

GOSSEN

Spectral Photometry



lm

lx

cd/m²

μW/m²/nm

cd

MAVOSPEC **BASE**

WHAT'S THE COLOR OF SUCCESS?

Color Your Light the Way You Want It Mavospec Base – Light Redefined

Light orchestrates space and determines how it effects the observer. Light generates an atmosphere of suspense, supports the impulse to buy, increases productivity, creates a sense of security or simply invites people to linger – just a few of the demands that have to be met through the successful use of light.

The development of LEDs with high luminous efficacy, and thus outstanding energy efficiency, has opened up new creative options for lighting design, but at the same time it represents a great challenge with regard to the achieved light effect.

Decisive Factors for Lighting Design

The emitted light spectrum of an LED has entirely different characteristics than those of previously utilized light sources. LED brightness and color vary due to the manufacturing process. Daylight, incandescent light bulbs and halogen lamps achieve the highest color rendering index of 100 – a value which can't be reached at the moment with LED lamps. In addition to this, various manufacturing lots of LEDs demonstrate distinct differences, so that even when LED lighting is used exclusively, blended light environments occur which can no longer be adequately evaluated by means of previously used measurements for the determination of light color and illuminance.

Successful Light Qualification

An extended measurement of light quality is becoming more and more important for the implementation of lighting concepts. Whereas with conventional lighting technology it has been sufficient in the past to check illuminance and luminance, today it's also necessary to take spectrum, chromaticity, color temperature, color rendering index and flicker into consideration.

The Mavospec Base ascertains all of the relevant factors of your light and provides you with the assurance that all of your requirements are being fulfilled. The compact, high-quality spectrometer qualifies your light with high levels of precision, reads out the results clearly and concisely at the color display and documents the measured values – day after day for all light sources.



IES
TM-30-15
inclusive



USB 2.0 micro

WHAT'S THE COLOR OF JOY?

Precision Measurement and Intelligible Qualification Mavospec Base – the Innovative Spectrometer

We developed the Mavospec Base in order to make precise and easy photometry possible for everyone – whenever and wherever you need it. All measured quantities which are relevant for light such as illuminance, correlated color temperature, color rendering index according CIE 13.3 and IES TM-30-15, color coordinates in accordance with various CIE standards, flicker, spectral power distribution, peak wavelength and dominant wavelength are determined for the measured spectrum and displayed such that they can be understood by experts as well as laypersons.

Mavospec Base – Developed to Optimize Your Light

INTUITIVE ONE-HAND OPERATION – With the help of the ring controller and just a few keys.

BRILLIANT COLOR DISPLAY – for perfect read-outs under all lighting conditions and lucid evaluations directly at the display.

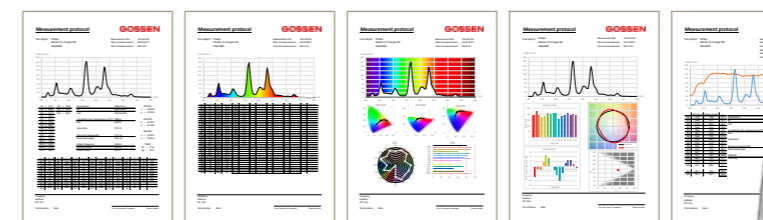
OUTSTANDING MEASURED VALUE STABILITY – by means of a large temperature range resulting from an integrated temperature sensor and automatic temperature compensation of the dark current.

PHOTOMETRIC AND RADIOMETRIC CALIBRATION – with calibration report for verifiably perfect results.

INVESTMENT SECURITY – thanks to top quality made in Germany and a 3-year guarantee, as well as the ability to install updates via the USB port for new features and changes to the standards.

Documented Light Quality – for Reliable Production and Verifiable Results

The Mavospec Base stores measured values to the integrated SD card. These measured values are conveniently transmitted to the PC via the USB port. Evaluations can be conducted in a simple and adaptable fashion with the help of the included Excel sample reports including graphic visualization. Trouble-free incorporation into customer systems and applications is also made possible by the open interface protocol.



Simple Report Generation – The included Excel evaluation includes 5 standard reports which users can adapt to their own individual needs.

IDENTICAL LIGHT COLOR DAY AFTER DAY

Precision comes from experience, know-how and perfect calibration at regular intervals.

We are the experts for the measurement of light with decades of experience in our chosen field of endeavor. It's not without reason that the name GOSSEN stands for continuous innovation – in response to rapidly changing technologies, regulations and markets. And thus the Mavospec Base with intuitive user interface is one of the most accurate and reliable spectrometers in its class, and reflects the most up-to-date technology available on the market.

However, like all other precision light meters, this product also requires regular maintenance, recalibration and software updates in order to continuously fulfil performance capabilities within the stipulated tolerances and specifications.

Calibrated for the Most Exacting Demands

We recommend a calibration interval of 12 to 24 months for the Mavospec. Recalibration is conducted at the GOSSEN Light Lab with a tested and monitored optical table, whose traceability to the national standard maintained by the PTB (German Federal Institute of Physics and Metrology) is assured by means of a Wi41G standard lamp. The lab is subject to test equipment monitoring in accordance with DIN EN ISO 9001-9004, and is additionally accredited by DAkkS for illuminance. This assures top quality calibration with international recognition.



Model: MAVOSPEC BASE
Article number: M521G

PHOTOMETRY	
Applications	Daylight, LEDs, halogen and more
Illuminance Evis	10 lx ... 100,000 lx
Irradiance Ee	•
Luminous Efficacy Ratio LER	•
Color temperature CCT	1,600 K ... 50,000 K (Duv ≥ -0.1)
Color temperature difference relative to the Planckian locus Duv	(1,600 K ≤ CCT ≤ 50,000 K)
Color Rendering IES TM-30-15	Rf, Rg
Color rendering index CRI per CIE 13.3	Ra, Re, R1 ... R15
Gamut Area Index GAI	•
Peak wavelength	•
Dominant wavelength per CIE 15	•
Color purity per CIE 15	•
Chromaticity coordinates [x',y'] per CIE 1931	•
Chromaticity coordinates [u',v'] per CIE 1976	•
Chromaticity coordinates [u,v] per CIE 1960	•
Flicker – Index	0.00 ... 1.00 (f ≤ 400 Hz and Flicker % ≥ 2.5 %)
Flicker – %	2.5 % ... 100 % (f ≤ 400 Hz)
Flicker – frequency	2 Hz ... 6,000 Hz (Flicker % ≥ 2.5 %)
Configurable measured value display	•
Selectable Units Of Measure	lx / °C – fc / °F

MISCELLANEOUS	
Mains power pack	100 - 240V (50/60 Hz) 0.15A 5V, 1A (DC) USB port
Power supply via USB port	•
Rechargeable battery	Li-Ion 3.7V - 890 mAh
Automatic shutdown	Programmable for display + device
Rechargeable battery life	≥ 8 hours continuous operation
Charging time with power pack	1.5h
Operating temperature	5 - 40 °C
Dimensions [H x W x D]	139 mm x 60 mm x 30 mm
Weight	150 g
Scope of delivery	Meter, sensor cover cap, V070A rechargeable battery, power pack, USB interface cable, aluminum case, neoprene sheath, carrying strap, calibration protocol, operating instructions in German and English, 4 GB micro SDHC memory card including EXCEL file with several protocol templates and operating instructions in German, English, French, Italian, Spanish as PDF, SD adapter

SENSOR TECHNOLOGY / MEASUREMENT TOLERANCES	
Sensor	CMOS image sensor, 256 pixels
Diffusor light-entry surface	Φ 7 mm
Distance diffuser to surface to be measured	25 mm
Error limit - cosine rating (f2')	≤ 3.00 %
Spectral range	380 - 780 nm (VIS)
Full width at half maximum (FWHM)	≤ 15 nm (typically 12 nm)
Physical resolution	~ 1.72 nm
A/D converter	16 bit
Wavelength reproducibility	± 0.5 nm
Integration time	automatic, manually 10 ms – 3,000 ms
Signal-to-noise ratio	1,000:1
Spurious light	-25 dB
Dark current compensation	automatic via temperature sensor
Measurement uncertainty illuminance*	± 3 %
Reproducibility chromaticity*	± 0.0005
Measurement uncertainty CCT*	± 2 %
Measurement uncertainty TM30*	± 1.5 %
Measurement uncertainty CRI*	± 1.5 %
Measurement uncertainty Flicker*	± 1.5 %

*Standard light type A, 2,856 K @ 1,000 lx

OPERATION, INTERFACES, MEMORY	
Display	2.1" color TFT 320 x 240
Controls	3 keys, ring controller
Interface	USB 2.0
Interface protocol	open
Data storage	4 GB micro SD / 500,000 measurements
Memory mode	Manual, auto
Data format	CSV

OPTIONAL ACCESSORIES	
Replacement battery	Li-Ion 3.7V - 890 mAh Article number V070A

Subject to change without notice
• included function