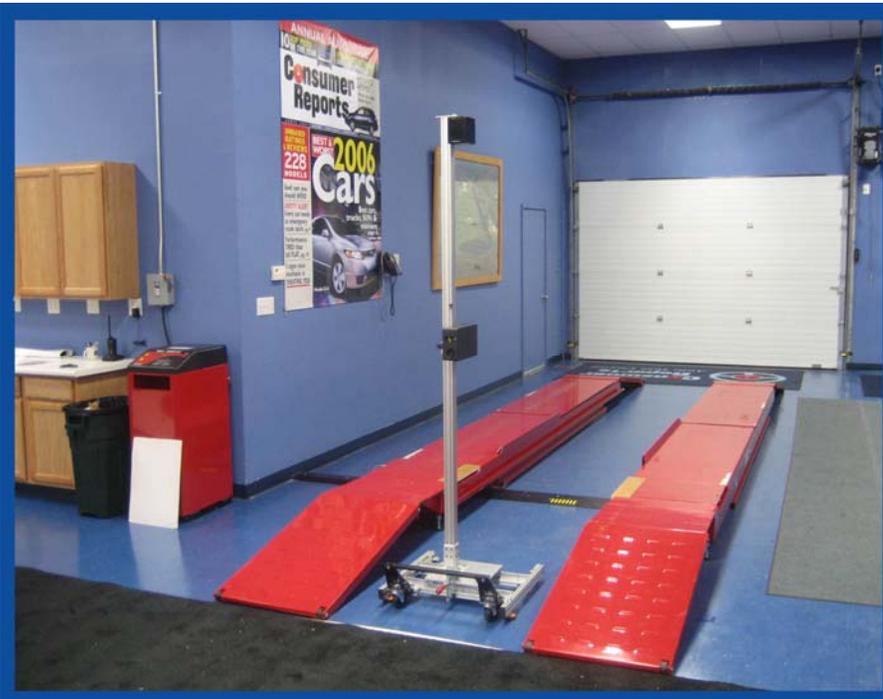




VOA-100

Visual Optical Aim Photometer

Sapphire Technical Solutions is an ISO-17025 accredited photometric, radiometric and power efficiency testing service as well as an equipment manufacturer. We proudly support the aerospace, automotive, and commercial lighting industries.



The Visual Optical Aim Photometer is a precision CCD-camera based photometer. Designed to give comparable photometric values to a goniophotometer, with a high-degree of repeatability and long term accuracy. It has the ability to aim headlamps, measure and record gradient values, cut-off position, total lumens of lamp (in projected area), etc.

New testing capabilities are added regularly as the industry keeps changing. New standards for IIHS (Insurance Institute for Highway Safety) Headlamp Performance and NHTSA (National Highway Transportation Safety Administration) standards for NCAP (New Car Assessment Program) are incorporated in the system already today.



VOA-100

Automated acquisition and storage of the forward-lighting pattern for analysis and comparison. Single process records and stores alignment and intensity information for improved efficiency and time savings.

Ability to determine aim/alignment based on live computer-based calculations and visual cues. Improved repeatability and accuracy compared to human visual determination alone.

Computer-generated visual aiming requirement boundaries and alignment cues for compatibility to SAE J599 Lighting Inspection Code and FMVSS-108 Aiming Requirements. Eliminates the need for permanent markings on a screen and tedious manual adjustment based on each vehicle.

Ability to determine and record lighting pattern's characteristics such as uniformity, streaking, dark spots, etc.

High-dynamic range CCD-based data acquisition system. Designed for accurate data recording comparable to a goniophotometric system. Quantitative evaluation of the "gradient/cutoff" line, along with actual total lumens of the area of the light pattern captured.

Large-format aiming screen (20' wide by 10' tall) for extended pattern capture (+/- 20° left/right, +/- 10° up/down). Other screens and distances available.

Modular components using readily available cabling and devices for ease of set up and replacement of any necessary system components.

New Win8 Professional computer, flat screen monitor, and printer; with network capabilities for data backup and transfer purposes.

Data acquisition software capable of implementing optional custom requirements.



SET-UP

Measurement Screen Setup

The system has a single screen that matches the SAE J599 Lighting Inspection Code and FMVSS-108 Requirements. This screen is to be installed in a set location and can be moved as needed.

Measurement of Cut-Off Angle and Gradient Value

With the use of the measurement screen, the software calculates the "gradient" value and also the cut-off line position, both on incoming and after adjustment.

Measurement of Total Light Output (Total Luminous Flux)

With the use of the measurement screen, the software calculates the "total luminous output" value of the beam pattern with a precision of better than 0.1° increments. This data is useful to evaluate the relative performance of various manufacturer's and lamp types.

Measurement of Beam Distribution—Isocandela

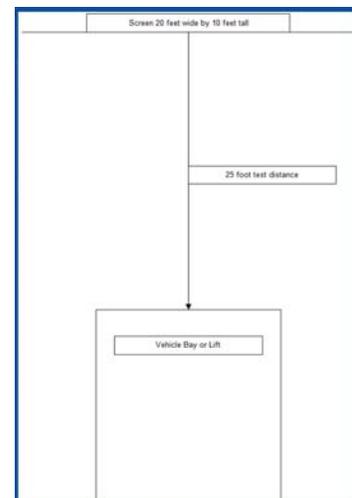
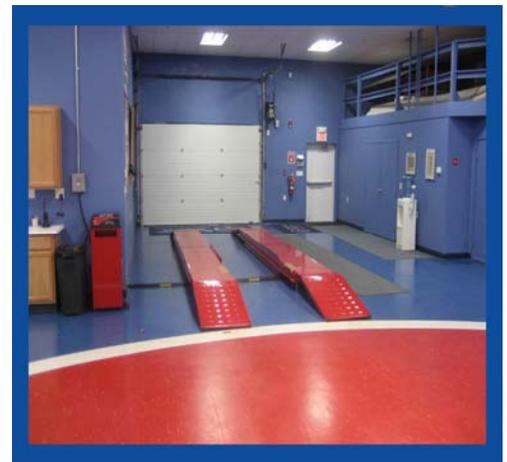
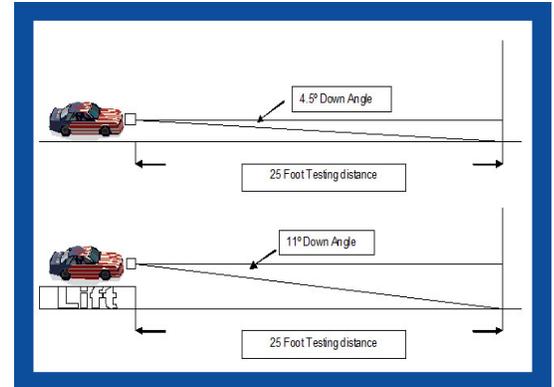
The system automatically measures and stores the luminous intensity distribution of the light source. This is stored in standard IES formats, as well as being exportable to Excel, ascii text, jpegs, and the STS standard format that stores the overlay of aiming information, as well as all calculated data.

Room Conditions – Environmental Conditions:

Lighting, Temperature, and Human Interference

To minimize interruptions, it is recommended that the system be set up in an area that will not be disturbed or used for other purposes. Each "change" to the area (constant foot traffic, storage of items in the area, large swings in ambient temperature and humidity, etc.) can affect the data acquisition. Typical test temperatures should be held around 22° C (+/- 5°) and less than 70 % humidity.

(Car Ramp available as an option but not typically included.)





ALL YOUR TESTING AND CALIBRATION NEEDS



Mission and Vision Statements

The mission of Sapphire Technical Solutions, L.L.C. is to provide the highest quality services to our customers, in accordance with ISO/EIC 17025:2005

Sapphire Technical Solutions, L.L.C. vision is to be merited as the best in our technical field, and therefore our customer's best resource to meet their needs. Sapphire Technical Solutions is dedicated to the highest quality standard in all areas of operation.

The needs of our Customers

Sapphire Technical Solutions has worked to develop our scope based on customer needs, so we can be an accredited source for the calibration of your equipment. We continually work to expand our scope to meet our customer requirements.

Our research and development also is continually working for the ever changing testing equipment needs of the lighting industry and our customers alike.