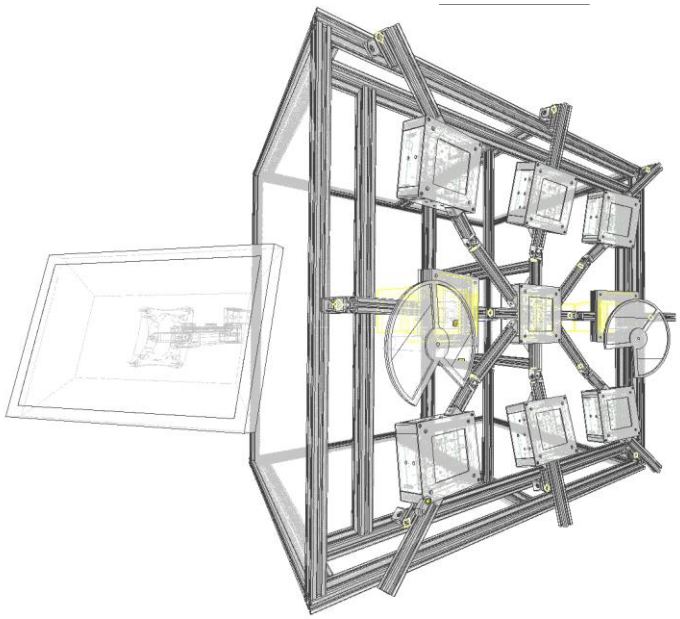
# Dynamic Test Stand preliminary data sheet



## Overview

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

## Features

### Hardware

| | |
|---|---|
| Specialties | • Sequence based measurement<br>• Automated measurement<br>• High Intensity<br>• Flicker Mode<br>• Variable PWM Frequency |
| FOV | 25° – 160°* |
| Distortion Compensation | Mechanical barrel distortion compensation |

### White Illumination

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|---|---|
| Output window | 7 x rectangular output window, 70 x 70 mm<br>2 x rectangular output window, 60 x 60 mm |
| Contrast Measurement Charts | Active area, 60 x 60 mm<br>Patch size 10 x 10 mm<br>36 steps |
| Light source | LED |
| Color Temperature | approx. 5000K +/-5% |
| Uniformity | > 95 % |
| Illumination stability | Active illumination stabilization |

| | |
|---|---|
| | Relative illumination stability > 98 % |
| Illumination feedback inaccuracy | +/- 2 %** |
| Luminance range | 0.06 – 60000 cd/m² (preliminary) |
| Dim function | 32 kHz PWM |
| Flicker Frequency | 10-500 Hz<br>0.1 Hz steps (10-200 Hz)<br>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)<br>Can be replaced by Image Engineering |

## Spectrometer

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|---|---|
| Construction | Swivel-type calibration device with spectrometer to change between measure position (400 mm distance) and inoperative state<br>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:<br>Overall 80 LEDs, 2 white channels and 20 color channels |
| Spectral range | 400 – 820 nm |
| Control | 32 kHz / 1000 Steps |
| Service Life | 10000 h |

## Rotation Disc

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

## Software

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| System requirements | PC with Windows 7 operating system (or higher)<br>USB port |
| Functions | • Test Sequence generation<br>• Test Sequence management<br>• Measurement Data evaluation |

| | |
|---|---|
| Metrics | • Contrast Detection Probability<br>• Modulated Light Mitigation Probability<br>• Color Separation Probability<br>• Motion Artefacts (Smear) |
| Output data | Numeric and graphic results (xml, pdf****) |
| API (C++) | Optional available iQ-LED API<br>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 degrees Celsius, maximum: 18 - 28 degrees Celsius |
| Warm up time | < 2 min. at optimal ambient temperature |
| Scope of delivery | • Dynamic Test Stand<br>• PC with preinstalled software<br>• Touch Display<br>• Calibration Plate (Plastic)<br>• Sequence Generator Software<br>• DTS Control Software<br>• DTS Evaluation Software<br>• Printed User Manual<br>• 7 Magnetic lightsource covers<br>• 6 straylight hoods for the lightsources |

## Requirements on device under test (DUT)

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|---|---|
| Max. dimensions | 350 x 350 x 100 mm (depending on position of the sensor on the board) |
| FOV | 25° - 160°* |
| Max. weight | 1,5 kg |

## Miscellaneous

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|---|---|
| Accessories | • DTS Cart<br>• DTS Imager Housing 2 m<br>• iQ-Defocus, C++ API<br>• iQ-Mobilemount<br>• custom adapter plates for DUTs<br>• custom stray light hood set<br>• 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 future feature