

### Specifications of the GL Halogen Gem Holder

The unique GL Halogen 10W Gem Holder (VIS-NIR, optimized for 400 - 950 nm) with built-in cosine corrector and extra SMA905 port, is mounted directly onto the spectrometer allowing fast real-time spectral analysis and bulk testing of both rough and faceted gemstones. For work with darker gems and diamonds, larger samples and gems set in jewellery we recommend the GL Xenon Flashlight setup.

### Product Description

Portable GL Gem Spectrometer system with above gem holder, USB cable, 12 Volt power supply (110 – 240 V, includes international adaptor plugs), software with single user license, operating guide and reference materials, "Pragmatic Spectroscopy for Gemologists 2nd edition", access to selectable data-bases with up to 300 reference spectra (including PL) and 100 image on-line gallery.

**Price for 2023/24: US\$ 2,195.00**

*For further information contact:*

**Gemlab Research & Technology**

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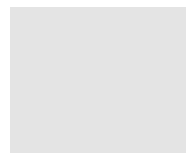
[www.gemlab.ws](http://www.gemlab.ws)



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TO:



## GL Gem Spectrometer™ UV- VIS-NIR, 300 – 1,000 nm

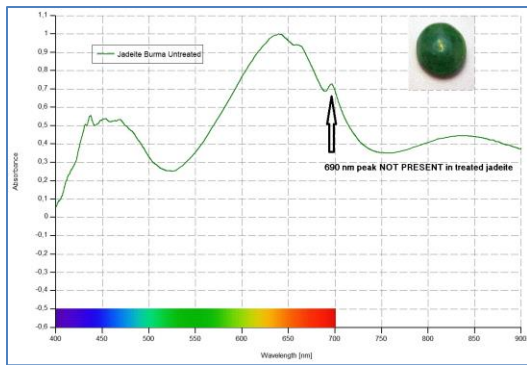
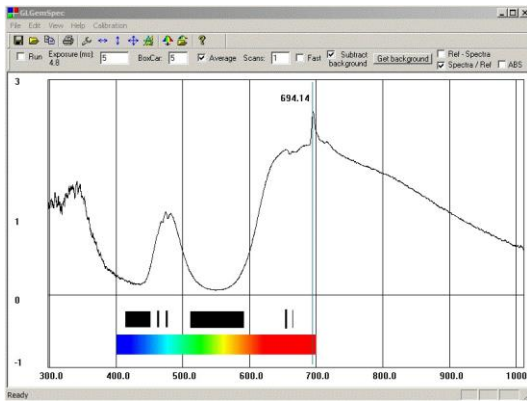
The GL Gem Spectrometer is an innovative tool for gem dealers, mineral collectors, gemmologist appraisers and geoscience applications. It replaces the traditional hand-held spectroscope protecting from potential eye damage when using strong halogen light; it is portable and can be operated from the USB port of a laptop/tablet computer.

It is a low cost diamond testing tool as it is capable to detect the Cape lines (98% of natural diamonds are Type Ia), the GR-1 band of irradiated diamonds, the Si center often seen in CVD grown diamonds (in some cases without LN cooling), possible HPHT treatments, whether green jadeite is naturally coloured or spinel is synthetic or heat treated and much more.

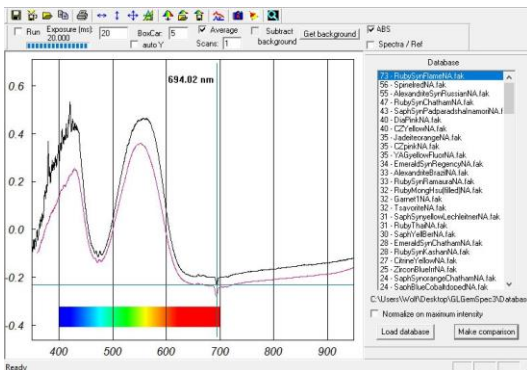
With software integrated searchable spectral library



# Now with integrated fast search spectral library of over 250 gem references of Gemstones, Diamonds (incl. treatments) and PL405



Jadeite, Burma – naturally coloured with typical absorption lines at 437, 630, 655 and 690 nm



The GL Gem Spectrometer measures transmittance (NOT absorbance or absorption) although the spectra can be converted in real-time with the software or edited.

It will require some practice and re-thinking to set the proper parameters and to analyze the obtained spectra. Spectra obtained with the GL Gem Spectrometer (see left image with flame fusion ruby) look different from spectra seen through a traditional hand-held spectroscope.

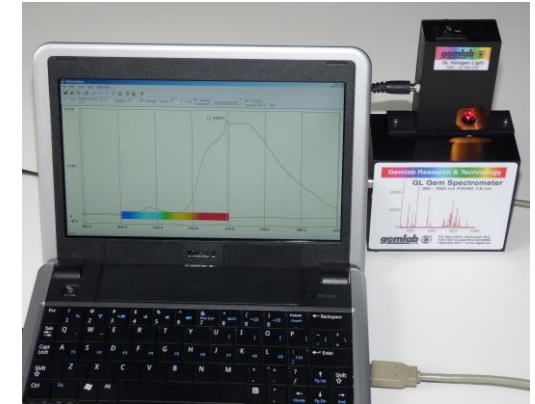
For example, if transmission for certain wavelengths (in nm) is LOW absorbance for those wavelengths will be HIGH (in a conventional spectroscope one would see dark lines or bands at these positions).

For photo-luminescence studies (PL spectroscopy) we recommend the GL Analyzer PL405 Kit which provides a blue laser (405 nm) and necessary accessories.

## Specifications of the GL Gem Spectrometer™

- Weight: 510 grams
- Dimensions: 170 mm x 100 mm x 50 mm
- Detector: Toshiba TCD1304DG linear array
- 200 – 1100 nm, 3648 pixels CCD
- Signal-to-noise ratio: 500:1 A/D resolution: 16
- Range 300-1000 nm < **1.5 nm resolution**
- Exposure time: 2.5 ms-10 s CCD reading time: 14 ms
- Data transfer speed: 200 ms / 100 ms (2 points binding)
- Diffraction order sorting filter built-in**
- Power consumption: 200mA @ 5V from computer interface:
- USB 2.0, HID 2.0
- Operational system: Windows XP/Windows 7 /8 /10 32/64 bit

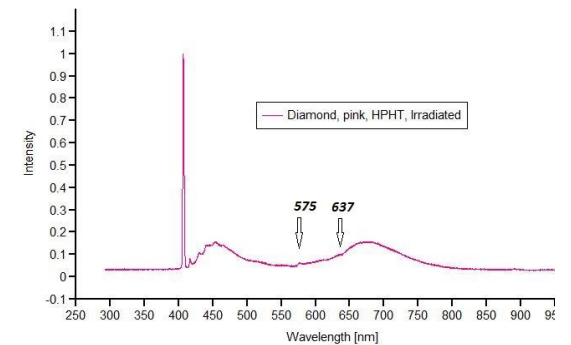
Upgraded model with new motherboard and “Point & Shoot” software (version 3.4).



## Support Material

The package comes with a support CD (including video) for proper operation of the GL Gem Spectrometer.

Using a fiber probe instead of the GL Gem Light Holder requires a customized setup with special external lighting and will change several parameters for obtaining a spectrum. Results may vary dependent on light source and its position, sample size (affecting path length) and orientation, etc.



Pink Diamond, HPHT treated, irradiated using the optional GL Analyzer PL405 kit (blue laser) at room temperature