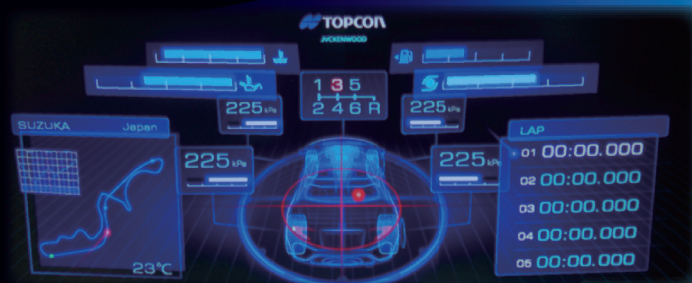


Optical measurement line up for Automotive lighting



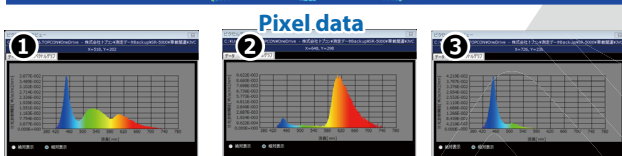
De facto standard model for car light material measurement.

2D Spectroradiometer

SR-5100

It can catch spectral change of 2448x2048 points as 2D by spectral measurement at a time.

- Measurement range :
Spectral Mode: 0.5 - 17,000,000,000 cd/m²
XYZ(Filter) Mode: 0.005 - 100,000 cd/m²
- Accuracy in luminance : ±2% or less
- Accuracy in chromaticity :
dx,dy : ±0.002 or less (Illuminant A)



Spectroradiometer

SR-SERIES

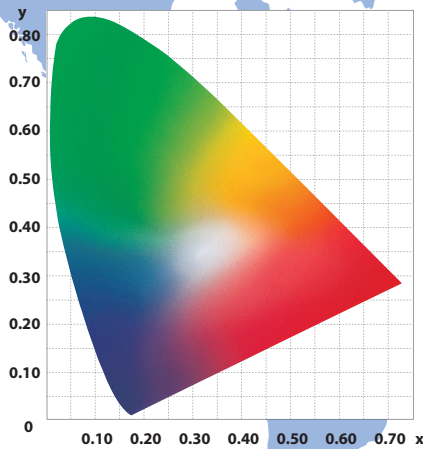
TOPCON SR-series are suited to measure high-quality automotive parts with high accuracy.

- Measurement range
0.0001 - 500,000,000 cd/m² (SR-5AS)
0.0005 - 5,000,000,000 cd/m² (SR-5A)
0.001 - 500,000 cd/m² (SR-5/SR-5S)
- Accuracy in luminance : ±2% or less
- Accuracy in chromaticity :
dx : ±0.0015 or less
dy : ±0.001 or less (SR-5AS/5A/5S, Illuminant A)
dx,dy : ±0.002 or less (SR-5, Illuminant A)



It can managed color and luminance between departments of development, design, quality control, acceptance and suppliers.

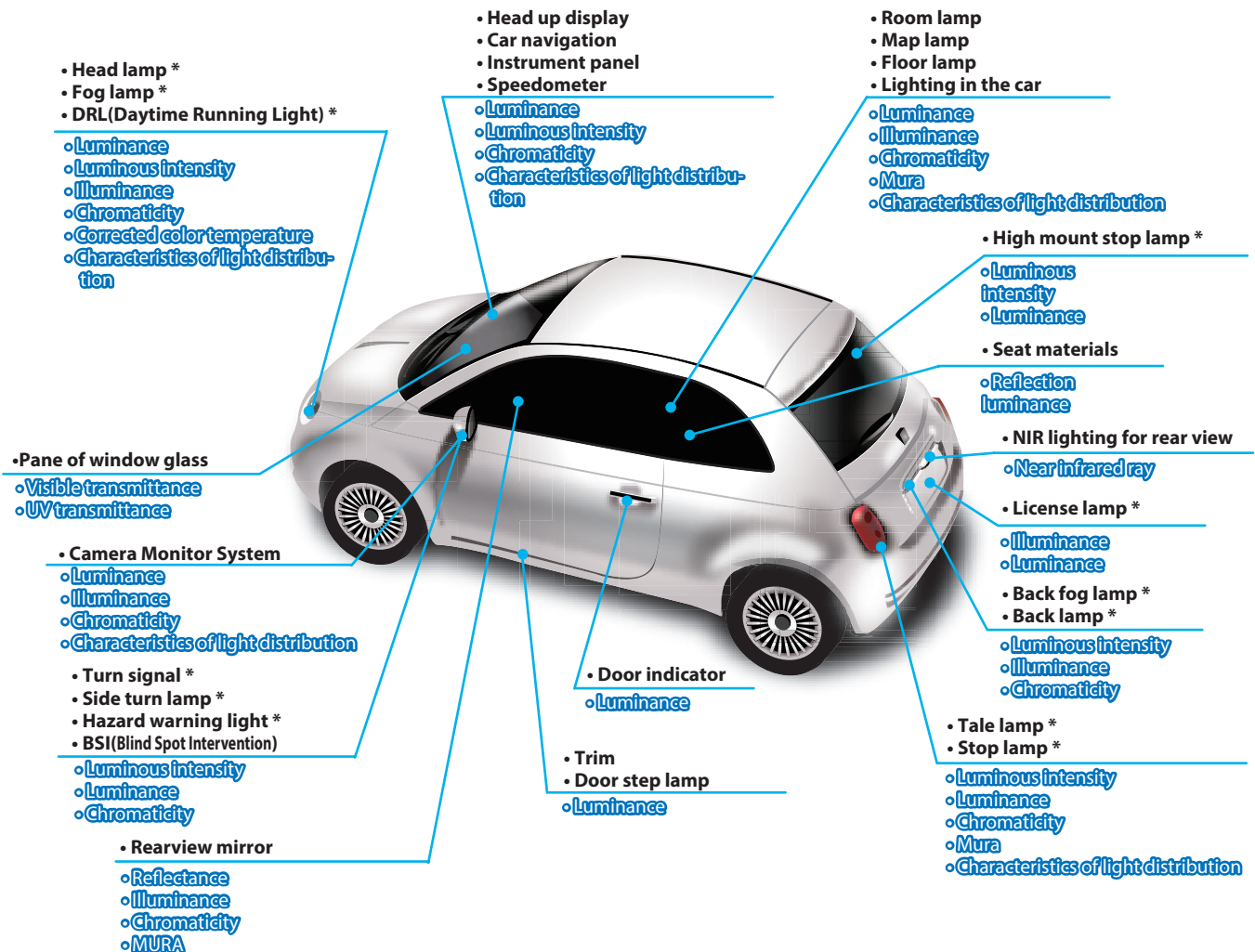
CIE1931 Chromaticity Diagram



We can provide customers high quality service and products through long experience over half century,

Automotive usage

* Ministry of Land, Infrastructure, Transport and Tourism
Announcement that Prescribes Details of Safety Regulations for Road Vehicles



Exterior Lighting / Interior Lighting

Head lamp / Fog lamp Back fog lamp / back lamp DRL(Daytime Running Light)

Evaluation case

- Luminance, Luminous intensity, Illuminance, Chromaticity, Corrected color temperature, Characteristics of light distribution, Mura, Response speed



e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A
- Luminance & Chromaticity Uniformity Analyzer UA-20
- Uniformity Analyzer UA-10A
- Illuminance Meter IM-600(EX)
- Luminance Colorimeter RD-80SA
- 2D Spectroradiometer SR-5100

Turn signal / Side turn lamp Hazard warning light BSI(Blind Spot Intervention)

Evaluation case

- Luminous intensity, Chromaticity, Characteristics of light distribution, Mura, Response speed, Reflectance



e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A
- Luminance & Chromaticity Uniformity Analyzer UA-20
- Uniformity Analyzer UA-10A
- Illuminance Meter IM-600(EX)
- Luminance Colorimeter RD-80SA

Tale lamp / Stop lamp / High mount stop lamp

Evaluation case

- Luminance, Luminous intensity, Illuminance, Chromaticity, Corrected color temperature, Characteristics of light distribution, Mura, Response speed



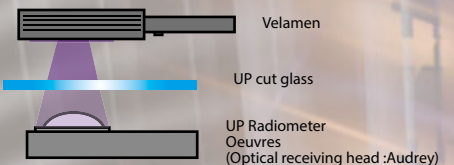
e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A
- Luminance & Chromaticity Uniformity Analyzer UA-20
- Uniformity Analyzer UA-10A
- Illuminance Meter IM-600(EX)
- Luminance Colorimeter RD-80SA
- 2D Spectroradiometer SR-5100

Pane of window glass

Evaluation case

- Transmittance (Visible Light / Ultraviolet)
- Spectral transmittance (Visible Light)



e.g.)Adoption model

- 2D Spectroradiometer SR-5100
- UV Radiometer UVR-300

License lamp

Evaluation case

- Illuminance, Chromaticity



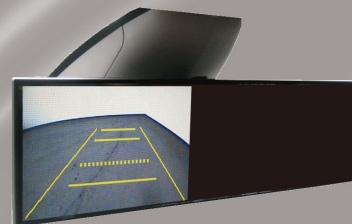
e.g.)Adoption model

- Spectropolarimeter SR-5AS / 5A / 5
- Luminance Colorimeter BM-5AC / 7AC / 9A
- Luminance & Chromaticity Uniformity Analyzer UA-20
- Uniformity Analyzer UA-10A

Room mirror

Evaluation case

- Luminance, Chromaticity, Mura, Characteristics of light distribution, Reflectance



e.g.)Adoption model

- Spectropolarimeter SR-5AS / 5A / 5
- Luminance Colorimeter BM-5AC
- Luminance & Chromaticity Uniformity Analyzer UA-20
- Illuminance Meter IM-600(EX)
- Luminance Colorimeter RD-80SA

Car navigation / Multi-information display / Camera Monitor System

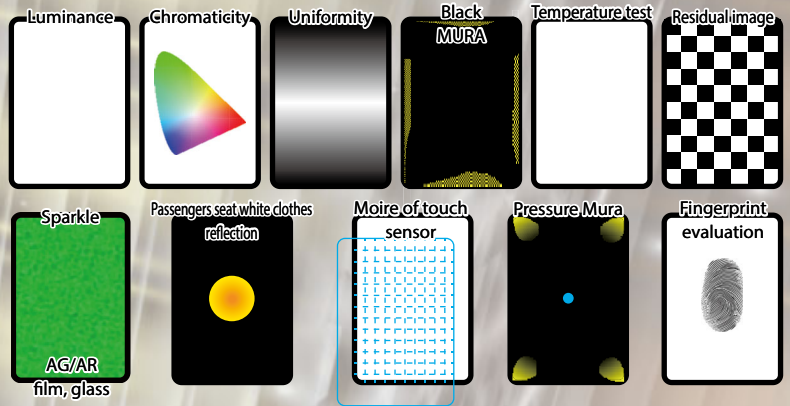
Evaluation case

- Luminance, Chromaticity, Characteristics of light distribution, Mura, Response speed, Sparkle, Fingerprint, Residual image



e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A / 5
- Luminance Colorimeter BM-5AC
- Luminance & Chromaticity Uniformity Analyzer UA-20
- Uniformity Analyzer UA-10A
- Luminance Colorimeter RD-80SA
- 2D Spectroradiometer SR-5100



Speedometer

Evaluation case

- Luminance, Chromaticity, Mura



e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A / 5
- Luminance Colorimeter BM-5AC
- Luminance & Chromaticity Uniformity Analyzer UA-20
- 2D Spectroradiometer SR-5100

Switch / Tell tale and indicator

Evaluation case

- Luminance, Chromaticity, Mura



e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A / 5
- Luminance Colorimeter BM-5AC
- Luminance & Chromaticity Uniformity Analyzer UA-20
- 2D Spectroradiometer SR-5100

ShyTech(Decoration film / Seamless design)

Evaluation case

- Luminance, Chromaticity, Characteristics of light distribution, Color measurements



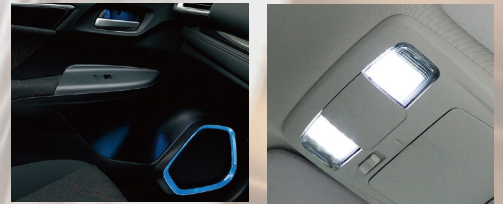
e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A / 5
- Luminance & Chromaticity Uniformity Analyzer UA-20
- 2D Spectroradiometer SR-5100

Trim / Door step lamp / Interior light

Evaluation case

- Luminance, Illuminance, Chromaticity, Mura



e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A / 5
- Luminance Colorimeter BM-5AC
- Luminance & Chromaticity Uniformity Analyzer UA-20
- Uniformity Analyzer UA-10A
- Illuminance Meter IM-600(EX)
- 2D Spectroradiometer SR-5100

Seat material / Dashboard

Evaluation case

- Color Measurements, Surface roughness



e.g.)Adoption model

- Spectroradiometer SR-5
- 2D Spectroradiometer SR-5100

HUD (Head-Up Display)

Evaluation case

- Luminance, Illuminance, Chromaticity, Mura, Transmittance



e.g.)Adoption model

- Spectroradiometer SR-5AS / 5A / 5
- Luminance Colorimeter BM-5AC
- Luminance & Chromaticity Uniformity Analyzer UA-20
- Illuminance Meter IM-600M
- 2D Spectroradiometer SR-5100

Product Lineup

Luminance(cd/m²), Chromaticity x,y,
Corrected color temperature(K),
Chromaticity and Luminance Unevenness

2D spectroradiometer **SR-5100**

Effective pixel : 2448x2048

Measurement range :
0.005 - 17,000,000,000cd/m²



2 D

Luminance(cd/m²), Chromaticity x,y, Illuminance(lx), Luminous intensity(cd),
Corrected color temperature(K), Color rendering property

*The spectral irradiance and illuminance may be measured by attaching an illuminance adapter to the Spectroradiometer.

HDR spectroradiometer **SR-545**

Measurement range :
0.0001 - 500,000,000 cd/m²
*0.01 - 10,000,000,000 lx



spectroradiometer **SR-5A**

Measurement range :
0.0005 - 500,000,000 cd/m²
*0.01 - 10,000,000,000 lx



Luminance(cd/m²), Chromaticity x,y, Corrected color temperature(K),
Chromaticity and Luminance Unevenness

Luminance&Chromaticity Uniformity Analyzer

UA-20C

Effective pixel : 5328x4608

Measurement range

Without ND Filter	0.01 - 50,000 cd/m ²
Option ND Filter 1%	5.0 - 5,000,000cd/m ²
Option ND Filter 0.01%	500 - 500,000,000 cd/m ²



Uniformity Analyzer

UA-10A

Effective pixel : 1920x1200

Measurement range

Without ND Filter	0.1 - 80,000 cd/m ²
Option ND Filter 1%	10 - 8,000,000cd/m ²
Option ND Filter 0.01%	1,000 - 800,000,000 cd/m ²



2 D

Luminance(cd/m²), Chromaticity x,y, Illuminance(lx),
Luminous intensity(cd), Corrected color temperature(K),
Color rendering property

spectroradiometer

SR-5

Measurement range :
0.001 - 500,000 cd/m²
*0.02 - 10,000,000 lx

SR-5S

Improved chromaticity accuracy type
x : ±0.0015, y : ±0.001



Luminance(cd/m²),
Luminance Unevenness

Uniformity Analyzer **UA-20Y**

Effective pixel : 5328x4608

Measurement range

Without ND Filter	0.01 - 50,000 cd/m ²
Option ND Filter 1%	5.0 - 5,000,000cd/m ²
Option ND Filter 0.01%	500 - 500,000,000 cd/m ²



2 D

Luminance(cd/m²), Chromaticity x,y, Corrected color temperature(K)

Luminance colorimeter **BM-5AC**

Measurement range :
0.005 - 1,200,000 cd/m²



Luminance colorimeter **BM-7AC**

Measurement range :
1 - 12,000,000 cd/m²



Luminance(cd/m²)

Luminance meter **BM-9A**

Measurement range :
0.01 - 28,000,000 cd/m²

BM-9A20D : 2°
BM-9A10D : 1°
BM-9A02D : 0.2°



Illuminance(lx), Luminous intensity(cd)

Digital Illuminance meter **IM-600/600M**

Measurement range:
0.005 - 999,000 lx

Type approval
Conforms to the general
AA illuminance meter



Ultraviolet radiance(μW/cm²)

UV Radiometer **UVR-300**

Measurement range :
0.1 - 280,000 μW/cm²

UD-250 220 - 300nm
UD-360A 310 - 400nm
UD-400 360 - 490nm



Maintenance Period

The repair parts (*1) are retained by us for 8 years (*2) after you purchased.

The availability period of repair parts indicates the period during which the product is repairable.

Even if the parts availability period has elapsed, we will repair your product if it is repairable. Do not hesitate to call our local retailer where you purchased the product, or TechnoOptis Co., Ltd.

(*1) The repair parts are the parts necessary to keep the product functions.

(*2) Although we continue to endeavor to retain the repair parts so as to be covered during the maintenance period, we may shorten the maintenance period due to unexpected events.

TechnoOptis Co., Ltd.

Formerly Topcon Technohouse Corporation

4F, Imas Itabashi BASE, 2-4-1, Sakashita, Itabashi-ku, Tokyo, 174-0043, JAPAN

Phone: +81-3-3558-2666 Fax: +81-3-3558-4661

E-mail: techno-info@techno-optis.com

SAFETY PRECAUTIONS



Make sure to carefully read the "Manual" to ensure that you use the product properly and safely.

•Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.

For more information please visit our website.

<https://www.techno-optis.com/en/>

