TOPCON

UA-10

Luminance & Chromaticity Uniformity Analyzer

Achieving high speed and high precision measurement of display and back light unit uniformity.

UA-10

High speed measurement as fast as 0.3 sec.

Optimized measurement algorithm enable the UA-10 to measure the uniformity at short time as fast as 0.3 sec., this help you with reduction of tact time in production line.

Small size and small weight

Small size and weight body is easy to incorporate into your production line.

Variety of view function

Focus assist.
Live view + 13 type view.
Multi point extraction (max 999 points), Time-series view.

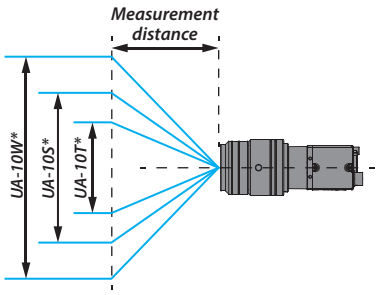
Arbitrary shape of measuring spot

Measuring spot are selectable from polygon, square, and circle.
Various types of Instrument panels and design displays can be measured flexibly.

6 models

You can choose one among 6 models depending on object size and luminance level.

	0.1 to 30,000cd/m²	10 to 1,000,000cd/m²
Standard lens	UA-10SL	UA-10SH
Wide angle lens	UA-10WL	UA-10WH
Telephoto lens	UA-10TL	UA-10TH



High color accuracy

Existing uniformity analyzer required correction factor settings for each color measurement. But Topcon original calibration/correction technology enable the UA-10 to achieve high accuracy of color measurement without complicated correction factor settings for each color.

Accurate measuring for Pulse light

*Even when measuring flashing light, you can obtain stable measured data by setting frequency. [*4]*

*[*4] 50 to 240Hz*

Multi-area Correction

Splitting into 64×64(Max.) area and applying correction factors to each area.

SDK [*5] is standard option

*[*5] Software Development Kit*

UA-10 can be controlled via user host PC.

Diagonal correction

Correcting tilting image.
Once you specify a tilting correction setting in a recipe, measured images in subsequent measuring are corrected automatically.

Multipoint extraction & measurement

Specifying multipoint of bright region
-> Extracting bright points from specified area based on threshold value, and measuring them automatically.

OK/NG judgment function

It can be OK / NG judgment given in the judgment conditions area.

• Usage

- Uniformity measurement for FPD module.
- Uniformity measurement for backlight and front light.
- Uniformity measurement for Illumination (Ceiling light).
- Uniformity measurement for FPD materials such as Diffusion panel and Light guide plate.
- Measuring time series variation light.

• Optional accessories

• Tripod 5N

Simplifies collimation of measurement object.

•Max height : 1835mm •Min height : 585mm
•Folder length : 810mm •Leg sections : 3
•Weight : 4.81Kg (including Tripod stand)

• Fine Adjustment Stand S-4

Simplifies vertical and lateral collimation.

•Elevation angle : 40° •Depression angle : 80°
•Rotation : 360° •Weight : Approx. 1.7Kg

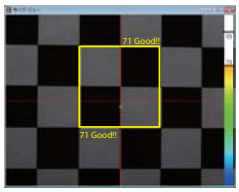
• Standard software provides efficient operation

The standard software can control the UA-10 and can convert measured data by using UA-10 into image data.
The software has various data processing functions and makes the data analysis easier in a very short time.

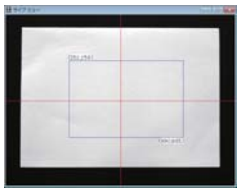
Two type of software are included as standard software.

- ***Standard mode***
  Full function software for UA-10.
- ***View mode***
  This is viewer and analysis software for image data recorded by the Standard edition software.

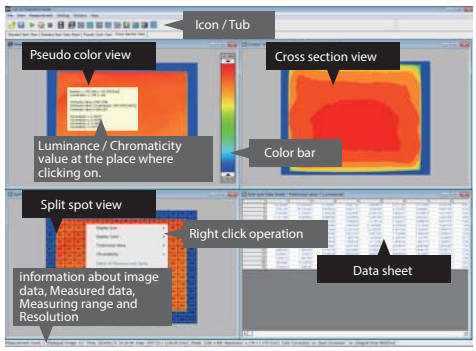
•Live view
The UA-10 can show the Live-view. You can check the measuring area and position on the Live-view. You can select cross target or diagonal marker.



•Focusing assist
The ratio of focusing is displayed. You can refer to the ratio of focusing when focusing on a target.



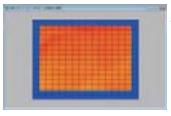
•Optimizing area
Measuring condition is optimized at specified area.



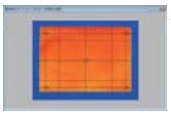
• Various Operations

1.Pseudo color view/Gray scale
Software-colored image and 4,096 steps gray scale present the difference in luminance / chromaticity on measuring area. This view is suitable for uniformity measuring.

2.Contour view
This view use contour lines to indicate the profile of each tristimulus value.

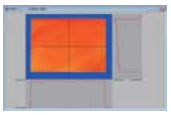


3.Split spot view
The Image dividend with grid pattern shows in this view. Average value in the each divided area is calculated.

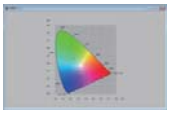


4.Standard spot view
Four type of Measuring standard available such as JEITA standard (EIAJ ED-2522/ ED-2710). You can customize the measuring spot size and the number of measuring spot.

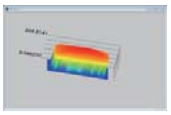
5.Random spot view
At the maximum of 441 spot can be selectable as measuring point.



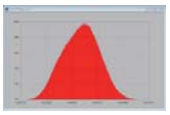
6.Cross section view
Tristimulus value on the cross-section line is expressed as graph. The cross-section line are selectable from cross line or diagonal line.



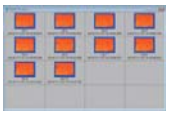
7. x,y /u',v'Chromaticity diagram view
Chromaticity value on the spot can be plotted on the x,y or u',v' diagram.
The plotted diagram can be scaled up.



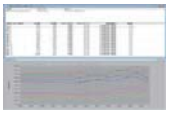
8. 3D view
Tristimulus value on the measuring area is expressed as 3D.



9.Histogram View
The statistical graphics indicates the frequency of occurrence in the vertical axis and the tristimulus value in the horizontal axis.



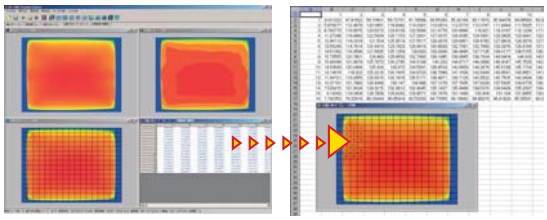
10.Thumbnail view
Image data with the number, measured date show as thumbnails.



11.Time-series graph view
The variation of measured data with lapse of time shows.

12.RGB view
Measurement object is displayed to be close to the actual color.

• Measured data on the each view can be pasted to spreadsheet software.



Measured data on the each view* can be saved as CSV, txt or Image (BMP/JPG/PNG) format.
The data and image can be pasted to spreadsheet software.

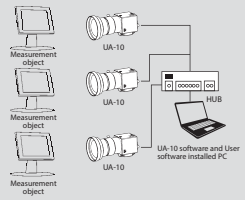
*Live-view/Pseudo color view/Split spot view/Standard spot view/Cross section view.

• SDK allows for creating software to meet your needs

UA-10 SDK (Standard accessories software)*

This software is the development kit to control UA-10 through a PC on the network. This software provides required module for software development and you are able to create network program (socket communication program) using library function in the module. You can develop software for UA-10 without caring about communication protocol.

*Software Development Kit



• Standard Package

- Photo detector (UA-10) ..... 1ea.
- AC adapter ..... 1ea.
- LANcable ..... 1ea.
- CD-ROM
  (Installation program / Instruction Manual) ..... 1ea.
- Carrying case ..... 1ea.
- Tripod stand ..... 1ea.

• Operating Conditions

OS	Windows® 7 Ultimate / Professional (32bit/64bit) Windows® 8.1 Pro or more (32bit/64bit) Windows® 10 Pro or more (32bit/64bit)
CPU	Intel® Core™ i5(Quad Core or higher) 2.8GHz or higher
Memory	4GB or higher
HDD	1GB or higher
LAN Port	Giga Ethernet 1Port
Display	1,024X768 or higher, 1,677million colors (32bit) or higher
Other	CD-ROM drive

*Windows is a registered trademark of Microsoft Corporation. in the US and or other countries.
*Intel is a registered trademark of Intel Corporation.

● Specification

	UA-10SL / WL / TL	UA-10SH / WH / TH
Photo detector	1.3million-pixel Color CCD	
Objective lens	Single focus UA-10SL / SH : F=8.0mm UA-10WL / WH : F=3.5mm	
	UA-10TL / TH : F=3.5mm	
Number of measurement points	1280×960	
Data bit	12bit	
Luminance measurement range	0.1 to 30,000 cd/m²	10 to 1,000,000 cd/m²
Luminance linearity *1*2	±2% (1 cd/m² or more)	±2% (50 cd/m² or more)
(Measurement distance :500mm)	±3% (Less than 1 cd/m²)	±3% (Less than 50 cd/m²)
Chromaticity accuracy *1*2	±0.003 (1 cd/m² or more)	±0.003 (50 cd/m² or more)
(Measurement distance :500mm)	±0.010 (Less than 1 cd/m²)	±0.010 (Less than 50 cd/m²)
In-plane unevenness uniformity *1*3	Luminance : ±2%	
	Chromaticity : ±0.003	
Repeat characteristic	Luminance : 0.5% (2σ)	
	Chromaticity : 0.002 (0.5 cd/m² or more) *4	Chromaticity : 0.002 (50 cd/m² or more) *4
	Chromaticity : 0.005 (Less than 0.5 cd/m²) *4	Chromaticity : 0.005 (Less than 50 cd/m²) *4
Measurement Time	UA-10SL / WL : Fastest about 0.3sec (100 cd/m²)	
	UA-10SH / WH : Fastest about 0.3sec (10,000 cd/m²)	
Stability *1*2	Luminance : 1%	
Repeatability *1*2	Luminance : 2%	
Temperature characteristic	Luminance : ±3% At 0 to 40ºC (reference : 25ºC)	
Humidity characteristic	Luminance : ±3% (Humidity : 85%RH and below , No condensation)	
Interface	LAN (Gigabit Ethernet)	
Power supply	100 to 240 V (AC 50/60Hz)	
Power Consumption	Photo detector 100V 38VA	
Operating	Temperature : 0 to 40ºC, Humidity : 85%RH and below (No condensation)	
conditions	Temperature : -5 to 50ºC, Humidity : 85%RH and below (No condensation)	
Storage condition	UA-10SL : 90.0(L)x34.0(W)x34.0(H)mm	
Outer dimensions	UA-10SH : 90.0(L)x38.5(W)x38.5(H)mm	
	UA-10WL / WH : 86.5(L)x42.0(W)x42.0(H)mm	
	UA-10TL / TH : 85.1(L)x34.0(W)x34.4(H)mm	
Weight	UA-10SL : about 185g, UA-10SH : about 200g	
	UA-10WL/WH : about 170g, UA-10TL / TH : about 155g	

*1: standard illuminant A, *2: evaluated on the center of the CCD, *3: Reference: Center of the CCD,
*4: (Max – Min value)

UA-10SL / UA-10SH Area

Measurement distance (mm)	-	200	500	1,000	1,500	2,000	2,500
inch	-	5.5	13.3	26.6	39.9	53.1	66.4
Horizontal (mm)	-	110.8	270.0	540.0	810.0	1,080.0	1,350.0
Vertical (mm)	-	83.1	202.5	405.0	607.5	810.0	1,012.5

UA-10WL / UA-10WH Area

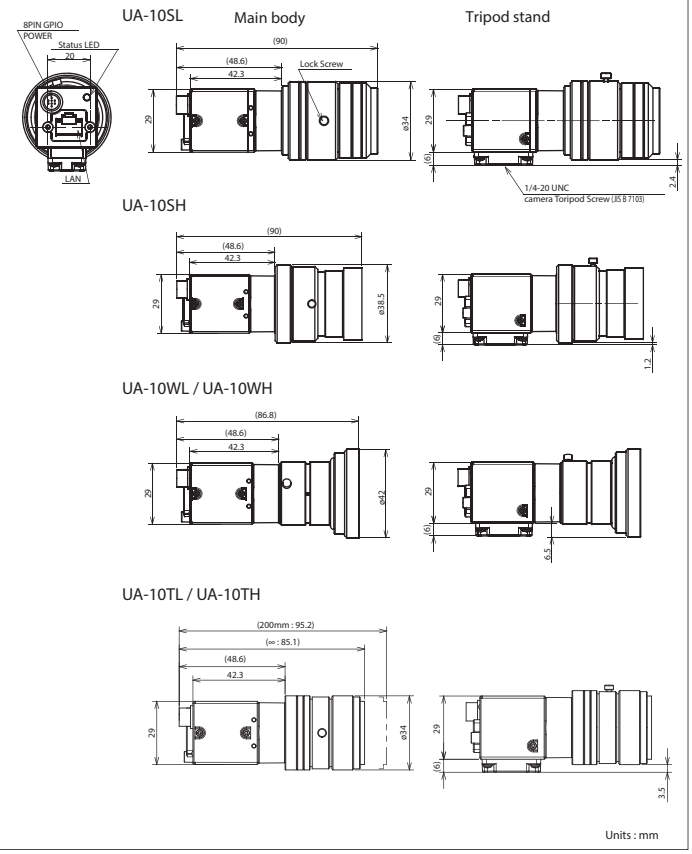
Measurement distance (mm)	100	200	500	1,000	1,500	2,000	2,500
inch	6.7	13.4	33.4	66.8	100.2	133.5	166.9
Horizontal (mm)	135.7	271.4	678.4	1,356.8	2,035.2	2,713.6	3,392.0
Vertical (mm)	101.8	203.5	508.8	1,017.6	1526.4	2,035.2	2,544.0

UA-10TL / UA-10TH Area

Measurement distance (mm)	-	200	500	1,000	1,500	2,000	2,500
inch	-	1.2	2.9	5.8	8.7	11.6	14.4
Horizontal (mm)	-	23.5	58.7	117.4	176.1	234.8	293.5
Vertical (mm)	-	17.6	44.0	88.0	132.1	176.1	220.1

*: Measurement distance is from metal tip of attachment lens.

● Dimensions



ISO 14001 EC97J1081 — UKAS ENVIRONMENTAL MANAGEMENT 051

JCSS 0073 — TOPCON TECHNOHOUSE has been certified as a provider of optical solutions, according to the Japanese Measurement Law.

We will issue a calibration certificate bearing the JCSS logo, which guarantees the accuracy of illuminance (illuminance meter), and luminosity (lamp) based on national standards.

*Some screens are simulated.
*The specifications and external appearances of product in this catalogue may be changed without prior notice due to improvements.
*The catalogue includes products that are sold separately.
*The actual color of products may differ slightly from the catalogue due to lighting and printing conditions.

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SAFETY PRECAUTIONS

Make sure to carefully read the "Manual" to ensure that you use the product properly and safely.
• Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.

For more information please visit our website.
https://www.topcon-techno.co.jp/en/

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