Technical Sheet

GL **SPECTIS 1.0 Touch + Flicker**

The world's most accurate handheld spectrometer just got better. The GL SPECTIS 1.0 Touch + Flicker simplifies light source flicker measurement.
This reliable and versatile version integrates flicker quantification with the same intuitive touch screen interface of our successful GL SPECTIS 1.0 product line that includes accurate absolute spectral measurements. If you need to measure light flicker and other light qualities such as: lux, lumen, CCT, CRI, chromaticity coordinates, mWatt and much more, our highly portable and precise GL SPECTIS 1.0 Touch + Flicker is the ideal solution.

Features:

- Compact, portable, solidly built
- Intuitive, color LCD touch screen user interface
- Laboratory Grade accuracy and repeatability
- Dark current and temperature compensation
- Automatic accessory detection and calibration loading
- Use standalone, or in conjunction with system accessories

Includes:

- Certificate of calibration to reference standard
- Cosine-corrected standard diffuser head (illuminance)
- Versatile interfaces: USB, SD card
- Remote trigger socket
- Universal mount for tripod or optical bench use
- Rugged case, charger, cable
- 1 year warranty with extension options

APPLICATION		
Application	Natural light, LEDs, halogen light, etc.	
LED MEASUREMENT		
Illuminance (lux)*	10 – 100 000 lx	for white LED
	0.01 – 100 000 lx	Available with optional GL SALLI Diffusor
Luminance [cd/m^2]	Available with optional GL OPTI PROBE	
Luminous flux [lm]	Available with optional GL OPTI SPHERE	
Luminous intensity [cd]	Calculated in GL SPECTROSOFT	
Irradiance [W/m^2]	0.03 – 600 W/m^2 (for white LED)	
Illuminance class	Class B – DIN 5032-7 Class AA – JIS C 1609-1:2006	
Tolerance – cosine response (f2')	< 3% (1.9%)	
Spectral range**	340 – 780 nm (UVa – VIS)	GL SPECTIS 1.0 Touch + Flicker UVa – VIS

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FLICKER MEASUREMENT

	Measurement Time [ms]	Sampling Rate	Upper Cut-Off Frequency	Lower Cut-Off Frequency	FFT frequency resolution
Flicker measuring ranges	131	8µs	12,5 kHz	23 Hz	7.63
	262	16µs	6.25 kHz	12 Hz	3.81
	524	32µs	3.125 kHz	6 Hz	1.91
	1048	64µs	1.56 kHz	3 Hz	0.96
	2097	128µs	781 Hz	1.5 Hz	0.48
	4194	256µs	390 Hz	0.8 Hz	0.24
	8388	512µs	195 Hz	0.4 Hz	0.12
	16777	1024µs	97 Hz	0.2 Hz	0.06
	33554	2048µs	48 Hz	0.1 Hz	0.03

Frequency range	0.1 Hz – 12.5 kHz
Maximum sampling rate	125 kHz
Illuminance range	0.1 – 15 000 lx
FFT plot visualization	✓
Time plot visualization	✓
Flicker index	✓
Flicker percentage	✓
SVM (Stroboscopic Visibility Measure)	✓
Dominant frequency	✓

CALCULATED VALUES

CRI – Color rendering index according to CIE	Ra, R1 – R14
TM-30-15	Rf, Rg, Colour Vector Graphic
CCT – Correlated color temperature according to CIE 13.3	✓
Color peak	✓
Color dominant	optional with GL SPECTROSOFT
Color position coordinates [x,y] according to CIE 1931	✓
Color position coordinates [u',v'] according to CIE 1976	✓
Color position coordinates [u, v] according to CIE 1960	✓
PAR/PPFD	✓
Color coordinate error	optional with GL SPECTROSOFT
Metameric index	optional with GL SPECTROSOFT
Binning	optional with GL SPECTROSOFT
Assessment in accordance with ISO 3664	✓

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PHOTOMETRY / RADIOMETRY	
Sensor	CMOS image sensor
Number of pixels	256
Physical resolution / datapoint interval	~ 1.7 nm
Wavelength reproducibility	0.5 nm
Integration time	10 ms – 10 s
A/D converter	16 bit
Signal-to-noise ratio	1000:1
Stray light	2*10 E-3
Optical resolution / FWHM	10 nm
Uncertainty of spectroradiometric measurement	< 3 %
Flicker compensation	✓
Temperature sensor and dark current compensation	✓
Uncertainty of color coordinates***	0.0015
Automatic accessory detection	✓
GENERAL PROPERTIES	
Operating System	Android
Internal power supply	lithium-polymer battery 3500 mAh
Maximum current draw	600mA
External power supply	USB mini socket: 5V, 1A
Automatic shut-off	✓
Battery life	up to 6 h*****
Operating temperature	5 – 35 °C
Dimensions [H x W x D]	74.5 mm x 145.5 mm x 36.6 (with standard diffusor)
Weight	349 g
Tripod adapter	✓
INTERFACE & MEMORY	
USB	USB 2.0
Trigger	MQ172, 4-pin, programmable
SD Card slot	microSD
Measurement result storage	Auto / 4GB microSD
Data format	XML
Fiber optic connector	Optional SMA905D
DISPLAY & OPERATION	
Display	3.5" color LCD (240 x 320px)
Operation	Touch Screen, PC / Notebook
SOFTWARE	
Software	Optional GL SPECTROSOFT Basic / Pro / Lab

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ORDERING INFORMATION		
Case	✓	
Battery	✓	
USB cable	✓	
Power supply	✓	
Leash	✓	
Display protection foil	✓	
4GB microSD card	✓	
Part number	GLX 1.0t FL no. 201383	GL SPECTIS 1.0 Touch + Flicker UVa – VIS

* Dynamic range is spectrum related and should be calculated separately for any light source. Estimated dynamic range for typical 4000 K white LED.
Range estimated for optical system made to default specification. Alterations of that are often possible. Please consult technical support if you are looking for specific parameters.

** Spectral range of the sensor. Actual spectral range of system may be reduced due to limitations of used optical accessory.

*** Absolute measurement uncertainty immediately after calibration. The expanded uncertainty corresponds to a coverage probability of 95 % and the coverage factor k = 2.
Parameters valid in laboratory conditions 25deg C, relative humidity 45%.

**** Applies only within the spectral range of the given model.

***** In moderate use – continuous measurements and WiFi significantly increase energy consumption.

Note: Instrument, firmware and software specification are subject to change without prior notice. All information included in GL OPTIC datasheets and product information available in any form are carefully prepared and included information believed to be true. Please note that discrepancies may occur due to text and/or other errors or changes in the available technology. We advise to contact GL Optic before the use of the product to obtain the latest product specification.

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