

LCRT-2005-SIS

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Product tags: VIS



Description

LCRT-2005-S stationary light transmission measurement device with fast data logger

Light transmission

Light transmission is the visually sensed light permeability of materials. It is particularly important when it comes to specification of window panes on all types of vehicles, display sheets and disks as well as all the other samples whose transmission is assessed with the photometric responsivity ($V(\lambda)$) of the human eye.

LCRT-2005-SIS light transmission measurement device

The LCRT-2005-SIS is elaborately designed for light transmission in stationary applications. The light source is built with a compact integrating sphere that enables diffuse sample illumination (D/0) in small distances and directed (0/0) sample illumination at large distances. The receiver has a 0.38° measurement field angle and a 6.6mm optical gauge. The monitor detector of the light source and that of the receiver are equipped with a diode array. Their spectral measurement data enables precise simulation of the standard illuminants A, D65 and C and the photometric responsivity of the receiver.

Fast data logger

The detector of the light source and the detector of the receiver are equipped with diode arrays and with photometric matched silicon photodiodes. The fast photodiodes enable high-speed recording of measurement values e.g. as required to measure the response time of electrochromic glasses.

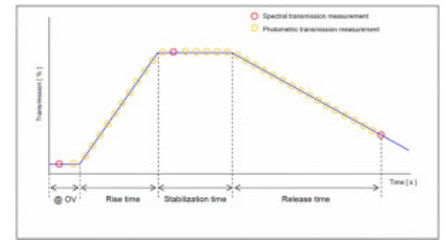
LCRT-2005-SIS spectrophotometer

The LCRT-2005-S can also be used as a spectrophotometer due to its spectral measurement detectors in source and receiver. The spectral range is between 425 nm and 705 nm.

Remote control interface

The controller of the LCRT-2005-SIS has a USB, LAN and RS232 interface for remote control.

Traceable measurements



Recording of the response time of electrochromic glasses with the datalogger measurement function of the LCRT-2005-SIS. Additional spectral transmission measurement on defined support points

Two transmission standards, one with 70 % and the other with 80 % light transmittance are offered for device 100 % reference matching in applications where traceable measurement values are required.

Specifications

General

Short description	Stationare measuring instrument for light transmission.
Main features	Spectral measuring method. Build in photometric detector for fast data sampling. Compact source and receiver. Build in camera for receiver to source alignment support. SC-05 Controller. Puls modulated LED lamp for measurements in ambient light conditions.
Measurement range	Spectral range: 425 nm to 705 nm Spectral resolution: 5 nm Transmission range: 5 % to 100 % Measurement beam diameter: 6.6 mm Illumination: A, C, D65 Detection: Spectral Photometric, Spectral Radiometric, Photometric photodiode.
typical applications	Measurement of the light transmission all kinds of windows. Measurement of the time depending on/off characteristic of smart glass.
Calibration	Realative measurement methode with 100 % reference adjustment. Optional calibration with 70 % or 80 % calibration standards.

Product

Measurement geometry	D/0 geometry measurement of the luminance ratio with a diffuse light source as per CIE 130 & DIN 5036
Beam diameter	6.6 mm at contact measurement
Light Source	Integrating sphere light source with a 20mm illumination field. LED lamps and diode array monitor detector. Simulation of the standard illuminants type A, D65 and D50.
Sensor	Diode array detector with radiant lens and $V(\lambda)$ silicon photodiode. Depolarizer for measurement of polarized samples; simulation of the photometric responsivity with the spectral measurement data. Digital camera for aid in freehand setup of source and receiver.
spectral range	425 nm to 705 nm
Measurement range	5 % to 100 % transmission for a color-neutral transmission spectrum
typical Measurement uncertainty	± 1 % absolute
Data Resolution	0.1 %
Calibration	Relative measurements after performing 100% match against air. Traceable measurements after matching with calibrated standard filters.

Source

Light Source	Integrating sphere with synthetic ODM98 coating. 20 mm illumination field diameter with homogenous luminance distribution (lambertian radiator). illumination field with a protective shield.
Light Source	White LEDs in pulse mode, usable wavelength range: 425 nm to 705 nm
Monitor detector	256 pixel diode array spectrometer and $V(\lambda)$ silicon photodiode

Connection cable	Length 1.5 m Mini DIN plug RS232 and voltage supply
Housing	Aluminium profile with plastic caps threaded bores for mounting
Dimensions	160 mm x 45 (60) mm x 85 mm
Weight	450 g
Receiver	
Sensor	256 pixel diode array spectrometer and $V(\lambda)$ silicon photodiode and achromatically corrected lens. Depolarizer for measurement of polarized samples.
Measurement beam geometry	Measurement field angle 0.38 ° Sample alignment 0 ° illumination field diameter by contact measurement 6.6 mm, in 1 m measurement distance 12.6 mm
Connection cable	Length 1.5 m Mini DIN plug RS232 and voltage supply
Dimensions	160 mm x 45 (60) mm x 85 mm
Weight	400 g
Controller	
Design	Similar to the SC-05 system controller with LCRT-2005-SIS firmware
Source and receiver connector	9PIN SUBD plug
Interface	USB, RS232 and LAN
Power Supply	Connection: 7,5-25VDC USB: 5V (450mA)
Dimensions	105 mm x 128 mm x 126 mm
Weight	500 g
Miscellaneous	
temperature range	10 °C to 40 °C
Humidity	Above the saturation temperature (<85 % on the measurement device)

Purchasing information

Article-Nr	Modell	Description
Product		
101426-3	LCRT-2005-SIS	Measurement device, 100% matching aid, handbook
Accessories		

Article-Nr	Modell	Description
15297874	LCRT-2005-S-BN-T70	Spectral calibration standard with 70% light transmission; calibration certificate
15297875	LCRT-2005-S-BN-T80	Spectral calibration standard with 80% light transmission; calibration certificate