**Movable Solar Simulation Array Systems**

EYE APPLIED OPTIX™ produces movable solar simulation arrays that replicate the movement of the sun during an individual day. The movable solar arrays are available with either full spectrum or IR heat loading light sources.

### Light Source Selection

**Full Spectrum Options**
- EYE Solarlux™ standard lamp
- EYE Solarlux™ UV-plus lamp

### Heat Loading Options
- EYE™ infrared lamp
- EYE™ halogen lamp

### Array Moving Options

The lighting array is designed for controlled movement to replicate the changing position of the sun for evaluating the effect of solar radiation on the front, side or rear of the test vehicle.

**Movement Options include:**
- Fixed position
- Variable height control
- Full, or partial, array tilt

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EYE Lighting International of North America, Inc.
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www.eyesolarlux.com
Solar Simulation and Heat Loading Systems

EYE APPLIED OPTIX™ offers a variety of indoor testing options for simulating solar radiation during individual day or annual periods.

**Full Spectrum Solar Simulation Vehicle Test Chamber**

This large interior volume full spectrum test chamber can accommodate a full-size passenger vehicle. The chamber is equipped with a full spectrum solar simulator that generates UV, Visible and IR spectrum radiation that closely matches natural sunlight, and also features a wide ranging temperature control system.

**EYE APPLIED OPTIX™ Full Spectrum Vehicle Test Chamber features:**
- Sunlight simulating target irradiation ranging across the UV B, UV A, Visible, and Infrared spectrum.
- Programmable temperature control ranging from -40°C to +80°C (0°C to +80°C during solar simulation).
- Temperature sensors with PID controller ensure precise management of test vehicle temperature during test.
- Spectral distribution and radiation is compliant with appropriate IEC, EPA and ASTM standards.
- Electronically controlled solar radiation between 350 – 1150 W/m².

**Testing purpose**
- Vehicle air conditioning system and solar sensor testing
- Full spectrum and UV radiation resistance testing of entire vehicle

**Full Spectrum Solar Simulation Vehicle Test Chamber Spectrum Distribution**

Solar spectrum distribution comparison between natural sunlight and the various light sources available with the Full Spectrum and IR Heat Loading test chambers.

**IR Solar Heat Loading Vehicle Test Chamber**

This large interior volume heat loading test chamber can accommodate a full-size passenger vehicle. The chamber is equipped with an infrared (IR) Solar simulator, and also features a wide ranging temperature control system.

**EYE APPLIED OPTIX™ IR Solar Heat Loading Vehicle Test Chamber features:**
- Electronically controlled solar radiation between 0 – 1150 W/m².
- Programmable temperature control ranging from -40°C to +80°C (0°C to +80°C during solar simulation).
- Temperature sensors with PID controller ensure precise management of test vehicle temperature during test.

**Testing purpose**
- VOC testing
- Vehicle interior heat resistance testing
- Heat cycle testing
- Battery performance testing

**Vehicle interior Air VOC Test**

EYE APPLIED OPTIX™ IR Solar Heat Loading Vehicle Test Chamber is fully compliant with all aspects of the ISO 12219-1 “Interior Air of Road Vehicles” test procedure.

<table>
<thead>
<tr>
<th>Test mode</th>
<th>Standard mode</th>
<th>Parking mode</th>
<th>Driving mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>23°C</td>
<td>4h</td>
<td></td>
</tr>
<tr>
<td>Relative humidity</td>
<td>50±2%</td>
<td>50±5%</td>
<td>50±5%</td>
</tr>
<tr>
<td>Radiators on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Background</td>
<td>VOC/ carbonals</td>
<td>cCO</td>
<td>VCO/ carbonals</td>
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<tr>
<td></td>
<td>30min</td>
<td>30min</td>
<td>30min</td>
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<tr>
<td>Door open</td>
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</tbody>
</table>

EYE APPLIED OPTIX™ IR Solar Heat Loading Vehicle Test Chamber Spectrum Distribution

Solar simulation lamp class B.

JIS Standard Sunlight

CIE85 Sunlight

Spectral distribution of standard sunlight and light sources for testing machines.

Sunlight specified by JIS to express the output characteristics of JIS Standard Sunlight/Solar Batteries.

Sunlight specified by CIE(International Commission on Illumination) for CIE85 Sunlight/Testing Machines.

ISO12219-1 temperature:23°C±2% humidity:50%±5% radiators on 600kW/m²±5% background concentration:background material 20ppm TVOC 200μg/m³