

MEASUREMENT SOLUTIONS IN AUTOMOTIVE APPLICATIONS

1) Front Light Testing and 2) Rear Light Testing

According to ECE, IEC and CIE Standards as well as given industry standards and guidelines.

- High-end spectroradiometer with stray light correction: **BTS2048 Series**
- Spectroradiometers, goniometer compatible: **CCS-45, BTS256-EF, BTS2048 Series, Software**

Color shift of light guides

- Spectral transmission & luminous flux test system: **TFCT25**

LED chip manufacturing

- Ultra high speed testing in LED binning. Luminous flux, averaged LED intensity and spectral power distribution measurement: **ISD-15-BTS2048-VL**



Temporal Light Artifacts

- Flicker and phantom array effect on external lights: **BTS256-EF**



3) Windscreen Testing

Transmittance measurement of windscreens in production or in-situ.

- Spectral transmission, mobile and robust: **LCRT-2005-S**

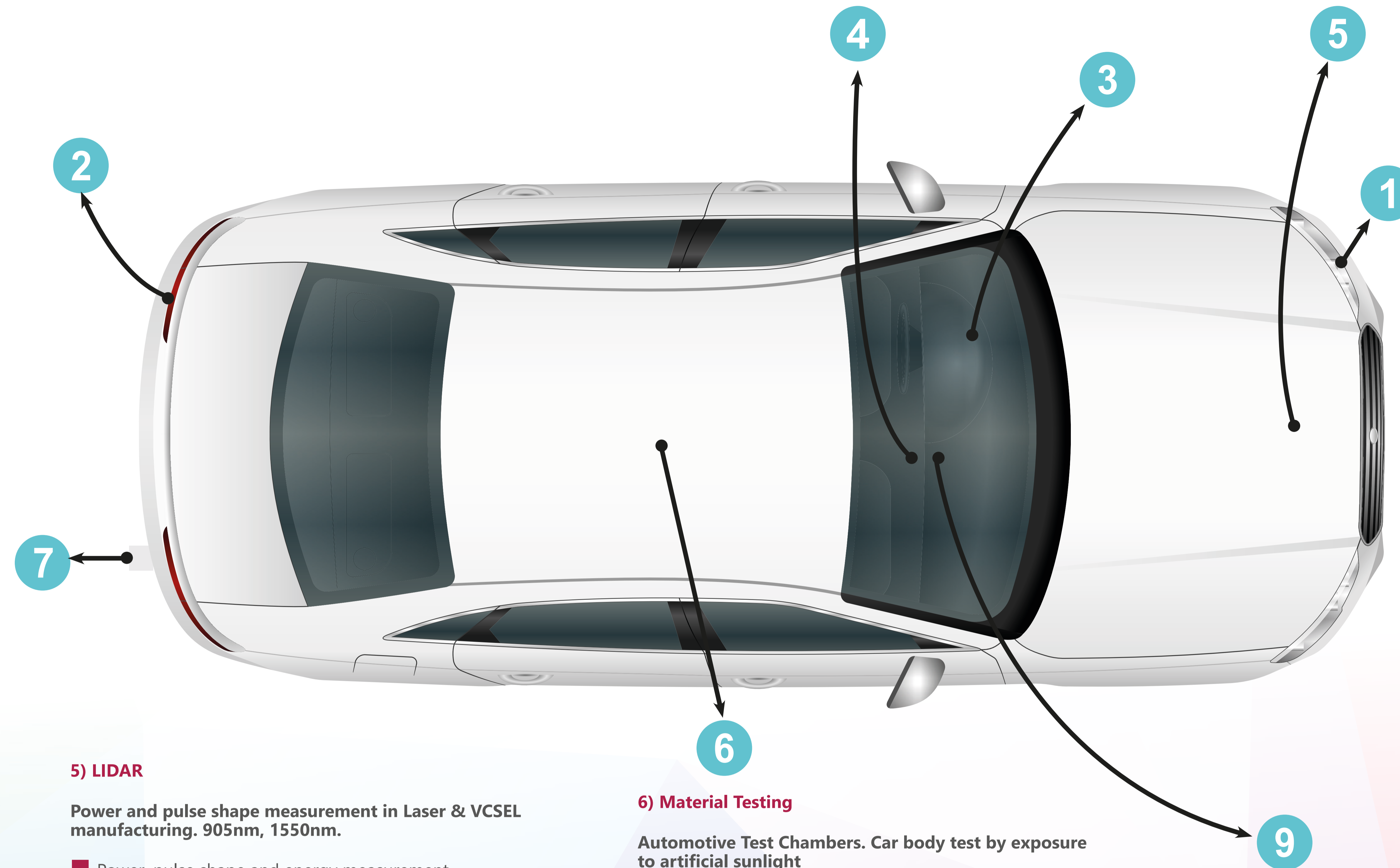


4) Camera and Sensor Testing

Characterization of pixel non-uniformity, pixel sensitivity, pixel linearity on cameras

Linearity measurement on sensors (e.g. NIR rain sensor)

- Uniform, Tuneable and high-dynamic light sources with RGB and various spectral distribution: **ISS-17-VA, ISS-30-VA**



5) LIDAR

Power and pulse shape measurement in Laser & VCSEL manufacturing. 905nm, 1550nm.

- Power, pulse shape and energy measurement
- Single chip laser and laser array, e.g. VCSEL, EEL
- Measurement solutions: **ISD-1.6-SP, ISD-0.8, ISD-3, ISD-5, ISD-10, ISD-15, ISD-30, P-9710**



- Optionally: Spectroradiometer **BTS2048-Series** and software for system integration



Calibration of Laser & VCSEL based systems.

- Reflexion standards in different grey scales and mounted in larger (mosaic) arrays: **BN-R98, BN-R70, BN-R20, BN-R02**



6) Material Testing

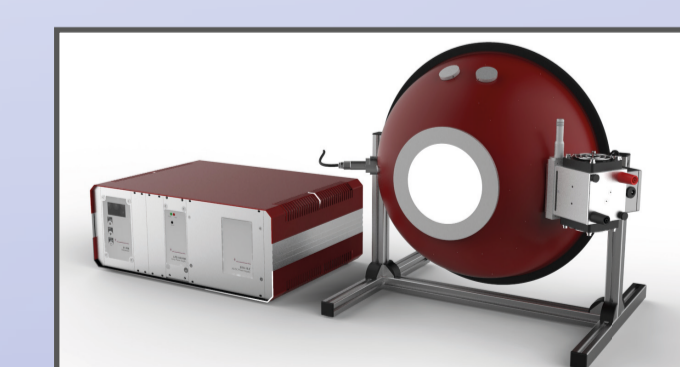
Automotive Test Chambers. Car body test by exposure to artificial sunlight

- Sun Simulator Testing, UV/VIS/IR: **SST-1800**



Single components testing (electronics, plastics, etc.)

- Uniform light source used as high optical power sun simulator: **ISS-28P-Xe-V01**



7) Exhaust Gas

Turbidity filter measurement in exhaust gas inspection processes.

- Spectral Transmission, mobile and robust: **LCRT-2005-S**



8) Speed Control

Quality Control in laser manufacturing. Safety aspects: Optical power, pulse shape, pulse energy

- Fast response and miniaturized integrating sphere: **ISD-1.6-SP, P-9710-4**



9) Interior Lighting

Interior light sources, dashboard, indicator lights, LEDs, tunable color and display measurement on any kind of light installations in cars. Temporal Light Artefacts measurement (flicker).

- Spectral Light Meter to measure, flicker, spectral irradiance, spectral radiant flux, spectral radiance or spectral radiant intensity: **BTS256-EF, BTS256-LED, CCS-45, LDM-1901 with BTS2048-VL-TEC**



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