

TekLumaColor™ Photometers

J17 • J18



Features

J18

- Real-time Color Measurements
- Ten Memories for storing Reference Colors (with J1810)
- RGB Bar Graph
- D6500 Kelvin Calibration
- Color Temperature Measurement
- Full Control of Measurements Plus Output of Results (RS-232)
- Analog Output

J17

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

COMMON FEATURES

- Interchangeable Pre-calibrated Heads
- Accurate Spectral and Cosine Corrections
- Metric/English Conversions
- Large LCD with Backlight
- Rugged
- Handheld
- Adaptable to Many Light Measurement Needs



J17/J18 Photometers

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 nine interchangeable heads. At the heart of the J17/J18 is a micro-processor 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 automated 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, irradiance, luminance, radiance, light emitting diode (LED) output, and color using CIE coordinates (u' v' or xy). All heads use silicon photodiodes and spectrally-corrected, multi-element, glass filters for long-term stability and accuracy. Connection of a head to the J17/J18 automatically selects the correct measurement units. The backlit liquid crystal display can be read easily in dark locations.

J1803 8° LUMINANCE HEAD

- Video and Projection Screens
- Surface Reflectance

The J1803 measures luminance, in candelas/m² (nits) or footlamberts, where light scattered or emitted by a surface must be measured. Spectral response is closely matched to the CIE photopic curve, ensuring accurate results even when measuring spectrally different light sources.

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

J1805 HEAD FOR LEDs

- Output of Red, Yellow, Green, and Blue LEDs
- The J1805 measures luminous intensity in candelas or millicandelas.

Inserts are supplied to fit common sizes of LEDs. These inserts can be modified by the user for other LED sizes or similar light sources.

J1806 8° RADIANCE/RADIANT INTENSITY HEAD

- Display Color Balance

The J1806 is useful for quickly verifying or resetting color balance once initial color characterization has been done using the J1820 or J1810.

J1811 ILLUMINANCE HEAD

- Highway Illumination
- Luminaires and Lamps
- Workstation Illumination

The J1811 is an illuminance head with readout in footcandles or lumens/m² (lux). A multi-element glass filter and silicon photo-diode ensure a close match to the CIE photopic curve for accurate measurement of spectrally differing light sources.

J1812 IRRADIANCE HEAD

- Laser Experiments
- Infrared LED Testing

The J1812 measures irradiance in milliwatts/m² or output power in milliwatts. The spectral response is flat $\pm 8\%$ from 450 to 950 nanometers. The response is typically down 50% at 400 and 1030 nm.

J1810/J1820 CHROMATICITY HEAD

- Color Monitor Chromaticity and White Balance
- Color Temperature

The J1810/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.

For your local Tektronix representative see the list in the back of this catalog or outside the U.S. call: 1-503-627-1933, inside the U.S. call: 1-800-426-2200.



See Tektronix on the World Wide Web:
<http://www.tek.com>



ISO 9001

Tektronix Measurement
products are manufactured
in ISO 9001 registered facilities.

TekLumaColor™ Photometers

J17 • J18

CHARACTERISTICS

	J1803	J1805	J1806
Measurement	Luminance	Luminance Intensity	Radiant Intensity
Applications	Displays, Television, Medical	LEDs	Displays, Television
Ranges with J17	0.03 to 1,500,000 candelas/m ² (Nit) 0.01 to 500,000 footlamberts	0.01 mcandelas to 100 candelas	0.001 to 1,000 W/m ² /sr
Ranges with J18	0.3 to 300,000 candelas/m ² (Nit) 0.1 to 100,000 footlamberts	0.01 mcandelas to 10 candelas	0.001 to 200 W/m ² /sr
Spectral Response	CIE Photopic	CIE Photopic	Flat
Spectral Accuracy	$f_1' = <3\%$ (DIN Class A)	$f_1' = <3\%$ (DIN Class A)	$\pm 8\%$ 450 to 750 nm
Accuracy	5% \pm 2 digits	5% \pm 2 digits	5% \pm 2 digits
Acceptance Angle	8°	8°	8°
Other Features	Suction cup	LED adaptors	Suction cup
Cable Length	3.5 ft	3.5 ft	3.5 ft

	J1810	J1811	J1812	J1820
Measurement	Chromaticity, Luminance	Illuminance	Irradiance	Chromaticity, Luminance
Applications	Displays, Television	Highway lighting, Office lighting, Transportation	Lasers, IR LEDs, Research	Displays, Television
Ranges with J17	Usable with J18 only	0.01 to 50,000 lux (lm/m ²) 0.001 to 5,000 footcandles	0.01 to 20,000 mW/m ² 1 nW to 2 mW	0.001 to 0.999 x,y and u',v' 0.3 to 300,000 candelas/m ² (Nit) 0.1 to 100,000 footlamberts
Ranges with J18	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 to 5,000 lux (lm/m ²) 0.001 to 500 footcandles	0.001 to 2,000 mW/m ² 0.1 nW to 0.2 mW	Usable with J17 only
Spectral Response	CIE Tristimulus	CIE Photopic	Flat	CIE Tristimulus
Spectral Accuracy	$f_1' = <3\%$ (DIN Class A)	$f_1' = <3\%$ (DIN Class A)	$\pm 8\%$ 450 to 950 nm	$f_1' = <3\%$ (DIN Class A)
Accuracy	0.009 at D6500	5% \pm 2 digits	5% \pm 2 digits	0.018 at Illum A
Acceptance Angle	16°	180° (Cosine)	96° (Approx.)	16°
Other Features	Suction cup	Level and cover	Cover	Suction cup
Cable Length	3.5 ft	6 ft	6 ft	3.5 ft

ORDERING INFORMATION

For price information: Outside the U.S. contact your local Tektronix representative,
inside the U.S. see the price list in the back of this catalog.

J17
TekLumaColor™ Photometer.

J18
TekLumaColor™ 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.

J1805
LED Head.
Includes: Operator's Manual, Spectral Curve, Two LED inserts, Rubber Retainer.

J1806
Radiance/Radiant Intensity Head.
Includes: Operator's Manual, Spectral Curve, Suction Cup.

J1811
Illuminance Head (cosine corrected).
Includes: Operator's Manual, Spectral Curve.

J1812
Irradiance Head
Includes: Operator's Manual, Spectral Curve.

J1810
Color Head (J18 only)
Includes: Operator's Manual, Spectral Curve, Suction Cup.

J1820
Color Head (J17 only).
Includes: Operator's Manual, Spectral Curve.

AVAILABLE ACCESSORIES

RS-232 Cable – Order 012-1411-00.

120 V AC Supply – Order 119-5032-00.

220 V AC Supply – Order 119-3297-00.

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Tektronix Measurement products are manufactured in ISO registered facilities.