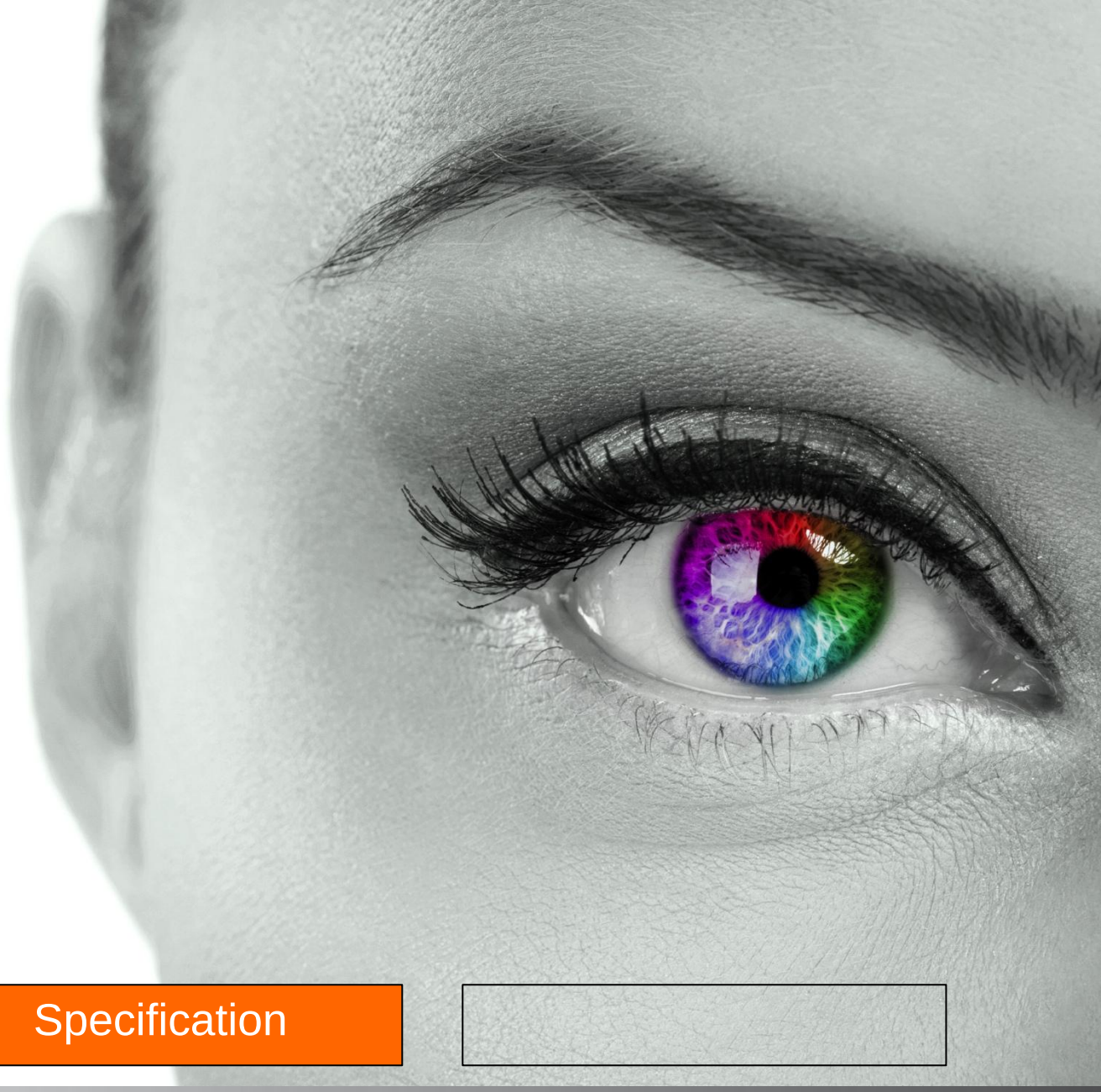
admesy
ADVANCED MEASUREMENT SYSTEMS



Specification

VATES

Version 1.01


vates
RS232
TRIGGER
IN
OUT
DC-9V
ETHERNET
USB

1. About this specification

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2. General introduction

Vates is the latin word for all-seer, the Vates can measure colour and gloss and this under several angles.The Vates colour and gloss meter has been designed to operate in areas where colour reproduction is extremely important and where long term stability needs to be guaranteed without the need for periodic calibrations. Colours and gloss are measured according to the human eye (CIE1931). The Vates uses XYZ interference filter based technology which guarantees long term stability and consistency among devices. The light sources are stabilised through an optical feedback loop, this guarantees short and long term stability of the light source. The Vates can measure up to 4,000 colour and gloss samples per second.

2.1. Vates highlights

- In-line gloss and colour measurement.
- 20, 45 and 60 degree gloss geometry available.
- Stabilised light source.
- High stability.
- High speed, 4000 colour and gloss samples per second.
- Non- contact measurement.

2.2. Fields of application

- Automation
- Plastics
- Paper
- Photovoltaic cells
- Coatings
- Paints

3. General specification

Interfaces	
USB2.0	USBTMC compliant, SCPI command set, high speed device
Ethernet	Same command set as USB
RS232	Same command set as USB
Trigger input and output	5V compliant

Lightning system	
LED	natural white led long life time stabilsed through an optical feedback loop

Measurement system	
Photo detector	Silicon photo diodes using interference based XYZ filters
Spectral response	Approximates CIE 1931 2 degree colour matching functions
Colour systems	XYZ, Lab, Luv, LCH, dE (CIE1976, CIE1994, CIE2000, CMC)
Measurement geometry	45o lighting, 0o measurement, specular component excluded (colour) 20o, 60o (gloss) Compliant with ISO, ASTM, DIN, and JIS International standards As additional feature each gloss sensor can also measure colour
Measurement speed	4.000 colour and gloss samples per second
Operating temperature	10o-40o C

Size	
LxWxH	183.5x71.5x95 mm
Mounting	extended number of mounting holes for in-line assembly
Weight	600g

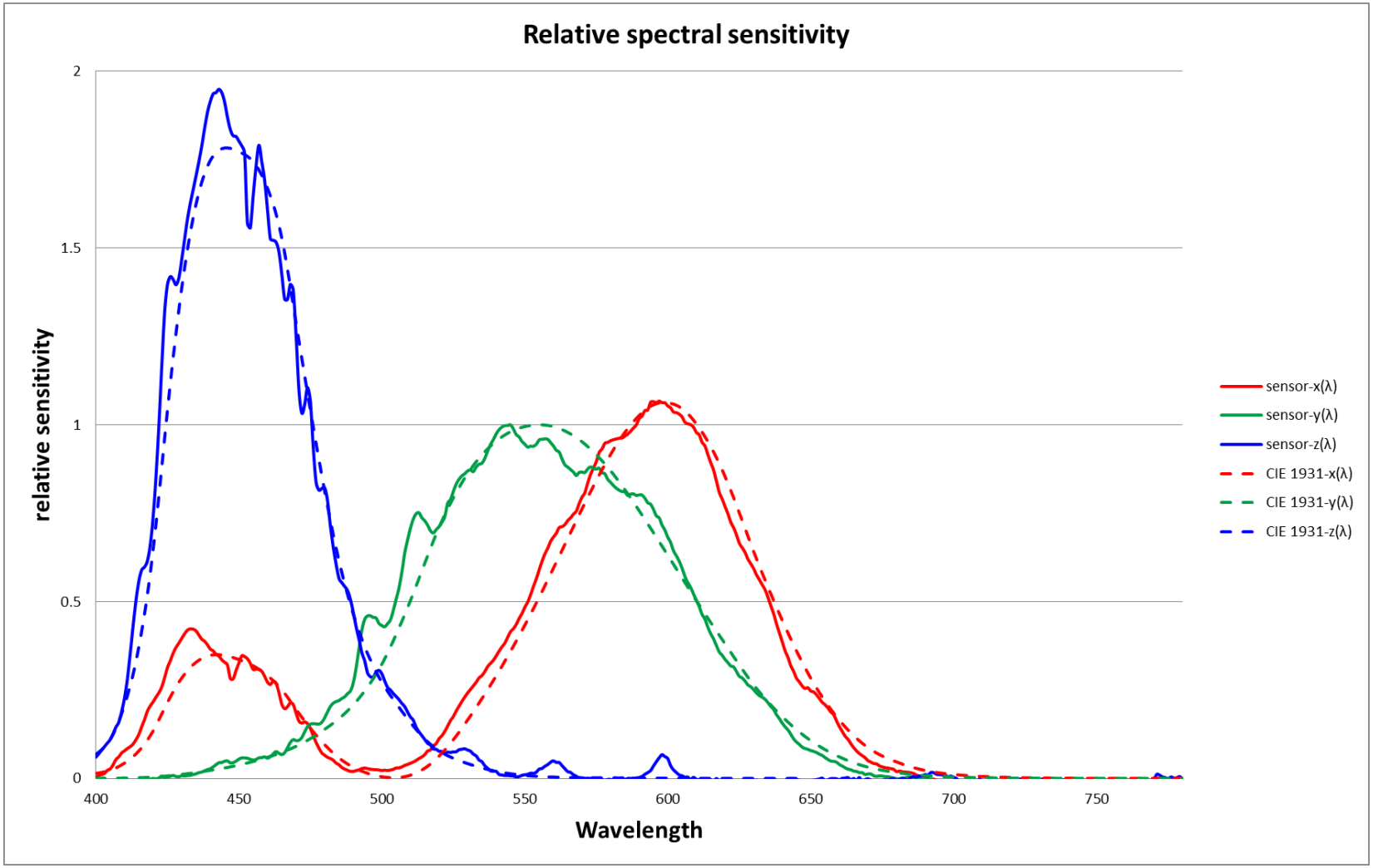
4. Colorimeter specification

Colorimeter specification			
Parameter	Range	Accuracy	Repeatability
Resolution	16 bit for X, Y and Z	>60dB without averaging	
Light source output (Y)	White LED is optically stabilised	Within 0.3% over full lifetime	±0.1% (internal stability)
Illuminant	D65, D50, C.....		
Inter instrument agreement	Delta E < 1.5		
Delta E	> 0.05	0.02	±0.03 (CIE 1976)
Absolute accuracy	Delta E <0.5 (measured on grey tiles of gretag chart) Delta E < 3 (average of 24 measurement on the gretag chart)	±2% Flicker frequency:30Hz AC/DC 10% sine wave	1%
Operating temperature	10-40° C		

Gloss specification			
Parameter	Range	Accuracy	Repeatability
Resolution	16 bit for X, Y and Z	>60dB without averaging	
Light source output (Y)	White LED is optically stabilised	Within 0.3% over full lifetime	±0.1% (internal stability)
Gloss	20° 0-2000 GU 60° 0-1000 GU	from 0-99.9 GU -> 0.5 GU from 0-2000 GU -> 0.5%	from 0-99.9 GU -> 0.1 GU from 0-2000 GU -> 0.1%
Operating temperature	10-40° C		

Accessories	
Standard accessories	PC cable Case Power adapter Software
Optional accessories	gloss tiles reference tiles

5. Typical spectral sensitivity



6. Mechanical dimensions