KONICA MINOLTA

Compatible with PWM-controlled sources

New

Illuminance Meter
T-10A series

Illuminance meters that conform to JIS AA Class and DIN Class B requirements.
Compatible with new, next-generation light sources including PWM-controlled sources

Can be used for simple, inexpensive multi-point measurements.
Mini receptor model also available to enable illuminance measurements even in narrow spaces.

Giving Shape to Ideas

For simple but accurate illuminance measurements. Makes creating illuminance measurement systems such as multi-point measurement systems easy!

Reliable, worry-free illuminance meters that conform to JIS AA Class and DIN Class B

Illuminance Meters T-10A and T-10MA conform to Class AA of JIS C 1609-1: 2006 "Illuminance meters Part 1: General measuring instruments" and DIN 5032 Part 7 Class-B " Photometry; classification of illuminance meters and luminance meters" requirements to provide high-accuracy, high-reliability, worry-free measurements.
Illuminance meters conforming to these standards are required for measurements of general illumination light sources, white LED lamps for illumination, etc. in a variety of industrial fields.

Easy, inexpensive multi-point measurement (2 to 30 points).

Illuminance distribution of a projector etc. can be easily measured with a single instrument and several receptors.

Compatible with PWM-controlled lighting. Enables measurements of next-generation light sources.

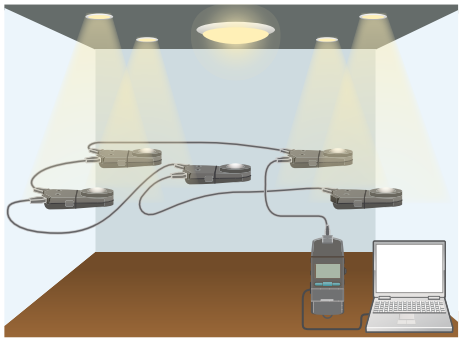
Conventional illuminance meters often cannot accurately measure PWM-controlled light sources, but the T-10A series of illuminance meters can be used to accurately measure even such light sources.

Removable receptor

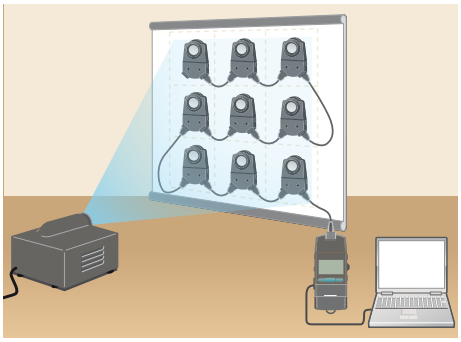
The receptor and main body can be detached from each other and then connected using a LAN cable, making it easy to install as part of an inspection system.

Multi-point illuminance measuring system

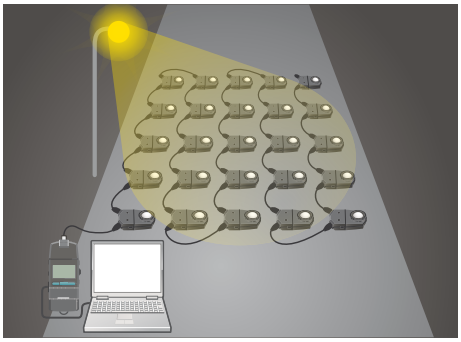
- 5-point example: Architectural lighting, etc.



- 9-point example: Projectors, etc.



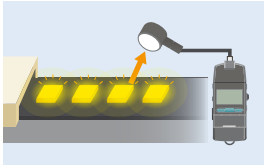
- 25-point example: Street lighting, etc.



Main applications

- Government testing organizations
- Research/inspection at illumination equipment makers
- Maintenance at factories, offices, hospitals, etc.
- Illuminance control of security lighting, street lighting, etc.
- Checking light sources for construction

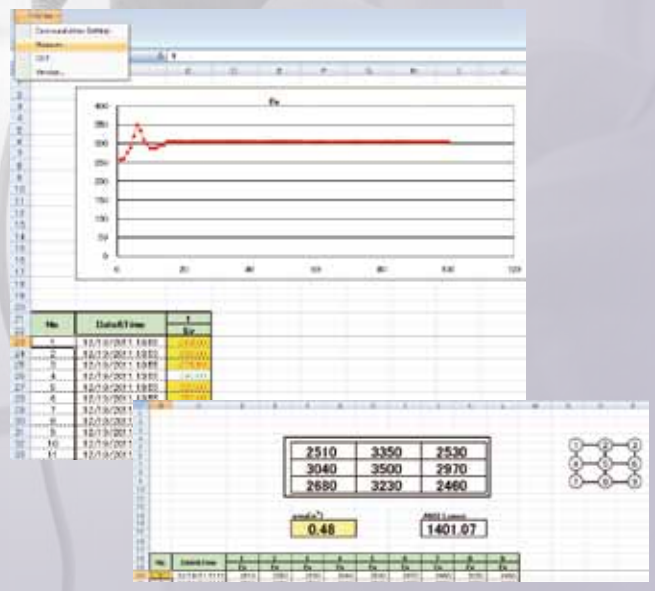
- Lighting control at LED-lit factory farms
- As sensor for equipment measuring total flux or light-distribution characteristics, etc.



Data Management Software T-S10w (Optional accessory)

Convenient, easy-to-use Excel® add-in software

Reads measurement data from T-10 series Illuminance Meters directly into Excel®. Further processing of data can then be performed easily using the various functions of Excel®.



Data transfer using buttons on main body

When using T-S10w, measurements can be taken and data sent to Excel® by using not only the computer keys but also by using the buttons on the T-10A main body.

Multi-point measurement and CCF calibration possible

Measurements of up to 30 points can be controlled. A CCF (Color Correction Factor) function is also provided to enable calibration to user standards.

Main specifications of Data Management Software T-S10w

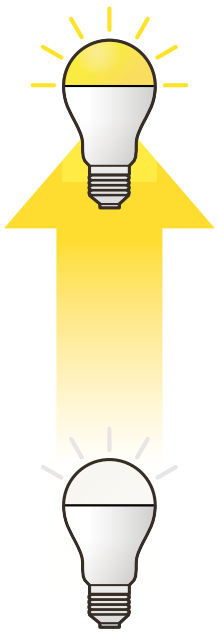
Type	Add-in for Excel® (Excel® is required to use this add-in.)
Operating environment	One of the following environments with Excel® installed: * Languages in parenthesis ( ) are the OS language. Windows® XP + Excel® 2003 (English, Japanese, or Simplified Chinese) Windows® 7 + Excel® 2010 (English, Japanese, or Simplified Chinese) * For details on system requirements for above versions of Windows® and/or Excel®, refer to their respective specifications.
Compatible instruments	T-10A, T-10MA, T-10WSA, T-10WLA, T-10, T-10M, T-10WS, T-10WL

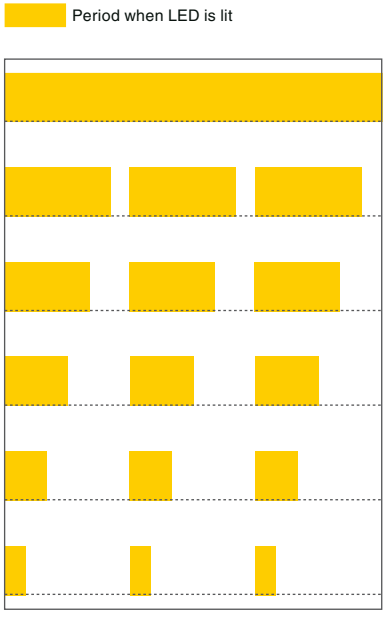
About PWM-controlled lighting

PWM is the abbreviation of Pulse Width Modulation, and refers to the method of controlling signal intensity by controlling the ratio between the ON period and OFF period of a pulse signal.

A pulse signal is a signal which repeatedly alternates between ON and OFF, and the percentage of ON period during a single cycle is referred to as the "duty cycle".

PWM-controlled lighting is a method for controlling the brightness of a lamp by controlling the duty cycle (lit time) of light from a pulse-emission source. As the lit time becomes longer, the light becomes brighter, and conversely, as the lit time becomes shorter the light becomes darker.





<Standard receptor>

T-10A

<Mini receptor>

T-10MA/T-10W$_S$A/T-10W$_L$A

Receptor diffuser window: Ø 25 mm

Receptor diffuser window: Ø 14 mm

T-10A

Conforms to JIS AA Class and DIN class B

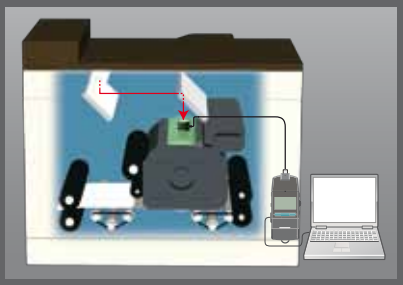
Can be used for general measurements of illuminance.

T-10MA (Cord length: 1 m)

Conforms to JIS AA Class and DIN class B

Enables illuminance measurements of small areas.

Can be used for illuminance measurements in narrow spaces where the standard receptor won't fit. It can also be easily installed on various kinds of equipment or jigs for measuring light levels such as illumination.



T-10W$_S$A (Cord length: 5 m)
T-10W$_L$A (Cord length: 10 m)

Conforms to JIS requirements for special illuminance meters

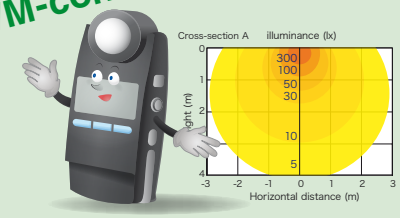
Waterproof | Custom order

The mini receptor and cord are both waterproof, so they can be used for measurements in water.
They can be used for illuminance control for fishery-related applications (such as fish farming, etc.) or for measuring outdoor illuminance on rainy days.

Konica Minolta Sensing's Illuminance Measurement Trio

Konica Minolta Sensing's line of instruments for measuring illuminance includes not only the Illuminance Meter T-10A which can measure PWM-controlled light sources, but also the Chroma Meter CL-200A which can measure color temperature and the Illuminance Spectrophotometer CL-500A which can measure color-rendering properties.

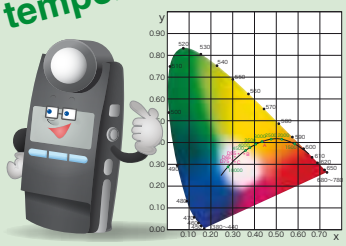
Illuminance meter that can handle PWM-controlled lighting



Illuminance Meter T-10A

Conforms to DIN Class B and JIS AA Class.
Capable of accurately measuring next-generation lamps including PWM-controlled lighting.
Multiple receptors can be used for easy, low-priced, multi-point measurement, and a miniature receptor model is also available for easily measuring illuminance in narrow spaces.

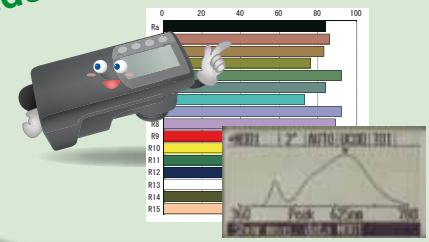
Measures color temperature



Chroma Meter CL-200A

A de facto industry standard for color-temperature measurement.
Can also perform illuminance measurements (JIS AA Class).
Compact and lightweight with removable receptor connectable with extension cables.
Includes simple, convenient PC software as standard accessory.

Measures color-rendering properties



Illuminance Spectrophotometer CL-500A

The first illuminance spectrophotometer to conform to both JIS AA Class and DIN Class B requirements.
Compact, handheld type can easily be installed in inspection equipment and is ideal for evaluating color-rendering properties.
Includes simple, convenient PC software as a standard accessory.

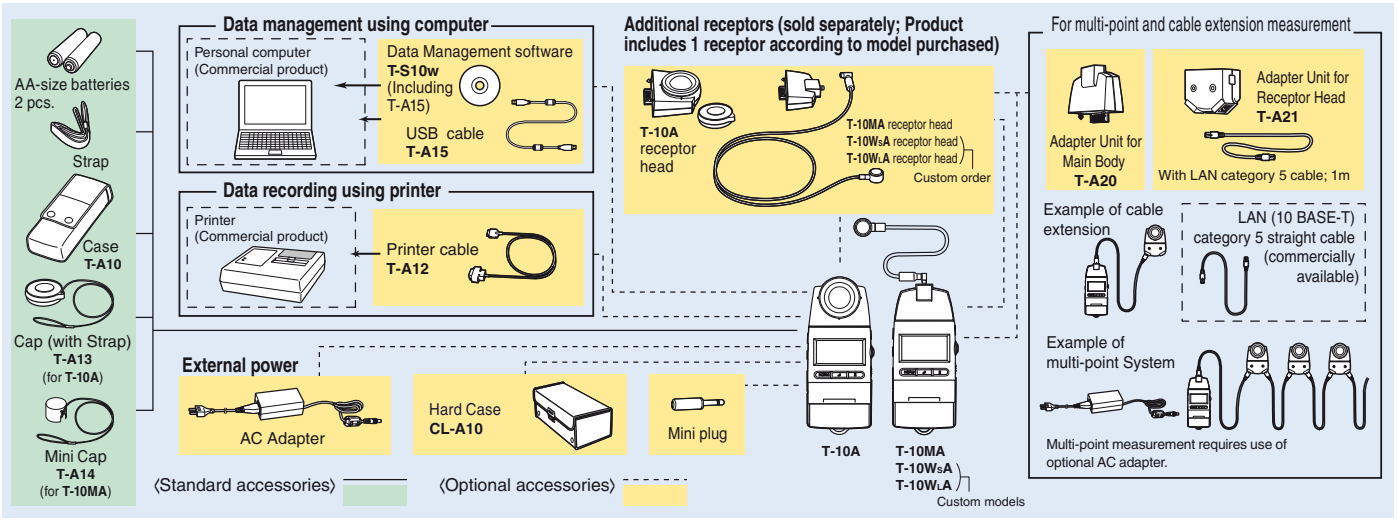
Illuminance-modified Spectroradiometer CS-2000A

Measurements of spectral irradiance are made possible by using the illuminance adapter. This makes it ideal for illuminance evaluation of projectors and LED or EL lighting.
This single instrument can be used for measuring both spectral radiance and spectral irradiance.
Our top-of-the-line CS-2000 is used for measuring various types of high-definition displays, and received the 13th Advanced Display of the Year 2008 Grand Prize in the Display Testing Equipment Category.

Spectral bandwidth: 5 nm or less (half bandwidth)
Measurable illuminance range:
1° measuring angle: 0.01 to 75,000 lx
0.1° measuring angle: 1.00 to 7,500,000 lx

ADY 2008 ADVANCED DISPLAY OF THE YEAR グランプリ ファインテック・ジャパン

System diagram

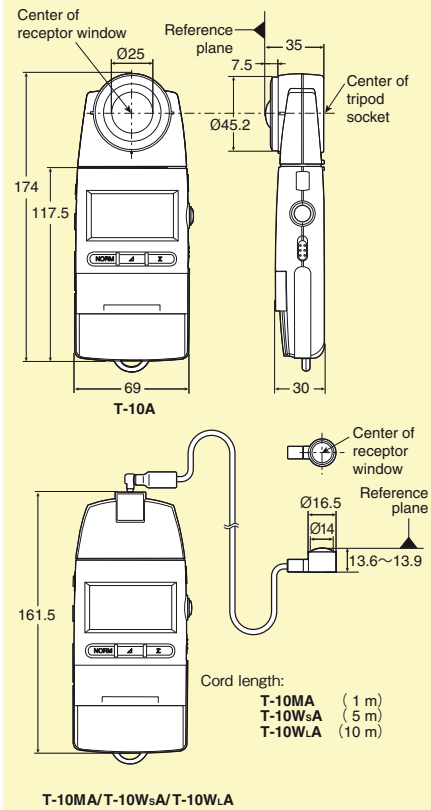


Main Specifications of T-10A

Model		Illuminance Meter T-10A (Standard receptor head)	Illuminance Meter T-10MA (Mini receptor head)	Illuminance Meter T-10WSA (Waterproof mini receptor head)	Illuminance Meter T-10WLA (Waterproof mini receptor head)
Type		Multi-function digital illuminance meter with detachable receptor head (Multi-point measurements of 2 to 30 points is possible)			
Illuminance meter class		Conforms to requirements for Class AA of JIS C 1609-1: 2006 "Illuminance meters Part 1: General measuring instruments" Conforms to DIN 5032 Part 7 Class B		Conforms to requirements for special Illuminance meters of JIS C 1609-1: 2006 *1	
Receptor		Silicon photocell			
Relative spectral response		Within 6% (f_1') of the CIE spectral luminous efficiency V (λ)			
Cosine response (f_2)		Within 3%		Within 10%	
Measuring range		Auto range (5 manual ranges at the time of analog output)			
Measuring function		Illuminance (lx). illuminance difference (lx). illuminance ratio (%). integrated illuminance (lx·h). integration time (h). average illuminance (lx).			
Measuring range	Illuminance	0.01 to 299,900 lx; 0.001 to 29,990 fcd		1.00 to 299,900 lx; 0.1 to 29.990 fcd *2	
	Integrated illuminance	0.01 to 999,900 x 10^3 lx·h 0.001 to 99,990 x 10^3 fcd·h / 0.001 to 9999 h			
User calibration function		CCF (Color Correction Factor) setting function: Measurement value x 0.500 to 2.000			
Linearity		±2% ±1 digit of displayed value			
Temperature/ humidity drift		Within ±3%			
Digital output		USB			
Analog output		1 mV/digit, 3 V at maximum reading; Output impedance: 10 KΩ; 90% response time: 28 ms			
Display		3 or 4 Significant-digit LCD with backlight illumination (Automatic illumination)			
Power source		2 AA-size batteries / AC adapter AC-A308 (optional; for 1 to 10 receptors) or AC adapter AC-A311 (optional; for 1 to 30 receptors)			
Battery life		72 hours or longer (when alkaline batteries are used) in continuous measurement			
Operating temperature /humidity range		-10 to 40°C, relative humidity 85% or less (at 35°C) with no condensation		5 to 40°C, relative humidity of 85% or less (at 35°C) with no condensation	
Storage temperature / humidity range		-20 to 55°C, relative humidity 85% or less (at 35°C) with no condensation		0 to 55°C, relative humidity of 85% or less (at 35°C) with no condensation	
Dimensions		69 x 174 x 35 mm	Main body: 69 x 161.5 x 30 mm Receptor: Ø16.5 x 13.8 mm		
Cord length		–	1 m	5 m	10 m
Weight (without battery)		200 g (7.0 oz.)	205 g	260 g (Receptor head only: 120 g)	340 g (Receptor head only: 200 g)

*1 Conforms to requirements for Class AA of JIS C 1609-1: 2006 for all items except cosine response (f_2).
*2 Although measurements below 1.00 lx are possible, they may not be stable due to the effects of electrical noise.
<Notes regarding mini receptors and waterproof mini receptors>
*Do not touch the cable during measurements. Doing so may result in unstable measurement values.
*Secure the cable during measurements. Failure to do so may result in unstable measurement values.

Dimensions (Units: mm)



SAFETY PRECAUTIONS

For correct use and for your safety, be sure to read the instruction manual before using the instrument.

- Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.
- Be sure to use the specified batteries. Using improper batteries may cause a fire or electric shock.

Certificate No : LRQ 0960094/A
Registration Date : March 3, 1995

Certificate No : JQA-E-80027
Registration Date : March 12, 1997

KONICA MINOLTA SENSING, INC. Osaka, Japan
Konica Minolta Sensing Americas, Inc New Jersey, U.S.A. **Phone :** 888-473-2656 (in USA), 201-236-4300 (outside USA) **Fax :** 201-785-2482
Konica Minolta Sensing Europe B.V.

European Headquarter /BENELUX	Nieuwegein, Netherlands	**Phone :** +31(0)30 248-1193	**Fax :** +31(0)30 248-1280
German Office	München, Germany	**Phone :** +49(0)89 4357 156 0	**Fax :** +49(0)89 4357 156 99
French Office	Roissy CDG, France	**Phone :** +33(0)1 80 11 10 70	**Fax :** +33(0)1 80 11 10 82
UK Office	Warrington, United Kingdom	**Phone :** +44(0)1925 467300	**Fax :** +44(0)1925 711143
Italian Office	Milan, Italy	**Phone :** +39 02 39011.1	**Fax :** +39 02 39011.223
Swiss Office	Dietikon, Switzerland	**Phone :** +41(0)43 322-9800	**Fax :** +41(0)43 322-9809
Nordic Office	Västra Frölunda, Sweden	**Phone :** +46(0)31 7099464	**Fax :** +46(0)31 474945
Polish Office	Wroclaw, Poland	**Phone :** +48(0)71 33050-01	**Fax :** +48(0)71 734 52 10
Konica Minolta (CHINA) Investment Ltd. SE Sales Division	Shanghai, China	**Phone :** +86-(0)21-5489 0202	**Fax :** +86-(0)21-5489 0005
Beijing Branch	Beijing, China	**Phone :** +86-(0)10-8522 1551	**Fax :** +86-(0)10-8522 1241
Guangzhou Branch	Guangdong, China	**Phone :** +86-(0)20-3826 4220	**Fax :** +86-(0)20-3826 4223
Chongqing Office	Chongqing, China	**Phone :** +86-(0)23-6773 4988	**Fax :** +86-(0)23-6773 4799
Qingdao Office	Shandong, China	**Phone :** +86-(0)532-8079 1871	**Fax :** +86-(0)532-8079 1873
Wuhan Office	Hubei, China	**Phone :** +86-(0)27-8544 9942	**Fax :** +86-(0)27-8544 9991
Konica Minolta Sensing Singapore Pte Ltd.	Singapore	**Phone :** +65 6563-5533	**Fax :** +65 6560-9721
KONICA MINOLTA SENSING, INC. Seoul Office	Seoul, Korea	**Phone :** +82(0)2-523-9726	**Fax :** +82(0)2-523-9729

Addresses and telephone/fax numbers are subject to change without notice. For the latest contact information, please refer to the KONICA MINOLTA SENSING Worldwide Offices web page :
http://konicaminolta.com/instruments/about/network