required.



CEL/850 Professional Water Conditioning Laboratory

The CEL/850 Professional Water Conditioning Laboratory features the DR/850 Colorimeter, affording extended testing capabilities with the option of adding more parameters for site or application-specific needs. The laboratory includes a sensION1 pH Meter, sensION5 Conductivity Meter, a water softener, and Digital Titrator.

Prod. No.	Description
2687700	The Professional Water Conditioning Laboratory includes DR/850 Colorimeter, sensION1 pH Meter, sensION5 Conductivity Meter, Digital Titrator, reagent sets, apparatus, and illustrated instrument and procedures manuals in a sturdy field case.
2689600	Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Alkalinity (as CaCO ₃)*	10-4,000 mg/L	100
Chloride*	10-10,000 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Conductivity/TDS	0-199.9 mS/cm	†
Fluoride	0-2.0 mg/L	25
Hardness (as CaCO ₃)*	10-4000 mg/L	100
Iron, Total	0-3.00 mg/L	100
Manganese, HR	0-20.0 mg/L	100
Nitrate, LR (as N)	0-0.50 mg/L	100
Ozone, MR	0-0.75 mg/L	25
pH	0-14 pH units	†‡
Phosphate	0-2.50 mg/L	100
Soap Demonstration	—	—
Sulfate	0-70 mg/L	100
Tannin	0-9.0 mg/L	100
Temperature	-10 to 110°C	†
Turbidity	21-1,000 FAU	†
Water Softener	—	—
Zinc	0-3.00 mg/L	100

*Titration method.

†No reagent required. For pH and conductivity, see pages 52-53 for standards.

‡pH buffers are included with purchase of CEL/850 Professional Laboratory, but are not included with purchase of replacement reagent set.



CEL/820 Water Conditioning Laboratory

The CEL/820 Water Conditioning Laboratory offers the water quality improvement/purification professional a capable instrument and all equipment needed to accomplish fast, accurate testing on-site. The laboratory also includes a TDS Pocket Pal™ Tester and a water softener.

Prod. No.	Description
2689100	The Water Conditioning Laboratory includes DR/820 Colorimeter, TDS Pocket Pal™ Tester, reagent sets, apparatus, and illustrated instrument and procedures manuals in a sturdy field case.
2689400	Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Alkalinity (as CaCO ₃)*	5-400 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Hardness (as CaCO ₃)*	20-400 mg/L	100
Iron, Total	0-3.00 mg/L	100
Manganese, HR	0-20.0 mg/L	100
Nitrate, LR (as N)	0-0.50 mg/L	100
pH	6.5-8.5 pH units	100
Soap Demonstration	—	—
Sulfate	0-70 mg/L	100
TDS	10-1,990 mg/L	†
Temperature	-10 to 110°C	†
Turbidity	21-1,000 FAU	†
Water Softener	—	—

*Titration method. †No reagent required.

CEL/890 Professional Water Treatment Laboratory

For boiler/cooling water applications

Offering quick, on-the-spot results, the CEL/890 Professional Water Treatment Laboratory covers parameters critical to effective treatment and corrosion prevention. The laboratory includes sensION1 pH Meter, sensION5 Conductivity Meter, and Digital Titrator. BART™ (Biological Activity Reaction Test) Biotectors are also included for bacterial detection.

BART is a trademark of Droycon Bioconcepts, Inc.

Prod. No. Description

- 2688400** The Professional Water Treatment Laboratory includes DR/890 Colorimeter, sensION1 pH Meter and sensION5 Conductivity Meter, Digital Titrator, BARTs™, reagent sets, apparatus, and illustrated instrument and procedures manuals in a sturdy field case.
- 2690900** Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Alkalinity (as CaCO ₃)*	10-4,000 mg/L	100
Bacteria (Iron-Related, Sulfate-Reducing, Slime-Forming)	Presence/Absence	3 ea.
Bromine	0-4.50 mg/L	100
Chelant, Total (as EDTA)*	0-40.0 mg/L	100
Chloride*	10-1,000 mg/L	100
Chlorine, Free	0-5.0 mg/L	100
Chlorine, Free	0-2.00 mg/L	100
Chlorine, Total	0-10.0 mg/L	100
Chlorine, Total	0-2.00 mg/L	100
Chlorine Dioxide	7-50 mg/L	†
Color	25-500 units	†
Conductivity/TDS	0-199.9 mS/cm	†
Copper, LR	0-210 µg/L	100
Dissolved Oxygen, LR	0-1000 µg/L	25
Hardness (as CaCO ₃)	0-4.00 mg/L	100
Hardness (as CaCO ₃)*	10-4000 mg/L	100
Iron, Total	0-3.00 mg/L	100
Manganese, HR	0-20.0 mg/L	100
Molybdenum, HR	0-40.0 mg/L	100
Nitrite, HR (as NO ₂ ⁻)	0-150 mg/L	100
pH	0-14 pH units	†‡
Phosphate, HR	0-30.0 mg/L	100
Phosphonates	0-125 mg/L	100
Silica, LR	0-1.60 mg/L	100
Silica, UHR	0-200 mg/L	100
Sulfite*	10-800 mg/L	100
Suspended Solids	0-750 mg/L	†
Temperature	-10 to 110°C	†
Turbidity	21-1,000 FAU	†
Zinc	0-3.00 mg/L	100

*Titration method.

†No reagent required. For pH and conductivity, see pages 52-53 for standards.

‡pH buffers are included with purchase of CEL/890 Professional Laboratory, but are not included with purchase of replacement reagent set.



CEL/820 Water, Water Everywhere Education Laboratory

The CEL/820 *Water, Water Everywhere* Education Laboratory offers one easy-to-store, easy-to-use portable system for a complete range of parameters. Students can easily follow the step-by-step instructions to obtain accurate, high-confidence results. The *Water, Water Everywhere* curriculum is available for download at www.hach.com. It covers the basics of water quality, the water cycle, and more.

Prod. No. Description

- 2687600** CEL/820 *Water Water Everywhere* Education Laboratory Includes DR/820 Colorimeter, reagent sets, apparatus, illustrated instrument and procedures manuals, and curriculum in a sturdy field case.
- 2723200** Replacement Reagent Set, complete

Parameter	Range	No. of Tests
Chlorine, Total	0-2.00 mg/L	100
Iron, Total	0-3.00 mg/L	10
Nitrate (as N)	0-30.0 mg/L	100
Dissolved Oxygen	0-15.0 mg/L	25
pH	6.5-8.5 pH units	100
pH (test strips)	0-14 pH units	100
Temperature	-10 to 110°C	†
Turbidity	21-1,000 FAU	†

†No reagent required.