



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY  
MATERIALS MANAGEMENT DIVISION  
Powai, Mumbai 400076.

Ref No. (PR No. 1000035615)

(Rfx No. 6100001545)

Sl. No	Technical Specifications	QTY	Compliance	Remark
1	<p><b>Portable Spectrophotometer with USB and Power adapter</b> Operating Mode Transmittance (%), Absorbance and Concentration Source Lamp Xenon Flash Wavelength Range 340 to 800 nm Wavelength Accuracy <math>\pm 2</math> nm (range 340 - 800nm) Wavelength Selection Automatic Wavelength Reproducibility <math>\pm 0.1</math> nm Spectral bandwidth 5 nm Photometric Measuring Range 0 to 3 Abs (wavelength range 340 – 800 nm) Photometric Accuracy <math>\pm 0.003</math> Abs @ 0.0 - 0.5 Abs Photometric Linearity <math>&lt; 0.5</math> % (0.5 - 2.0 Abs) Stray Light <math>&lt; 0.5\%</math> T@340nm with NaNO<sub>2</sub> Display Graphical display 240 x 160 pixel (LCD, b/w, backlit) Data Logger 500 measured values (Result, Date, Time, Sample ID, User ID acc. to GLP) Preprogrammed Methods <math>&gt; 220</math> User Programs 50 Sample Cell Compatibility 13 / 16 mm and 1 inch round adapter, 1 inch square and 10x10mm Dimensions (H x W x D) 3.9 in x 7 in x 10.5 in (98 mm x 178 mm x 267 mm) Weight 3.31 lbs. (1.5 kg) Operating Conditions 10 to 40 °C (50 - 104 °F), max. 80 % relative humidity (non-condensing) Storage Conditions -30 to 60 °C (-22 to 140 °F), max. 80 % relative humidity (non-condensing)</p>	3		

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	Enclosure Rating IP67 <b>Warranty:</b> 12 months from the date of installation			
2	<b>Portable Multi Meter one-channel</b> Backlight: Yes Barometric Pressure Measurement: Automatic compensation of DO when using an LDO or LBOD probe Calibration: Demal (1D/ 0.1D/ 0.01D); Molar (0.1M/ 0.01M/0.001M); NaCl (0.05%; 25µS/cm; 1000µS/cm; 18mS/cm); Standard sea water; User defined Calibration Intervals/Alerts/Reminder: Off, selectable from 2 hours to 7 days Certifications: CE, FCC, ISED, RCM, KC, ETL Verified: US DOE/ NRCan Energy Efficiency, RoHS Conductivity measurement: Temperature correction: None; Linear; NaCl Non-Linear Natural Water. Conductivity Measurement Range: Yes Custom Calibration Standards: Yes Data Export: USB connection to PC or USB storage device (limited to the storage device capacity). Data Memory: 100,000 data points Data Storage: Automatic in Press to Read Mode and Interval Mode. Manual in Continuous Read Mode. Dimensions (H x W x D): 63 mm x 97 mm x 220 mm Display: Up to 3 parameters at a time, dependent on HQ model Display Type: 640x480 Colour TFT DO Measurement Range: 0.1 - 20.0 mg/L (ppm), 1 - 200% saturation DO Resolution: 0.1 Enclosure Rating: IP67 (with battery compartment installed) GLP Features: Date; Time; Sample ID; Operator	3		

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	<p>ID, Calibration</p> <p>Inputs: 1</p> <p>Instrument: Portable</p> <p>ISE Direct Measurement Range: Yes</p> <p>ISE Electrode Calibration: Yes</p> <p>Kit: Meter only</p> <p>Languages: English, Chinese - Simplified, Spanish, French, German, Italian, Japanese, Turkish, Dutch, Portuguese (PT &amp; BR), Korean, Danish, Swedish, Polish, Norwegian, Hungarian, Greek, Finnish, Czech, Romanian, Croatian, Bulgarian, Slovak, Lithuanian, Estonian, Slovenian, Russian</p> <p>Lock Function: Continuous / Auto-stabilisation ("press to read") / At Interval</p> <p>Measurement method: Probe specific programmed method settings</p> <p>Model: HQ4100 Multi/ISE/1 Channel</p> <p>mV Measurement at Stable Reading: Yes</p> <p>mV Measurement Range: Yes</p> <p>mV Resolution: 0.1 mV</p> <p>Operating Error Messages: Clear text error messages displayed</p> <p>Operating Humidity: 90% (non-condensing)</p> <p>Operating Interface: Soft Touch Keypad</p> <p>Operating Temperature: 0 - 60 °C</p> <p>ORP Electrode Calibration: Predefined ORP standards (including Zobell's solution)</p> <p>Parameter: pH, Conductivity, TDS, Salinity, Dissolved Oxygen, ORP, ISE</p> <p>pH Buffer Sets: Colour-coded: 4.01, 7.00, 10.01 pH;</p> <p>IUPAC: 1.679, 4.005, 7.000, 10.012, 12.45</p> <p>DIN: 1.09, 4.65, 9.23</p> <p>User-defined custom buffer sets</p> <p>pH Electrode calibration: 1 - 3 Calibration points</p> <p>Calibration summary data logged and displayed</p> <p>pH Measurement Range: 0 - 14 pH</p> <p>pH Resolution: Selectable: 0.001/0.01/0.1 pH</p> <p>Power supply: Rechargeable lithium-ion battery 18650 (internal)</p> <p>Class II, USB power adapter: 100 - 240 VAC,</p>			

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	<p>50/60 Hz input; 5 VDC at 2 A USB power adapter output (external)</p> <p>Probes included: None</p> <p>Probe Type: Intellical Standard Laboratory or Rugged Field</p> <p>Protection Class: IEC Class III (SELV (Separated/Safety Extra-Low Voltage) powered); external</p> <p>Salinity Measurement Range: 0 - 42 (ppt) (‰)</p> <p>Salinity Resolution: 0.01 (ppt) (‰)</p> <p>Storage conditions: -20 - 60 °C, max. 90% relative humidity (non-condensing)</p> <p>TDS Measurement Range: 0.00 mg/L - 50.0 g/L NaCl</p> <p>TDS Resolution: 0.01 mg/L - 0.1 g/L upon measuring range</p> <p>Temperature Compensation: Automatic</p> <p>Temperature compensation for pH</p> <p>Temperature Measurement: °C or °F</p> <p>Temperature Resolution: 0.1 °C</p> <p>Type of measurement: Field Measurements</p> <p><b>Warranty:</b> 12 months from the date of installation</p>			