



# Advanced Test Equipment Rentals

www.atecorp.com 800-404-ATEC (2832)

J17  
J1803  
J1805/06

J1811/12  
J1820

## Photometer

*The new J17 builds on 20 years of Tektronix experience in light measurement.*

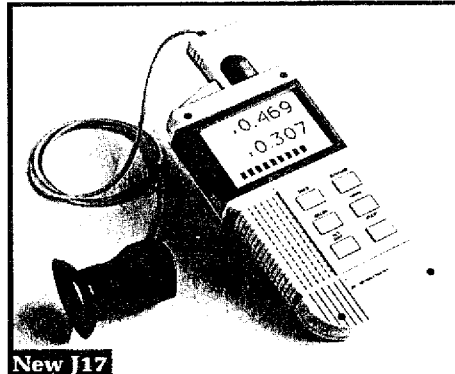
*The J17 is smaller and has built in features typical of products costing much more.*

### J17

- Improved Photopic Spectral Response (Patent Pending)
- Interchangeable Pre-calibrated Measurement heads
- Accurate Spectral and Cosine Corrections
- CIE Color Measurement Head
- Metric/US Unit Conversions at a Touch of a Button
- Auto-Range, Auto-Zero
- Large LCD with Backlight
- RS-232 Output

### BENEFITS

- Easy to Read in Dark Areas
- Rugged, Handheld
- Adaptable to Many Light Measurement Needs



New J17

### J17 Photometer

The Tektronix J17 is a new Portable Handheld Digital Photometer/Radiometer/Colorimeter capable of making a wide range of light measurements — in the laboratory, in the field, or in the production area. A J17 system consists of a J17 handheld and one of several interchangeable heads which connect directly to the J17. At the heart of the J17 is a microprocessor that is capable of performing several functions at the touch of a front panel button: Metric-to-English conversion, auto-range, auto-zero, hold, and conversion between color coordinate systems.

Several pre-calibrated plug-in heads are available for measuring illuminance, irradiance, luminance, radiance, light emitting diode output, and color using CIE coordinates (u'v' or xy). Connection of a head to the J17 automatically selects the correct front panel measurement units. The large liquid crystal display can be easily read in low ambient conditions using the built-in backlight.

All measurement heads use silicon photodiodes spectrally corrected with multi-element glass filters for maximum long-term stability and accuracy.

The RS-232 output can be utilized in conjunction with a PC for automated testing and data recording.

Under normal usage, the internal 9 volt battery will operate the J17 for thirty hours. For extended operation, the optional AC power supply is recommended.

The J17 is a replacement for the Tektronix J16. The J17 measures a wider range of light levels with greater versatility, and ease of use. It is smaller, lighter, and has longer battery life. All environmental and accuracy specifications equal or exceed those of the time proven J16.

### J1803 8° LUMINANCE HEAD

- TV and Computer Display Screens
- Projection Screens
- Surface Reflectance

The J1803 measures luminance in candelas/m<sup>2</sup> (nit) or foot-lamberts where light scattered or emitted by a surface must be measured. The head is pointed at the emitting surface.

The head's spectral response is very closely matched to the CIE photopic curve, ensuring accurate results even when measuring spectrally different light sources.

The acceptance angle is approximately 8 degrees, which is determined by internal field stop apertures. Providing that the 8 degree field is uniformly filled, the probe can be held at any distance from the source. The 8 degree acceptance angle represents about a 1.7 inch diameter field at one foot and is proportionately larger at greater distances. The minimum measurement area is about 0.5 inch diameter with the J1803 in contact with the surface to be measured using the supplied suction cup.

### J1805 HEAD FOR LEDs

- Output of Red, Yellow, Green, and Blue LEDs

The J1805 measures luminous intensity in candelas or millicandelas. Four inserts are supplied with the J1805 to fit common sizes of LEDs (2 each 0.120 inch, and 0.200 inch diameter). These inserts are made of plastic that can be easily modified by the user for other LED sizes or similar light sources.

In the J1805, the silicon photodiode-filter combination provides an excellent match to the CIE photopic curve. Note: For infrared LEDs, use the J1812 probe.



Product also available within 24 hours through TekDirect. Call 1-800-426-2200

To order, contact your local sales office (listed on the inside back cover) or call the National Marketing Center at 1-800-426-2200, Ext. 99.

# Photometer

<u>J17</u>	<u>J1811/12</u>
<u>J1803</u>	<u>J1820</u>
<u>J1805/06</u>	



New J1803

## J1806 8° RADIANCE/RADIANT INTENSITY HEAD

- Display Color Balance

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

## J1811 ILLUMINANCE HEAD

- Highway Illumination
- Luminaires and Lamps
- Workstation Illumination
- Light Trespass
- Office Lighting

The J1811 is an illuminance head with readout in footcandles or lumens/m<sup>2</sup> (lux). A multi-element glass filter and silicon photo-diode ensure a close match to the CIE photopic curve (color corrected) for accurate measurement of spectrally differing light sources including trichromatic fluorescent, sodium, metal halide, etc. The silicon-sensor recovery time is virtually instantaneous; low-light levels can be measured immediately after exposure to bright sunlight. The wide sensitivity range allows measurement of light levels from moonlight to bright daylight.

The angular response is accurately cosine corrected, simulating an ideal 180° field-of-view detector. The low-profile sensor has a leveling indicator to ensure accurate measurements where a significant proportion of the illumination comes from sources at low angles to the horizon such as roadway lighting.

A six-foot cable between the J1811 head and the J17 allows the user to be out of the field of view while making measurements.

## J1812 IRRADIANCE HEAD

- Laser Experiments
- Radiant Efficiency
- Infrared LED Testing

The J1812 measures irradiance in milliwatts/m<sup>2</sup> or output power in milliwatts. The spectral

response is flat from 450 to 950 nanometers within ±8%. The response is typically down 50% at 400 and 1030 nm.

## J1820 CHROMATICITY HEAD

- Measurement of Chromaticity and White Balance of color monitors
- Color Temperature of Light Sources

The J1820 is for measurement of color coordinates in the 1931 CIE and 1976 CIE-UCS chromaticity systems. Three stable silicon sensors, each with multi-element glass color filters, closely match the CIE standard observer tristimulus functions. Color coordinates are automatically computed and displayed in either x and y or u' and v' units. Luminance in cd/m<sup>2</sup> or footlamberts may also be measured by selecting the desired function with a keyboard button.

The J1820 has approximately a 16° acceptance angle, making it ideal for measurement of computer and television display color. The 16° angle represents a spot of about 3.4 inch diameter per foot of distance. The minimum measurement area is about 1 inch with the head in contact with the surface to be measured. This allows integration over a large enough area on a display to average a number of individual pixels. A rubber suction cup allows the J1820 to be fastened directly to the display screen.

J17  
J1803  
J1805/06

J1811/12  
J1820

# Photometer

## HEAD CHARACTERISTICS

Application	Illuminance	Irradiance	Luminance	LED	Radiance	Chromaticity
Probe	J1811	J1812	J1803	J1805	J1806	J1820
<b>US Range</b>	0.001 to 9,999 footcandles	N/A	0.1 to 999,990 footlamberts	N/A	1 mw/M <sup>2</sup> /SR to 1.6 Kw/M <sup>2</sup> /SR	Luminance same as J1803
<b>Metric</b>	0.01 to 99,990 lumens/m <sup>2</sup> (lux)	0.01 to 9,999 milliwatts/m <sup>2</sup>	1 to 9,999,000 candelas/m <sup>2</sup> (nits)	1 micro-candela to 999.9 cancelas	1 mw/M <sup>2</sup> /SR to 1.6 Kw/M <sup>2</sup> /SR	0 to 0.999 x, y, u', v'
<b>Accuracy (Including J17)</b>	Within 5% of NIST standards and ±2 digits in last place. Calibrated with an Illuminant A light source.	Same as J1811 except calibrate with a 762 nm filter.	Within 5% of NIST standards and ±2 digits in last place. Calibrated with an Illuminant A light source	Within 5% of NIST standards and ±2 digits in last place. Calibrated with an Illuminant A light source.	Same as J1811, except calibrated with a 656 nm filter.	0.018 x, y, u', v' Illuminant A.
<b>Spectral Response</b>	CIE photopic curve	Flat within ±8% from 450 to 950 nm	CIE photopic curve	CIE photopic curve	Flat within ±8% from 450 to 750 nm	CIE Tristimulus functions
<b>Acceptance Angle</b>	Cosine corrected (180°)	50% sensitivity at 48° off axis	8° (1.7 in. diam/ft; minimum area of 0.5 in.)	8°	8° (1.7 in. diam/ft; minimum area of 0.5 in.)	16° (3.4 in. diam/ft; minimum area of 1 in.)
<b>Features</b>	6 ft. cable	6 ft. cable	3.5 ft. cable Suction cup Light occluder	0.120 in. and 0.200 in. LED adapters, 3.5 ft. cable	3.5 ft. cable	Rubber suction cup for fastening to the display screen, 3.5 ft. cable
<b>Linearity</b>	Within 2% over entire range enabling single point calibration					

## ORDERING INFORMATION

**J17**  
LumaColor Photometer  
**Includes:** Battery, and Operator's Manual..... **TD** \$950

**J1803**  
Luminance Head  
**Includes:** Suction Cup, Retainer/Filter Holder, Light Occluder and Operator's Manual..... **TD** \$550

**J1805**  
LED Head  
**Includes:** Four Adapters for the most common LEDES, Rubber Retainer and Operator's Manual..... **TD** \$550

**J1806**  
Radiance/Radiant Intensity Head  
**Includes:** Rubber retainer for holding customer supplied 1 in. diameter filters and Operator's Manual..... **TD** \$550

**J1811**  
Illuminance Head, cosine and photopic corrected.  
**Includes:** Cover, Operator's Manual..... **TD** \$675

**J1812**  
Irradiance Head  
**Includes:** Cover, Operator's Manual..... **TD** \$675

**J1820**  
Color Head  
**Includes:** Suction Cup and Operator's Manual..... **TD** \$1,450

**ADDITIONAL ACCESSORIES**  
Also see Accessory Section.

**RS-232 Cable** - Order 012-1411-00..... **\$55**  
**AC Supply** - 120 V. Order 119-5032-00..... **\$26**

**TD**

Product also available within 24 hours through TekDirect. Call 1-800-426-2200

To order, contact your local sales office (listed on the inside back cover) or call the National Marketing Center at 1-800-426-2200, Ext. 99.