Dynamic Test Stand preliminary data sheet

Overview

Product name	DTS (Dynamic Test Stand)
Principle	Versatile, dynamic test stand with: • High-intensity illuminator with transparent test charts based on LG3 technology • Generate flickering light with variable frequency • Integrated CAL2 multispectral light sources based on iQ-LED technology

Features

Hardware

Specialties	• Sequence-based measurement • Automated measurement • High Intensity • Flicker Mode • Variable PWM Frequency
FoV	25° – 160°*
Distortion compensation	Mechanical barrel distortion compensation

White Illumination

Output window	7 x rectangular output window, 70 x 70 mm 2 x rectangular output window, 60 x 60 mm
Contrast measurement charts	Active area, 60 x 60 mm Patch size 10 x 10 mm 36 steps
Light source	LED
Color temperature	approx. 5000 K +/- 5%
Uniformity	> 95%

Illumination stability	Active illumination stabilization Relative illumination stability > 98%
Illumination feedback inaccuracy	+/- 2%**
Luminance range	0.06 – 60000 cd/m² (preliminary)
Max luminance power cycle	50% duty cycle (depends on ambient temperature) 60 s length (max)
Dim function	32 kHz PWM
Flicker frequency	10 - 500 Hz 0.1 Hz steps (10-200 Hz) 0.2 Hz steps (200-500 Hz)
Flicker duty cycle	1 - 99% in 1% steps
Phase shift	Phase shift 360° in up to 360 steps ****
Service life	10,000 h (LEDs) Can be replaced by Image Engineering

Spectrometer

Construction	Swivel-type calibration device with a spectrometer to change between the measurement position (400 mm distance) and the inoperative state Built-in spectrometer
Spectral range	350 – 800 nm
Pixel resolution	2048 pixel
FWHM	6 nm
Output data	Real-time measurement of spectral trend and radiant power via control software***
Calibration	Yearly calibration required independent of working hours (contact Image Engineering), NIST traceable

CAL2 (refer also to CAL2 data sheet)

Light Source	Image Engineering iQ-LED technology: Overall, 80 LEDs, two white channels, and 20 color channels
Spectral range	400 – 820 nm
Control	32 kHz / 1000 Steps
Service Life	10000 h

Rotation Disc

Concept	Rotating, translucent, slanted edge test chart
Rotation Speed	1 – 720 deg/s
Edge Contrast	Approx.: 100,000:1

Software

System requirements	PC with Windows 7 operating system (or higher) USB port

Functions	• Test Sequence generation • Test Sequence management • Measurement Data evaluation
Metrics	• Contrast Detection Probability • Modulated Light Mitigation Probability • Color Separation Probability • Motion Artefacts (Smear)
Output data	Numeric and graphic results (.xml, pdf****)
API (C++)	Optional available iQ-LED API Optional available LG API

General description hardware

Power supply/consumption	110 V / 230 V, 300 W
Ports	1 x USB for data transfer and firmware updates
Dimension [W x H x D]	1010 x 860 x 760 mm
Weight	Approx. 65 kg
Operating conditions	Optimal: 22 - 26 °C, maximum: 18 - 28 °C
Warm-up time	< 2 min. at optimal ambient temperature
Scope of delivery	• Dynamic Test Stand • PC with preinstalled software (Windows 10 Home) • Touch display • Calibration plate (plastic) • Sequence Generator software • DTS Control software • DTS Evaluation software • Printed user manual • Seven magnetic light source covers • Six stray light hoods for the light sources

Requirements of the device under test (DUT)

Max. dimensions	350 x 350 x 100 mm (depending on the position of the sensor on the board)
FoV	25° - 160°*
Max. weight	1.5 kg

Miscellaneous

Accessories	• DTS Cart • DTS Imager Housing 2 m • iQ-Defocus, C++ API • iQ-Mobilemount • Custom adapter plates for DUTs • Custom stray light hood set • iQ-Defocus

* Maximal FoV depends on the distortion

** Absolute inaccuracy is dependent on the inaccuracy of the used calibration device
*** Logging of measurement data into a log file
**** Planned feature in the future