



SPECIFICATIONS

vates

colorimeter

Vates: multi angle reflective surface analysis

The Vates is the multi-talented member of the Admesy product family: It offers the reflective surface measurement capabilities of the Arges with 45/0° geometry, combined with 20, 45 and 60 degree gloss and colour measurement. Three stabilized light sources and four colour measurement sensors at fixed angles contribute to an easy to use, low maintenance, high end colour and gloss meter for applications in R&D and production settings that demand specular component excluded (SCE), specular component included (SCI) and separate gloss measurements.

SCE colour measurements are carried out by illuminating surfaces and measuring from different angles. This allows true colour measurement excluding the influence of gloss. SCI measures colour by illuminating and measuring at various angles to measure both colour and gloss for total appearance measurement. Gloss is measured by illuminating a sample from a predefined angle and measuring the light reflected at the same but opposite angle.



Fig 1 Alignment indicators on Vates.

Highlights

- Reflective colour measurement according to 45/0 degree standard
- Gloss or colour measurement at 20, 45 and 60 degrees
- High speed measurement: 4000 colour measurements/second in RAM mode
- Measure colour and luminance in various colour spaces: XYZ, CIELab, LCH, Luv
- Measure deltaE according to CIE1976, CIE1994, CIE2000, CMC
- Trigger input and output for in line applications. General Purpose I/O for control
- Measure via a PC (also embedded systems) or stand alone
- Works on various operating systems: Windows, OSX, Linux, winCE
- SCPI command interface for easy integration in other applications
- USBTMC standard compliant – full speed USB2.0 interface
- Directly supported in Labview / Labwindows / Visual Studio via VISA library. All other programming languages that support VISA can be used



Vates general specifications

Interfaces

USB2.0	USBTMC compliant, SCPI command set, high speed device
Ethernet	Same command set as USB
RS232	Same command set as USB
Trigger in- & out	5V compliant

Power ratings

	Min voltage	Typical voltage	Max voltage	Max current
USB powered	4.75V	5.00V	5.25V	350mA
DC powered	8.50V	9.00V	9.50V	350mA

Measurement system

Photo detector	Silicon photo diode using XYZ filters
Spectral response	Approximates CIE 1931 2 degree colour matching functions
Measurement parameters	XYZ, Lab, Luv, LCH, ΔE (CIE1976, CIE1994, CIE2000, CMC)
Optical system	20°, 45°, 60° lighting 0°, 20°, 45°, 60° measurement
LED	Natural white LED, stabilized through internal optical feedback loop
Measurement speed	Colour and gloss measurement at 4000 points/s
Size (HxWxD)	99 x 71.5 x 183.5 mm
Mounting	4 x M4 thread holes on top

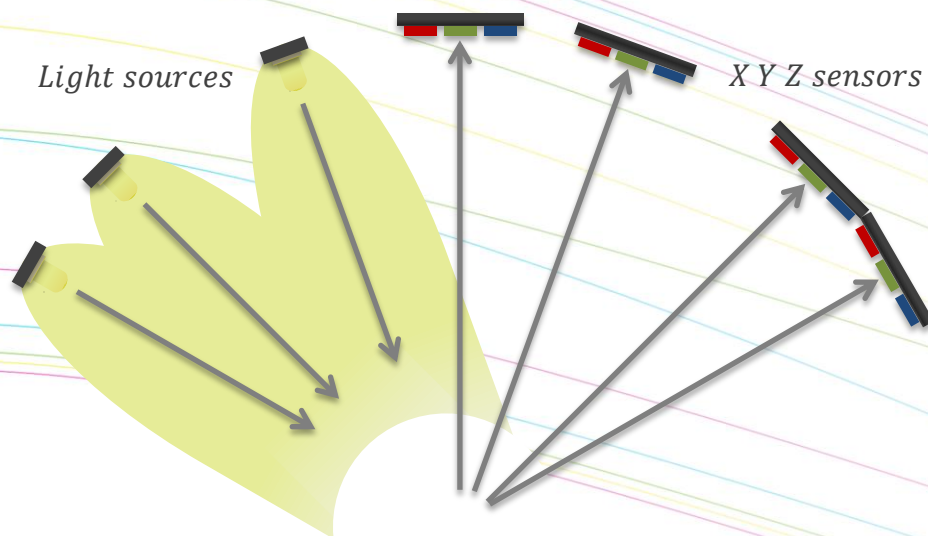


Fig 2 20-45-60 multi degree measurement principle.



Typical spectral sensitivity of Vates colorimeter

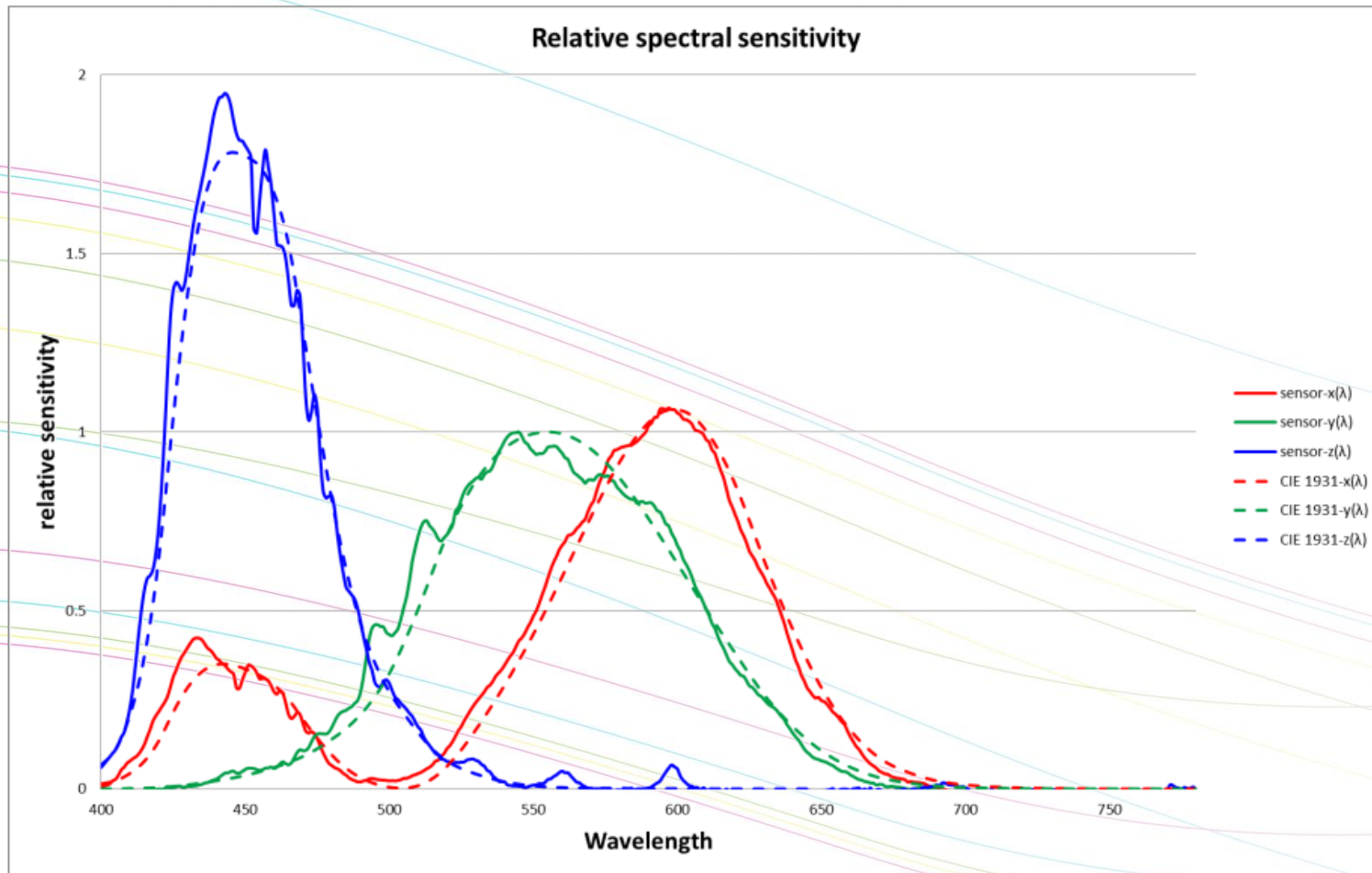


Fig 3 Spectral sensitivity of the Arges colorimeter.

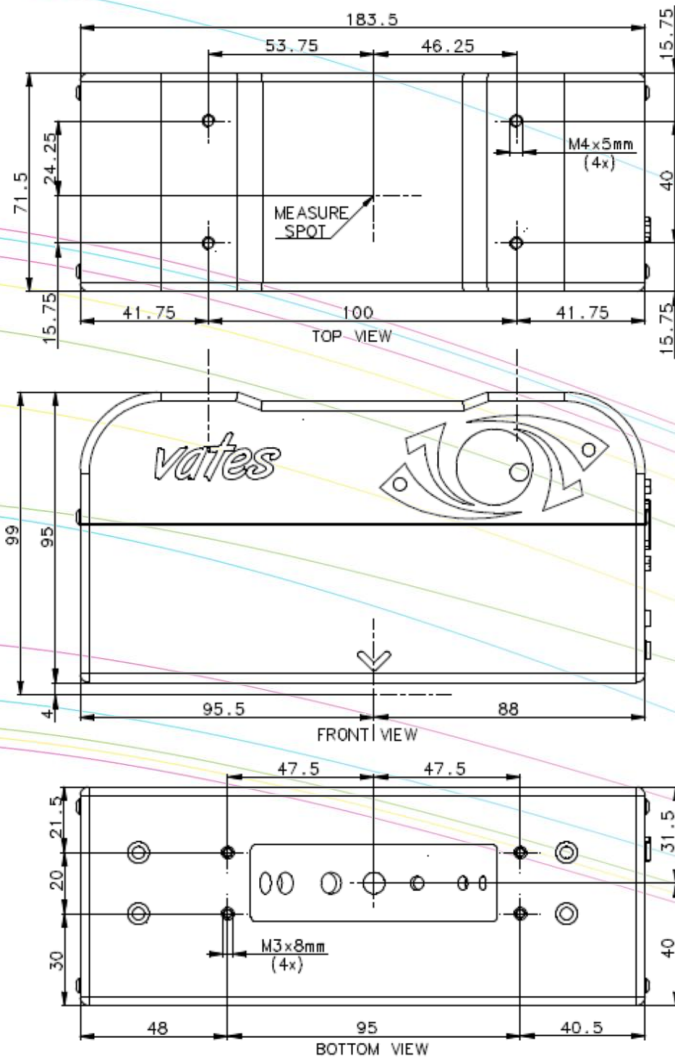
Vates colorimeter specifications

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		



Vates dimensions



Admesy B.V.
Branskamp 5
6014 CB Ittervoort
The Netherlands

T +31 (0)475 600 232
F +31 (0)475 600 316

www.admesy.com
info@admesy.com

The material in this document is subject to change. No rights can be derived from the content of this document. All rights reserved. No part of this document may be reproduced, stored in a database or retrieval system, or published in any form or way, electronically, mechanically, by print, photo print, microfilm or any other means without prior written permission from the publisher.

