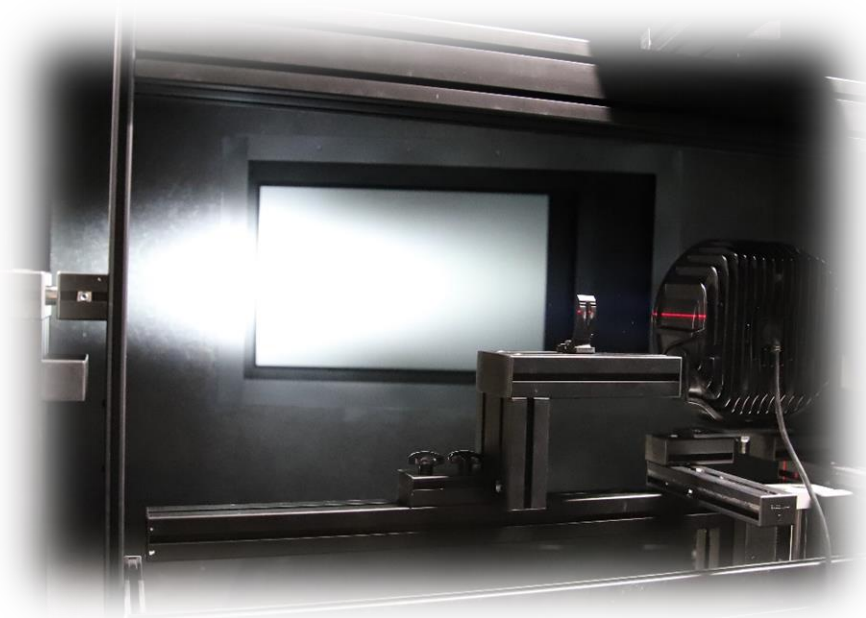


BTC Screen Imaging Goniophotometer



Super Fast Photometric Test System for Verifying Industry Standard Compliance of Automotive Lights

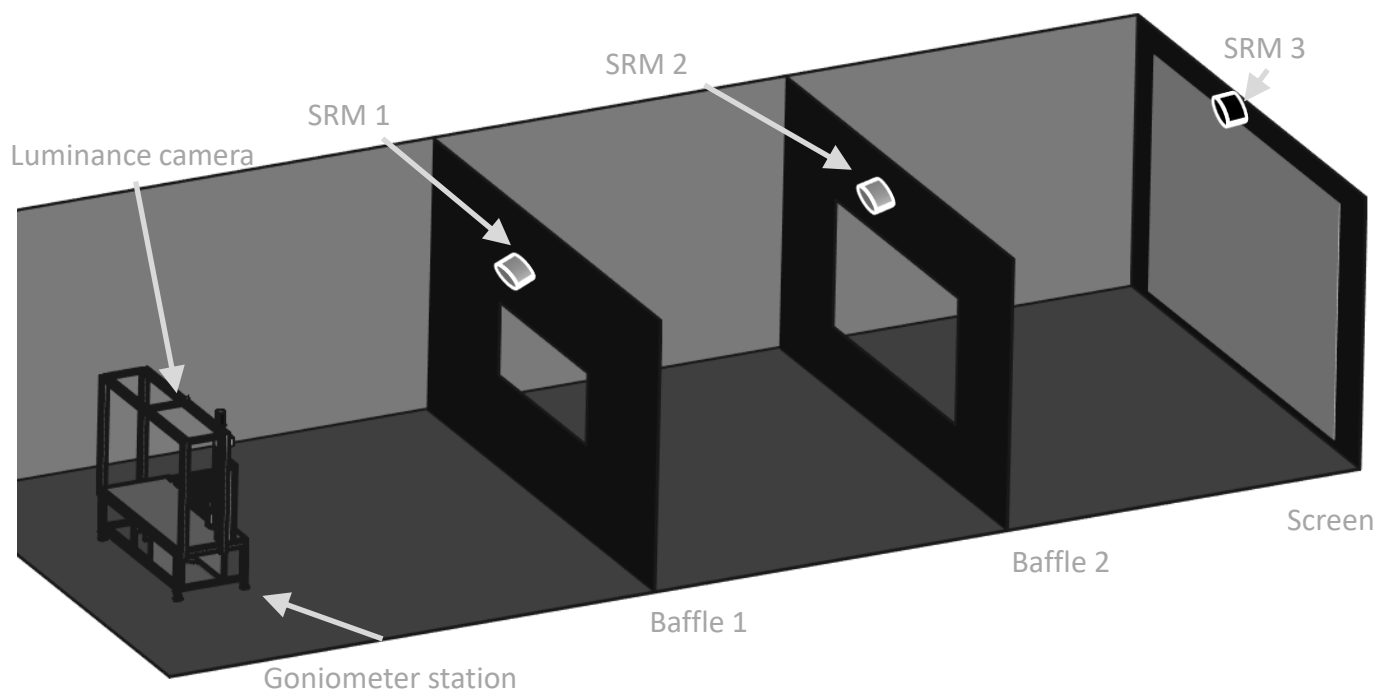


Fig. Laboratory setup of BTC 2000. SRM 1, 2, 3 denotes possible positions of far-field photometer/tristimulus colorimeter and irradiance spectroradiometer.

Application

Property	SSL BTC 20	SSL Goniophotometer	SSL BTC 2000
Screen + camera	✓		✓
Goniometer		✓	✓
Duration of measurement	Seconds	Tens of minutes to hours e.g. (step 0.1°): 37 min (H±50°,V±15°) 8 h (H±90°,V±90°)	Seconds to tens of minutes ^[1] 4 min (H±50°,V±15°) 29 min (H±90°,V±90°)
Easiness of operation	Minimal user input	More operational parameters	More operational parameters
Accuracy of result ^[2]	Reasonable	Accurate	Accurate
Max Measurement angle	Hor ±35° / Ver ±24° ^[3]	Full 2π/4π angular space available ^[4]	Full 2π/4π angular space available ^[4]
Suitability	Narrow beams Production line tests	All types of luminaires Laboratory tests	All types of luminaires Laboratory tests
Min measurable Iv	0.3 cd	0.001 cd ^[5]	0.3 cd

[1] Depends on the light level and angular test range.

[2] The uncertainty for BTC 20 is <10 %, the uncertainty of a typical goniometer is <5%.

[3] Subject of geometry, given values on 4.0 x 2.5 m² screen with distance of 2.8 m.

[4] Depends on the goniometer type (A or B).

[5] Subject of measurement distance.

BTC features

- ✓ **PASS / FAIL Test against standards such as ICAO, CAP437, ECE, FVMSS108, FAA..**
- ✓ **Test Candela Specification editor**
- ✓ **Analysis tool for Road surface illumination and at transversal plane**

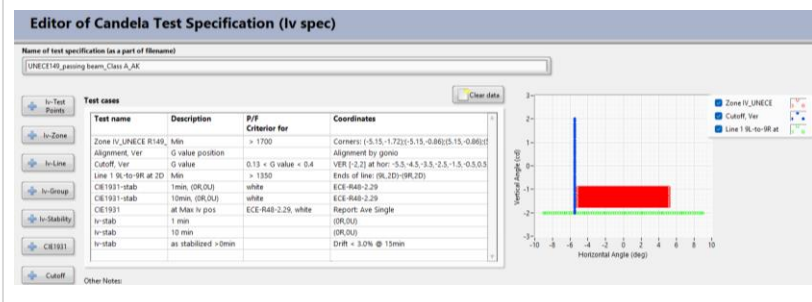


Fig. AUTO 50.A goniometer with BTC 2000 accessories. Max DUT size 0.6 m (length), 0.25 m (height), 5kg.

SPECIFICATION

Property	SSL BTC 2000_AUTO xxx
Application area	Automotive lighting fixtures, Maritime Lights, Airport lights, Head-lights, signal lights, production tester
Goniometer station	Any SSL AUTO series Goniometer station of type A or B
Sample holder system	Manual 2-axis linear translator for X/Y. Motorized Z axis (vertical).
Photometer	Imaging Luminance Camera 2.3Mpix, f-25mm lens equipped with photopic filter with the spectral match of $f1' < 3\%$ to CIE 1924 $V(\lambda)$ curve
Electrical device integration	19" rack for (optional) AC/DC power supply/meter
Alignment laser	2pcs of red cross-line laser (1mW, 635 nm)
Height of optical axis	Approximately 1.4 m
White screen	Matt painted white surface. Size depends on room size and test distance, e.g. 4.0 x 2.5 m ²
Measurement distance	e.g. 10 m
Measurement range	0.3 cd – 70 000 000 cd
Accuracy	$\pm 4\%$ (lv)
Reproducibility	0.3 % (lv)

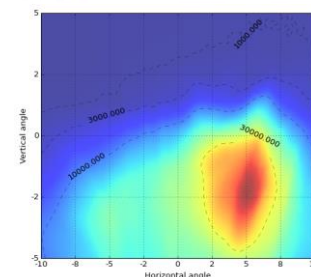
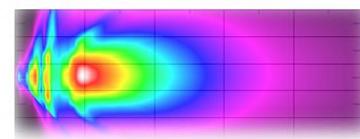
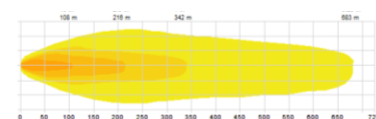
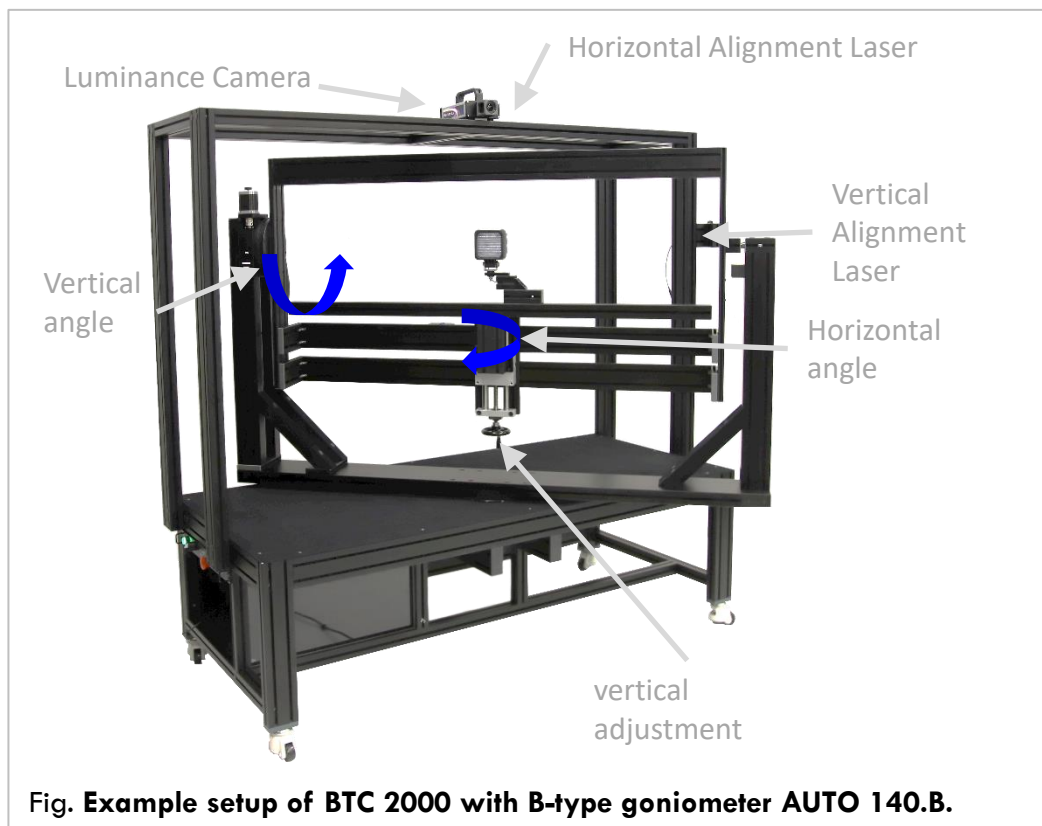


Fig. Example images of BTC sw. Isolux and 2D candela map.

BTC 2000 – Ordering Information

Beam Tester Camera Setup

SSL BTC 2000_AUTO xxx	AUTO xxx goniometer station, integrated 19" device rack for power supply equipment etc.), alignment lasers x 2pcs, luminance camera, computer, display & display holder. Measurement software: BTC sw with lv-spec sw add-on.
BTC 2000.B add-on	<i>Base add-on for BTC Goniometer testing laboratory:</i> - Luminance camera CAM2.3.Lv-f3-25 for screen measurement. - Measurement software: BTC sw with lv-spec sw add-on for AUTO goniometer. - Design and Consultancy Service for supporting customer on preparing the BTC goniometer laboratory: guidance for white screen material / dimensions, other walls, floor, roof. Guidance for preparation of baffle walls and aperture sizes / locations.
BTC 2000.TK add-on	<i>Turn-key system for BTC Goniometer testing laboratory:</i> - Luminance camera CAM2.3.Lv-f3-25 for screen measurement. - Measurement software: BTC sw with lv-spec sw add-on for AUTO goniometer. - Design and Construction Service for preparing the BTC goniometer laboratory by SSL Resource at the customer site - Calibration and Training of the setup

Options

SSL LC-800.1 & LH1010-f3	Far-field photometer system for scanning luminous intensity measurement. Alternative photopic measuring heads available for different illuminance ranges.
SSL LC-800.4 & CH66-4	Far-field tristimulus colorimeter for measuring luminous intensity and CIE1931 color coordinates. Includes 4-channel measuring head with $f_1' < 3\%$ for X,Y and $< 3.5\%$ for Z. Alternative colorimetric measuring heads available for other illuminance ranges.
S-680.VRW_5_D0.5	Additional spectral irradiance meter S-680 with integration to measurement program. Measurement of angular and total color/spectral parameters.
S-680.VRW_5_L1	Additional spectral radiance meter S-680 with integration to measurement program. Measurement of total color/spectral parameters in the screen
SSL S-80.Lv_L2	Additional spectral radiance meter Spektri 80 with integration to measurement program. Measurement of total color/spectral parameters in the screen