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## **YSI pHotoFlex Colorimeters**

### **Portable Colorimeters for Lab and Field**

The pHotoFlex line of colorimeters is the newest addition to YSI's full range of colorimeters. These rugged, waterproof, multiparameter colorimeters are ideal for laboratory and field testing.

The instruments feature a large, backlit display, waterproof rating, data logging with the ability to export data to a computer using LSdata software, user-defined programs and a 2-year warranty.

#### **Model pHotoFlex STD (colorimeter only) and Model pHotoFlex pH (colorimeter and pH electrode)**

- Calibration adjustment for selected methods
- Data storage; 100 data sets with pHotoFlex STD and 1,000 data sets with pHotoFlex pH
- Large, easy to read backlit LCD display
- IP67 waterproof case; easy to hold or set on a benchtop (lab station also available)
- Flexible, fixed adapter for various cell types features a flip design to accommodate a variety of heights and diameters; it is also attached to prevent it from being lost
- ~138 tests (pHotoFlex pH); 85 tests (pHotoFlex STD)
- PC connectivity to manage data (optional LSdata software) and update firmware or methods; barcode compatibility
- pHotoFlex pH offers a BNC connection in order to take pH measurements directly and to measure the pH dependent parameter  $\text{NH}_3$

#### **Parameters:**

- Aluminum
- Ammonium
- Ammonia (with pHotoFlex pH)
- Chlorine
- COD
- Copper
- DEHA/Oxygen Scavenger
- Hydrazine
- Iron
- Manganese
- Molybdate
- Nitrate
- Nitrite
- Nitrogen
- pH (electrochemically with pHotoFlex pH)
- Phosphate
- Potassium
- Silica
- Sulfate
- Sulfamic Acid

#### **pHotoFlex pH/SET or STD/SET**

Includes the pHotoFlex pH or STD colorimeter with the above features but also comes in a convenient kit including:

field case with field tray, vials, pH electrode (with pH/SET), 2 each 10 mL and 2 mL syringe, empty cuvettes 16+28 mm, cleaning tissues, stand, 2 empty buffer bottles, beaker, screw driver, PC-software LSdata, and RS232 PC cable



## pHotoFlex Colorimeters Reagents

ITEM	PART #	EPA Approved	DESCRIPTION	RANGE
Aluminum Al-1 TP	251400Y	Yes	Powder, pack of 100	0.002 to 0.250 mg/L
Ammonium NH <sub>4</sub> -1 TP	251408Y	Yes	Nitrogen, Ammonia, powder, pack of 100	0.01 to 0.50 mg/L NH <sub>4</sub> -N; 0.01 to 0.64 NH <sub>4</sub> ; NH <sub>3</sub> -N
Ammonium NH <sub>4</sub> -2 TC (LR)	251997Y	Yes	Nitrogen, Ammonia Low Range, vial, pack of 50	0.02 to 2.50 mg/L NH <sub>4</sub> -N; 0.03 to 3.20 mg/L NH <sub>4</sub>
Ammonium NH <sub>4</sub> -3 TC (HR)	251998Y	Yes	Nitrogen, Ammonia High Range, vial, pack of 50	0.4 to 50.0 mg/L NH <sub>4</sub> -N; 0.5 to 64.4 mg/L NH <sub>4</sub> ; NH <sub>3</sub> -N
Chlorine Cl <sub>2</sub> -1 TP	251401Y	Yes	DPD, Chlorine, Free, powder, 10 mL, pack of 100	0.02 to 2.00 mg/L
Chlorine Cl <sub>2</sub> -2 TP	251402Y		DPD, Chlorine, Free, powder, 20 mL, pack of 100	0.5 to 5.0 mg/L
Chlorine Cl <sub>2</sub> -3 TP	251414Y	Yes	DPD, Chlorine, Total, powder, 10 mL, pack of 100	0.02 to 2.00 mg/L
Chlorine Cl <sub>2</sub> -4 TP	251415Y		DPD, Chlorine, Total, powder, 25 mL, pack of 100	0.5 to 5.0 mg/L
Chlorine Cl <sub>2</sub> T1 TT (LR)	251600Y	Yes	DPD, Chlorine, Free, No. 1 Low Range, tablet, pack of 100	0.01 to 6.0 mg/L
Chlorine Cl <sub>2</sub> T2 TT (LR)	251601Y	Yes	DPD, Chlorine, Free, No. 3 Low Range, tablet, pack of 100	0.11 to 6.0 mg/L
Chlorine Cl <sub>2</sub> T3 TT (HR)	251602Y	Yes	DPD, Chlorine, Free, No. 1 High Range, tablet, pack of 100	0.1 to 10 mg/L
Chlorine Cl <sub>2</sub> T4 TT (HR)	251603Y	Yes	DPD, Chlorine, Free, No. 3 High Range, tablet, pack of 100	0.1 to 10 mg/L
COD1 TC (LR)	251990Y	Yes	COD Low Range, vial, pack of 25	3 to 150 mg/L CSB (148°C / 298°F, 2 hrs)
COD1-FTC (LR)	251986Y		COD Low Range, Hg free, vial, pack of 25	0 to 150 mg/L
COD2 TC (MR)	251991Y	Yes	COD Mid Range, vial, pack of 25	20 to 1,500 mg/L CSB (148°C / 298°F, 2 hrs)
COD2-FTC (MR)	251985Y		COD Mid Range, Hg free, vial, pack of 25	0 to 1,500 mg/L
COD3 TC (HR)	251992Y	Yes	COD High Range, vial, pack of 25	200 to 15,000 mg/L CSB (148°C / 298°F, 2 hrs)
COD3-FTC (HR)	251984Y		COD High Range, Hg free, vial, pack of 25	0 to 15,000 mg/L
Copper Cu-1 TP	251403Y	Yes	Copper, Powder, pack of 100	0.5 to 12.00 mg/L
DEHA1 TP	251421Y		Oxygen Scavenger DEHA1, powder, pack of 100	0.004 to 0.450 mg/L
Iron Fe-1 TP	251404Y		Iron, Total, Low Range, powder, pack of 100	0.012 to 1.800 mg/L
Iron Fe-2 TP	251405Y	Yes	Iron, Total, powder, pack of 100	0.02 to 3.00 mg/L
Manganese Mn-1 TP	251406Y		Manganese High Range, powder, pack of 100	0.2 to 20.0 mg/L
Manganese Mn-2 A1	251417A1		Rochelle salt, liquid, 30 mL	Used with LR (251417Y) Manganese if sample has 300 mg/L CaCO <sub>3</sub> hardness
Manganese Mn-2 A2	251417A2		Rochelle salt, liquid, 500 mL	Used with LR (251417Y) Manganese if sample has 300 mg/L CaCO <sub>3</sub> hardness
Manganese Mn-2 TP	251417Y		Manganese Low Range, powder, pack of 50	0.007 to 0.700 mg/L
Molybdate Mo-1 TP	251407Y		Molybdate, powder, 10 mL, pack of 100	0.3 to 35.0 mg/L
Molybdate Mo-2 TP	251418Y		Molybdate, powder, 25 mL, pack of 100	0.3 to 40.0 mg/L
N <sub>2</sub> H <sub>4</sub> 1 TR	251416Y		Hydrazine, 100 mL for 50 tests	0.004 to 0.600 mg/L
Nitrate NO <sub>3</sub> -1 TC	251993Y		Vial, pack of 50 for 25 tests	0.2 to 30.0 mg/L NO <sub>3</sub> -N; 1.0 to 133.0 mg/L NO <sub>3</sub>
Nitrite NO <sub>2</sub> -1 TP	251409Y		Low Range, powder, 10 mL, pack of 100	0.002 to 0.300 mg/L NO <sub>2</sub> -N; 0.007 to 0.985 mg/L NO <sub>2</sub>
Nitrite NO <sub>2</sub> -2 TC	251994Y		Vial, pack of 24	0.03 to 0.60 mg/L NO <sub>2</sub> -N (LR); 0.10 to 1.97 mg/L NO <sub>2</sub> 0.30 to 3.00 mg/L NO <sub>2</sub> -N (HR); 0.99 to 9.85 mg/L NO <sub>2</sub>
Nitrite NO <sub>2</sub> -3 TP	251420Y		Low Range, powder, 25 mL, pack of 100	0.002 to 0.300 mg/L NO <sub>2</sub> -N; 0.007 to 0.985 mg/L NO <sub>2</sub>
Nitrogen Ntot1 TC (LR)	251995Y		Nitrogen Low Range, Total, vial, pack of 50 for 25 tests	0.5 to 25.0 mg/L (Digestion 120°C / 248°F, 30 min)
Nitrogen Ntot2 TC (HR)	251996Y		Nitrogen High Range, Total, vial, pack of 50 for 25 tests	10 to 150 mg/L (Digestion 120°C / 248°F, 30 min)
Phosphate PO <sub>4</sub> -1 TP	251410Y	Yes	Phosphate (Orthophosphate), powder, pack of 100	0.007 to 0.800 mg/L PO <sub>4</sub> -P; 0.02 to 2.45 mg/L PO <sub>4</sub>
Phosphate PO <sub>4</sub> -2 TC	251989Y	Yes	Phosphorus, Reactive (Orthophosphate), vial, pack of 50	0.06 to 5 mg/L PO <sub>4</sub> ; 0.02 to 1.63 mg/L PO <sub>4</sub> -P
Phosphate PO <sub>4</sub> -3 TC	251988Y	Yes	Phosphorus, Total, vial, pack of 50	0.06 to 3.4 mg/L PO <sub>4</sub> ; 0.02 to 1.141 mg/L (Digestion 100°C / 212°F)
Phosphate PO <sub>4</sub> -4 TC	251987Y		Phosphorus, Acid hydrolyzable, vial, pack of 50	0.06 to 3.5 mg/L PO <sub>4</sub> ; 0.02 to 1.141 mg/L (Digestion 100°C / 212°F)
Silica Si-1 TP (LR)	251411Y		Silica Low Range, powder, pack of 100	0.01 to 1.6 mg/L SiO <sub>2</sub> ; 0.005 to 0.748 Si
Silica Si-2 TP (HR)	251412Y	Yes	Silica High Range, powder, pack of 100	0.7 to 70.0 mg/L SiO <sub>2</sub> ; 0.3 to 3.27 mg/L Si w/ 28 mm cell; 1 to 100 mg/L SiO <sub>2</sub> ; 0.5 to 46.7 mg/L Si w/ 16 mm cell
Silica Si-3 TP	251422Y		Silica Ultra High Range, powder, pack of 100	1 to 75 mg/L SiO <sub>2</sub> ; 0.5 to 35.1 mg/L Si
Sulfate SO <sub>4</sub> -1 TP	251413Y	Yes	Sulfate, powder, 10 mL, pack of 100	0 to 70 mg/L SO <sub>4</sub>
Sulfate SO <sub>4</sub> -2 TP	251423Y		Sulfate, powder, 25 mL, pack of 100	2 to 70 mg/L SO <sub>4</sub>

## pHotoFlex Colorimeters Reagents

ITEM	PART # (replacement packs)	DESCRIPTION
Aluminum Al-1 RP1	251400RP1Y	ECR, powder, pack of 100; part of set 251400Y
Aluminum Al-1 RP2	251400RP2Y	Hexamethylenetetramine buffer, powder, pack of 100; part of aluminum 251400Y
Aluminum Al-1 RP3	251400RP3Y	ECR masking, liquid, 25 mL; part of set 251400Y
Ammonium NH4-1 RP1	251408RP1Y	Ammonia, powder, 10 mL, pack of 100
Ammonium NH4-1 RP2	251408RP2Y	Ammonia salicylate, powder, 10 mL, pack of 100
Ammonium NH4-2 RP1	251997RP1Y	Ammonia cyanurate, powder, 5 mL, pack of 50 for 25 tests
Ammonium NH4-2 RP2	251997RP2Y	Ammonia salicylate, powder, 5 mL, pack of 50 for 25 tests
DEHA1 RP1	251421RP1Y	Oxygen Scavenger DEHA1, powder, pack of 100
DEHA1 RP2	251421RP2Y	Oxygen Scavenger DEHA1, liquid, 100 mL for approximately 400 tests
Manganese Mn-1 RP1	251406RP1Y	Manganese citrate buffer, powder, 10 mL, pack of 100
Manganese Mn-1 RP2	251406RP2Y	Sodium periodate, powder, 10 mL, pack of 100
Manganese Mn-2 RP1	251417RP1Y	Alkaline-cyanide, liquid, 60 mL for 50 tests; used with LR Manganese if sample has 300 mg/L CaCO <sub>3</sub>
Manganese Mn-2 RP2	251417RP2Y	Ascorbic acid, powder, pack of 100
Manganese Mn-2 RP3	251417RP3Y	PAN indicator, liquid, 50 tests, 0.1%, 60 mL
Manganese Mn-2 RP4	251417RP4Y	Alkaline-cyanide, liquid, 100 mL
Manganese Mn-2 RP5	251417RP5Y	Alkaline-cyanide, liquid, 500 mL
Manganese Mn-2 RP6	251417RP6Y	PAN indicator, liquid, 0.1%, 100 mL
Manganese Mn-2 RP7	251417RP7Y	PAN indicator, liquid, 0.1%, 500 mL
Molybdate Mo-1 RP1	251407RP1Y	Molybdate High Range 1, powder, 10 mL, pack of 100
Molybdate Mo-1 RP2	251407RP2Y	Molybdate High Range 2, powder, 10 mL, pack of 100
Molybdate Mo-1 RP3	251407RP3Y	Molybdate High Range 3, powder, 10 mL, pack of 100
Molybdate Mo-2 RP1	251418RP1Y	Molybdate High Range 1, powder, 25 mL, pack of 100
Molybdate Mo-2 RP2	251418RP2Y	Molybdate High Range 2, powder, 25 mL, pack of 100
Molybdate Mo-2 RP3	251418RP3Y	Molybdate High Range 3, powder, 25 mL, pack of 100
Nitrogen Ntot-2 RP1	251996RP2Y	Nitrogen, Total, Persulfate, powder, 10 mL, pack of 50
Phosphate PO4-4 RP1	251987RP1Y	Phosphate 3, powder, 10 mL, pack of 50
Phosphate PO4-4 RP2	251987RP2Y	Potassium persulfate, powder, pack of 50
Phosphate PO4-4 RP3	251987RP3Y	Sodium hydroxide, liquid, 1.54 N, 100 mL for 50 tests
Phosphate PO4-4 RP4	251987RP4Y	Sodium hydroxide, liquid, 1.00 N, 100 mL for 50 tests
Silica Si-1 RP1	251411RP1Y	Amino acid F, powder, 10 mL, pack of 100
Silica Si-1 RP2	251411RP2Y	Citric acid, powder, 10 mL, pack of 100
Silica Si-1 RP3	251411RP3Y	Molybdate 3, liquid, 50 mL
Silica Si-2 RP1	251412RP1Y	High Range acid, powder, 10 mL, pack of 100
Silica Si-2 RP2	251412RP2Y	High Range citric acid, powder, 10 mL, pack of 100
Silica Si-2 RP3	251412RP3Y	High Range molybdate, powder, 10 mL, pack of 100
Silica Si-3 RP1	251422RP1Y	High Range acid, powder, 25 mL, pack of 100
Silica Si-3 RP2	251422RP2Y	High Range citric acid, powder, 25 mL, pack of 100
Silica Si-3 RP3	251422RP3Y	High Range molybdate, powder, 25 mL, pack of 100
ITEM	PART # (large packs)	DESCRIPTION
Chlorine Cl2-1 TP	251401LP1Y	DPD, Chlorine, Free, powder, 10 mL, pack of 1000
Chlorine Cl2-2 TP	251402LP1Y	DPD, Chlorine, Free, powder, 25 mL, pack of 1000
Chlorine Cl2-3 TP	251414LP1Y	DPD, Chlorine, Total, powder, 10 mL, pack of 1000
Chlorine Cl2-4 TP	251415LP1Y	DPD, Chlorine, Total, powder, 25 mL, pack of 1000
COD1 TC (LR)	251990LPY	Low Range, vial, pack of 150
COD2 TC (MR)	251991LPY	Mid Range, vial, pack of 150
COD3 TC (HR)	251992LPY	High Range, vial, pack of 150
Iron Fe-2 TP	251405LPY	Iron, Total, powder, pack of 1000
Phosphate PO4-1 TP	251410LPY	Phosphate (Orthophosphate), powder, pack of 1000

## pHotoFlex Colorimeters General Specifications

	<b>pHotoFlex STD</b>	<b>pHotoFlex pH</b>
pH Measurement	No	Yes; BNC connection
Calibration Interval/Record	No	Yes
Special Methods with pH and Temp	No	Yes
User-Defined Programs via LSdata Software	Yes; 50	Yes; 100
Number of Tests	85 (35 predefined and 50 user-defined)	138 (38 predefined and 100 user-defined)
Memory	Yes; 100 data sets	Yes; 1000 data sets
Rechargeable Batteries with Universal Plug	No; requires Lab Station	Optional
<b>Both pHotoFlex STD and pHotoFlex pH</b>		
Calibration Adjustment for Selected Programs	Yes	
Kits Available	Yes	
Data Identification	Yes; numeric	
PC Connectivity	RS232	
Method/Firmware Update via Web	Yes	
Lab Station (rechargeable battery/LSdata)	Optional	
Dimensions	117 x 86 x 236 mm H x W x L (4.6 x 3.4 x 9.3 in H x W x L)	
Weight	0.6 kg (1.3 lbs)	
Battery	4 x 1.5 V, AA; ~3000 measurements	
Certifications	CE, ETLus, cETL, IP67 waterproof	
Temperature		
Operating	0° to 50°C (32° to 122°F)	
Storage	-25° to 65°C (-13° to 149°F)	
Warranty	2 years	

## pHotoFlex Colorimeters Ordering Information

251105Y	pHotoFlex STD - LED colorimeter with 6 wavelengths, 50 user-defined methods plus 35 predefined tests and 100 data set memory
251100Y	pHotoFlex pH - LED filter colorimeter with 6 wavelengths, 100 user-defined methods plus 38 predefined tests with BNC connector for pH electrode and 1,000 data set memory
251200Y	pHotoFlex pH/SET - LED filter colorimeter with 6 wavelengths, 100 user-defined methods with BNC connector for pH electrode and 1,000 data set memory; SET also includes field case with field tray, stand and vials, pH electrode, 2 each 10 mL and 2 mL syringe, empty cuvettes 16+28 mm, cleaning tissues, stand, 2 empty buffer bottles, beaker, screw driver, PC-software LSdata, and RS232 PC cable.
251205Y	pHotoFlex STD/SET - LED colorimeter with 6 wavelengths, 50 user-defined methods and 100 data set memory; SET also includes field case with field tray, stand and vials, 2 each 10 mL and 2 mL syringe, empty cuvettes 16+28 mm, cleaning tissues, stand, 2 empty buffer bottles, beaker, screw driver, PC-software LSdata, and RS232 PC cable.
1P21-2Y	CR2200 Thermoreactor for COD/thermal digestions for up to 12 test tubes, 3 reactor temperatures and 8 fixed programs; 115 V
1P22-2Y	CR3200 Thermoreactor for COD/thermal digestions for up to 24 reaction cuvettes, selectable temperatures and 8 user-defined/8 fixed programs; 115 V
1P23-2Y	CR4200 Thermoreactor for COD/thermal digestions for up to 2x12 reaction test tubes, selectable temperatures and 8 user-defined/8 fixed programs; 115 V
199163Y	LSdata software; GLP compliant PC software for data management and data transfer
251301Y	Lab Station for pHotoFlex series includes LSdata PC software, rechargeable batteries and universal plug, RS232. Barcode compatible.
103637Y	pHotoFlex pH electrode, integrated temperature sensor and BNC and banana plug; 1 m (3 ft) cable
251300Y	Rechargeable battery for the pHotoFlex STD and pH; STD requires Lab Station (251301Y)

A wide variety of accessories exist beyond what is listed. Please visit [YSI.com/pHotoFlex](http://YSI.com/pHotoFlex).

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