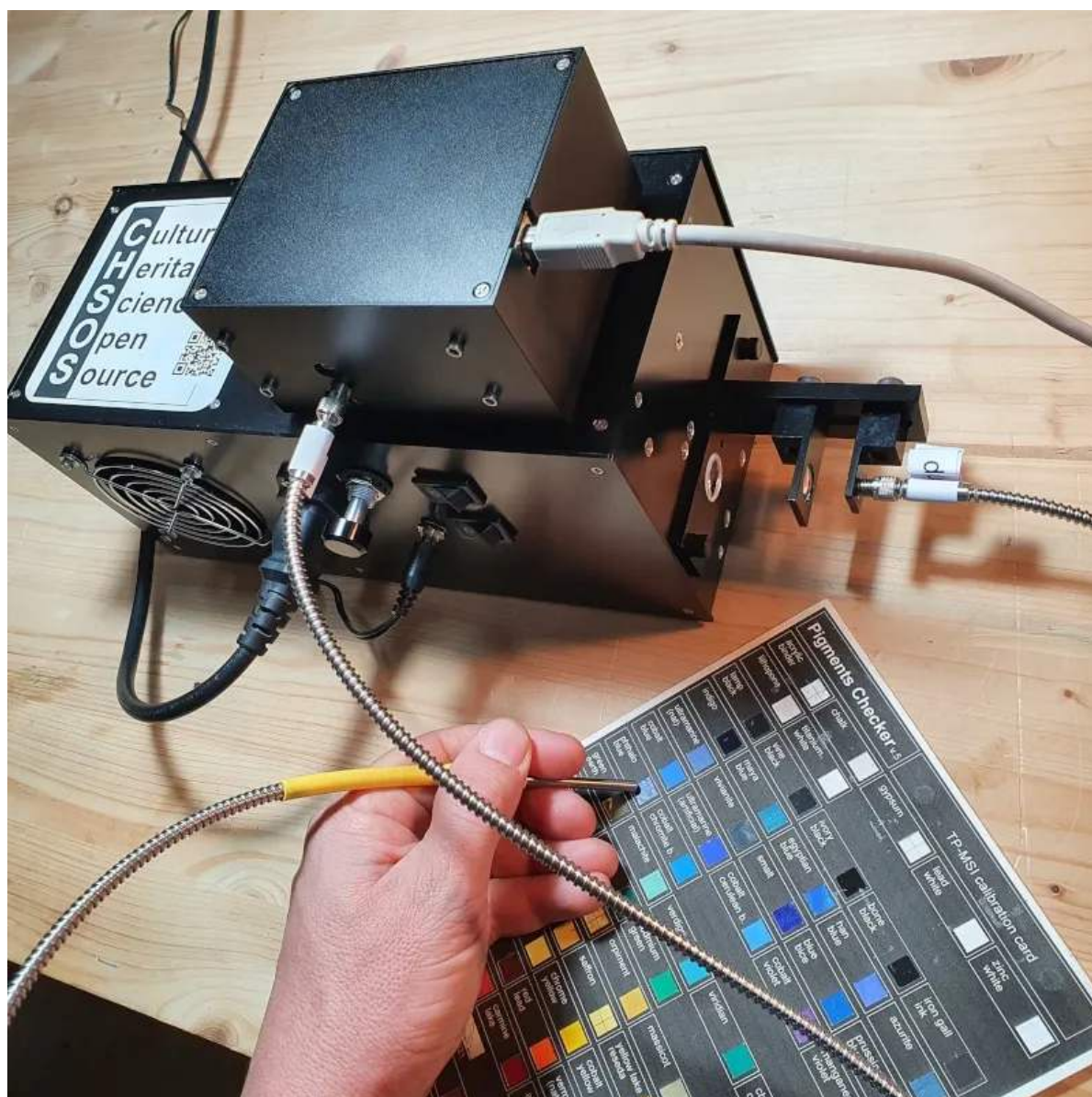


GorgiasUV Spectrometer

GorgiasUV – Reflectance Spectrometer –
Cultural Heritage Science Open Source

Antonino Cosentino



[GorgiasUV](#)

5.570,00€

The Reflectance Spectrometer GorgiasUV is based on the standard [Gorgias](#) system but it is optimized to cover a wider range into the UV, up until 200 nm.

GorgiasUV explores with much more reliability the extreme part of the UV spectrum, providing helpful information for pigments identification.

Used from the late 80' Reflectance Spectroscopy ([RS](#)) is a powerful tool for the identification of pigments and dyes. A reflectance spectrum shows for each wavelength, the ratio between the intensity of the reflected light and the incident light. This ratio is called reflectance and is given in percentage (%). Pigments are identified using a spectral database and comparing the spectral features of the investigated unknown spectrum with the spectra available in the database.

The advantages of this method with respect to the other spectroscopic methods are that the equipment is affordable, small, and portable.

Along with the usual halogen lamp, GorgiasUV features a Deuterium light source and a dedicated solarization-resistant fiber probe to effectively work within the UV range.

Technical specifications

Spectrometer

Weight: 430 grams

Dimensions: 102 mm x 84 mm x 59 mm

Detector: Toshiba TCD1304DG linear array (no interference pattern)

Detector spectral range: 300 – 1000 nm (100 microns slit)

Pixels: 3648

Pixel size: 8 μ m x 200 μ m

Pixel well depth: 100,000 electrons

Signal-to-noise ratio: 400:1 (10000:1 with averaging)

A/D resolution: 16 bit

Fiber optic connector: SMA 905 to 0.22 numerical aperture single-strand optical fiber.

Diffraction order sorting filter: included

Exposure time: 10 μ s – 60 s

CCD reading time: 14 ms

Power consumption: 100mA @ 5V from USB interface

Onboard memory capacity: 64 spectra

Data transfer speed: 200 ms / 100 ms (2 points binding)

Computer interface: USB 2.0, HID 2.0

Operational system: Windows 10 / Windows 8 / Windows 7 / Vista / XP ; 32/64b

Software: application software, driver,

Hardware: USB cable

Reflection fiber probe

Stainless steel tubing for extra strength. 7 x 600 microns core fibers (6 excitation fibers, 1 collection fiber). It is 1 meter long and it has a 45 degr. adapter for reflectance measures.

Light Source

Along with the usual halogen lamp as in standard Gorgias, GorgiasUV features a Deuterium radiation source and a dedicated solarization-resistant fiber probe to effectively work within the UV range.

Pigments Spectra Database

Our spectral database acquired on [Pigments Checker](#).

DOWNLOAD

[Reflectance Spectroscopy \(200-1000 nm\) \(GorgiasUV\) Pigments-Checker Database](#)

Application note # 1: Testing GorgiasUV on Pigments Checker

This note discusses the advantages of GorgiasUV over the standard Gorgias by testing the 2 instruments on the Pigments Checker, our collection of historical pigments.

[DOWNLOAD Application note #1: Testing GorgiasUV on Pigments Checker](#)