

RD-805A

Possible to measure the response speed of motion image which is the deciding factor for improvement of high image quality of LCD displays.

The response speed of the LCD displays means the time when color on the screen continuously changes from black to white and to black, and "ms" is used as a unit.

When the response speed is low, the residual image remains in the motion of the moving image, but if the response speed is high, even if the moving image has fast motion, it seems clearly and sharp image.

Nowadays LCD displays equipped with "overdrive" have been increasing in order to speed up the response speed of half tone(gray to gray), and the evaluation for half tone is also increasing.

It is possible to evaluate the LCD displays using RD-805A that response speed is 80 μ s and an oscilloscope, and it is also possible to check the overshoot and undershoot occurring at the response speed of half tone.

Also, It is possible to evaluate the response speed by luminance that is the brightness seen by human eyes.

Possible to detect the response of the light output flicker of LED lamp.

It is possible to evaluate light output flicker of LED lighting defined JIS standard and PSE method.

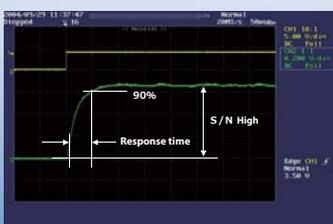
It is possible to judge compatibility by measuring the time response of the light output using an oscilloscope.



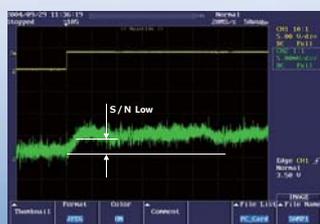
Features

- Measurement is possible while collating the measurement position of the LCD panel (TV, monitor, mobile) with a spot.
- Not only response (response speed) measurement, but also luminance and chromaticity measurement is possible.
- Measuring time is approx.1 sec for luminance measurement.
- It is possible to detect a small S / N response like luminance difference is 0.04cd/m².
- Flicker evaluation of LED lighting defined JIS standard and PSE method is also possible.

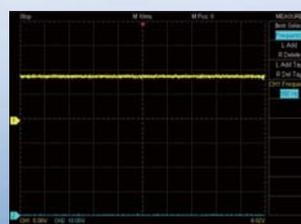
Evaluation example



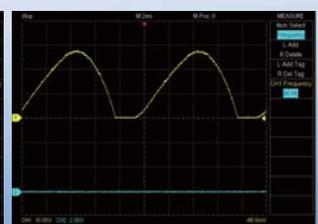
Response speed of white and black of LCD



Response speed of half tone of LCD



Flicker of LED lamp is OK



Flicker of LED lamp is NG

Luminance Colorimeter RD-805A

■ Specification

Optics	Objective lens : f=80mm, F2.5 / Viewfinder field of view : 5°								
Photo detector	Photomultiplier Tube								
Measurement angle	2° Only								
Measurement distance	350mm - ∞ (from the tip of the metal fixture on the instrument of the objective lens)								
Measurement diameter ¹⁾	Measurement distance (m)	0.35	0.5	1	5	10			
	Diameter (mma)	10	15.4	32.8	169	341			
Function	x,y,L (x,y : Chromaticity, L : Luminance), u',v' (u',v' : Chromaticity, L : Luminance) X,Y,Z (X,Y,Z : Tristimulus values), T _c ,duv,L (T _c : Color Temperature, duv : Deviation, L : Luminance)								
Measurement time	About 1 second (SINGLE measurement, Y filter only, Range 4, Except auto calibration)								
Analogue output response time	80μs or less ²⁾								
Measurable range	About 0.1 - 10,000cd/m ² (for standard illuminant A)								
	Range	1	2	3	4	5	6	7	8
	Luminance	0.1 - 5	0.5 - 15	1.5 - 40	3.5 - 120	15 - 600	35 - 1,600	220 - 2,900	750 - 10,000
Accuracy ³⁾	o Luminance : ±3% (2cd/m ² or below) ±2% (2cd/m ² or above)								
	o Chromaticity 1 : dx,dy : ±0.0040 (2cd/m ² or below) dx,dy : ±0.0025 (2cd/m ² or above)								
	o Chromaticity 2 : dx,dy : ±0.01 (O-55,Y-48,A-73B,IRA-05,T-44) dx,dy : ±0.03 (R-61,B-46,V-44,G-54)								
	* For a combination of the standard source A and the colored glass.								
Repeatability ⁴⁾	o Luminance : Within 2% (2cd/m ² or below) Within 1% (2cd/m ² or above)								
	o Chromaticity : x,y : Within 0.003 (0.5 - 2cd/m ²) x,y : Within 0.002 (2cd/m ² or above)								
Analogue output voltage	About 0 - 3.4V								
Measurement range	8 steps (Auto range or Manual range)								
Adjustment volume	Over range, Under range adjustment function : Adjustable over / under range level								
	Over range	About 2 - 3.4V (Default 3.3V)							
	Under range	About 0 - 1.2V (Default 0.03V)							
	Sensitivity of photo detector adjustment function : Adjusts the sensitivity of photo detector								
	Valid range	About 0 - 1.0V							
	Recommend	About 0.3 - 0.5V ⁵⁾							
	Default	Default applied voltage is as follow 1.00±0.005V at 200 cd/m ² for standard illuminant A							
	Analogue output offset adjustment function : Adjusts analogue output offset								
Valid range	About ±1V								
Default	0.05V (in measurement of Dark)								
Calibration standard	Topcon Technohouse Calibration standard (Standard illuminant A, 23± 3°C)								
Display	Dot-matrix LCD 20characters x 4lines with backlight								
Interface	LAN / RS-232C								
Power supply	Dedicated AC Adapter DC12V AC100V - 240V 50 / 60Hz								
Power consumption	About 34W								
Operation condition	Temperature : 0 - 35°C, Humidity : 60%R.H. or less								
Storage condition	Temperature : -10 - 50°C, Humidity : 80%R.H. or less								
External Dimension	About 319 (L) x 130 (W) x 201 (H)mm								
Weight	About 4.3kg (Main body only)								

¹⁾ The measurement distance is the distance from the tip of the metal fixture on the instrument of the objective lens.
²⁾ The response speed is the time required for the analog output of the instrument to reach 90% of the peak value when measuring an LED driven by a square wave from a function generator.
³⁾ The RD-805A is adjusted to provide 1,000mV at measurement range 5 for 200cd/m² of standard illuminant A.
⁴⁾ The upper limit of each measurement range is 3.4V.
⁵⁾ Above figure is design reference value, may change slightly according to the machining precision of the aperture mirror.
⁶⁾ Standard illuminant A, Auto range.
⁷⁾ Standard illuminant A, Auto range, SINGLE mode, 2nd.
⁸⁾ High sensitivity cause noise level increase, so we recommend to use within recommend level.



* 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/>



Usage

- Detection of response time and measurement of luminance and chromaticity of FPD such as TV, PC, and mobile phone.
- Detection of crosstalk on Sequential 3D display, and measurement of luminance, chromaticity, and color temperature.

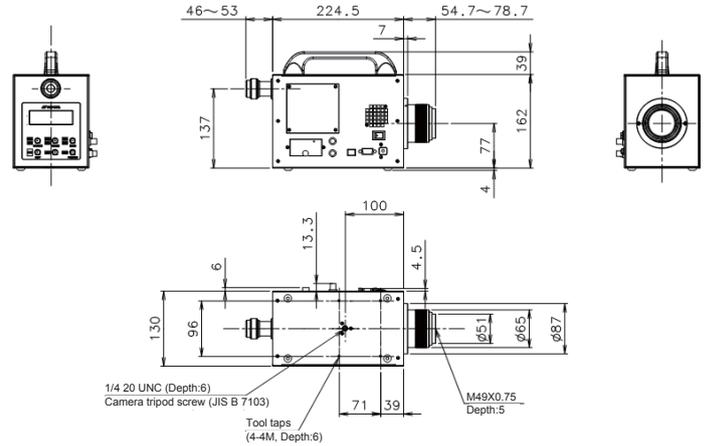


Large-sized TV



Mobile

Dimensions



Optional accessories

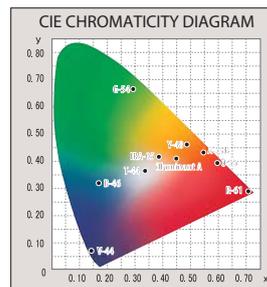


- MF-10 / MF-100 Mesh Filter

Mesh type filter for measuring objects with brightness exceeding measurement range of RD-805A.

custom-made item

- 20μs Response Measurement for RD-805A.



RD-805A Standard package

- o RD-805A (main body).....1 pcs
- o AC adapter.....1 pcs
- o Objective lens cap.....1 pcs
- o CD-ROM (instruction manual).....1 pcs
- o BNC cable.....1 pcs

* Carrying case is separate.