



TEK LUMACOLOR™ PHOTOMETERS

J17 • J18 • J1803 • J1810 • J1811 • J1820



FEATURES – BENEFITS

Interchangeable Pre-calibrated Heads
Accurate Spectral and Cosine Corrections
Metric and English Units User Selectable
Large LCD with Backlight
Rugged
Handheld
Adaptable to Many Light Measurement Needs
Battery Operated

J17

Auto-Ranging
Auto Zero
RS-232 Interface (Output Only)
Wide Dynamic Range

J18

Real-time Color Measurements
Ten Memories for Storing Reference Colors (with J1810 color head)
RGB Bar Graphs
D6500 Kelvin Calibration
Color Temperature Measurement
Full Control of Measurements and Output of Results (RS-232)
Analog Output

APPLICATIONS

Automobile Lighting
Aircraft Lighting
Computer and Television Manufacturing and Service
Medical Lighting
Commercial and Industrial Lighting
Photographic Equipment Manufacturing

The Tektronix J17 and J18 are handheld digital Photometers/Radiometers/Colorimeters for the laboratory, field or production area. A J17/J18 System consists of a J17/J18 handheld meter and one of seven interchangeable heads. At the heart of the J17/J18 is a microprocessor capable of performing several functions: Metric-to-US conversion, auto-range, auto zero, hold and conversion between color coordinate systems. The J17/J18 can be used with a PC for automat-

ed testing and data recording. The J17/J18 are powered by a 9-volt battery.

PLUG-IN HEADS PROVIDE MEASUREMENT FLEXIBILITY

Pre-calibrated plug-in heads measure illuminance, luminance and color using CIE coordinates (u' v' or xy). All heads use spectrally corrected silicon photodiodes with multi-element glass filters for long-term stability and accuracy. Connection of a

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head to the J17/J18 automatically selects the correct measurement units. The backlit liquid crystal display can be read easily in dark locations.

J1803 LUMINANCE HEAD

- ▶ Video and projection screens
- ▶ Surface reflectance
- ▶ Computer displays

The J1803 measures luminance, in candelas/m² (nits) or footlamberts, where light scattered or emitted by a surface must be measured. Spectral response is matched to the CIE photopic curve with an f_1' value of less than 3%, ensuring accurate results even when measuring spectrally different light sources.

Per CIE publication 69.

The 8° acceptance angle is determined by internal field-stop apertures.

J1811 ILLUMINANCE HEAD

- ▶ Highway illumination
- ▶ Luminaires and lamps
- ▶ Workstation illumination
- ▶ Lighting for safety

The J1811 is an illuminance head with readout in footcandles or lumens/m² (lux). An integral cosine diffusor corrects the angular response to 180° for an f_2 of 3% or less.

J1810 AND J1820 CHROMATICITY HEADS

- ▶ Color monitor chromaticity and white balance
- ▶ Color temperature

The J1810 and J1820 measure color coordinates in the 1931 CIE and 1976 CIE-UCS chromaticity systems. Color coordinates are automatically computed and displayed in either x and y or u' and v' units. Luminance in candela/m² or foot lamberts may also be measured. The J1820 works with the J17; the J1810 provides similar performance plus real-time color measurements, correlated color temperature measurement and programmable control of the J18.

CHARACTERISTICS

	J1803	J1810	J1811	J1820
Measurement	Luminance	Chromaticity, Luminance	Illuminance	Chromaticity, Luminance
Applications	Displays, Television, Medical	Displays, Television	Highway lighting, Office lighting, Transportation	Displays, Television
Ranges with J17	0.03 to 1,500,000 candelas/m ² (Nit) 0.01 to 500,000 footlamberts	Usable with J18 only	0.001 to 5,000 footcandles	0.001* ¹ to 0.999 x,y and u',v' 0.3* ¹ to 300,000 candelas/m ² (Nit)
Ranges with J18	0.3 to 300,000 candelas/m ² (Nit) 0.1 to 100,000 footlamberts	0.001 to 0.999 x,y and u',v' 0.3 to 1,000 candelas/m ² (Nit) 0.1 to 300 footlamberts	0.01* ¹ to 5,000 lux (lm/m ²) 0.001* ¹ to 500 footcandles	Usable with J17 only
Spectral Response	CIE Photopic	CIE Tristimulus	CIE Photopic	CIE Tristimulus
Spectral Accuracy	$f_1' = < 3\%$ (DIN Class A)	$f_1' = < 3\%$ (DIN Class A)	$f_1' = < 3\%$ (DIN Class A)	$f_1' = < 3\%$ (DIN Class A)
Accuracy	5% ± 2 digits	0.009 at D6500	5% ± 2 digits	0.018 at Illum A
Acceptance Angle	8°	16°	180° (Cosine)	16°
Other Features	Suction cup	Suction cup	Level and cover	Suction cup
Cable Length	3.5 ft.	3.5 ft.	6 ft.	3.5 ft.

*¹ Luminance Only. Minimum chromaticity is 3 cd/m² or 1.0 fl.

ORDERING INFORMATION

J17
Tek LumaColor™ Photometer.

J18
Tek LumaColor™ Photometer.

Both Include: Battery, Operator's Manual. J17 and J18 require one or more of the following heads:

J1803
Luminance Head.

Includes: Operator's Manual, Spectral Curve, Suction Cup, Retainer/Filter Holder, Light Occluder.

J1811
Illuminance Head (cosine corrected).

Includes: Operator's Manual, Spectral Curve.

J1810
Color Head (For Use With J18 only).

Includes: Operator's Manual, Spectral Curve, Suction Cup.

J1820
Color Head (For Use With J17 only).

Includes: Operator's Manual, Spectral Curve.

AVAILABLE ACCESSORIES

RS-232 Cable – Order 012-1411-00.

120 VAC Supply – Order 119-5032-00.

220 VAC Supply – Order 119-3297-00.

Product(s) available through your local Tektronix Distributor listed in the back of this catalog.