Research & Technology

Introducing the GL Gem Spectrometer™

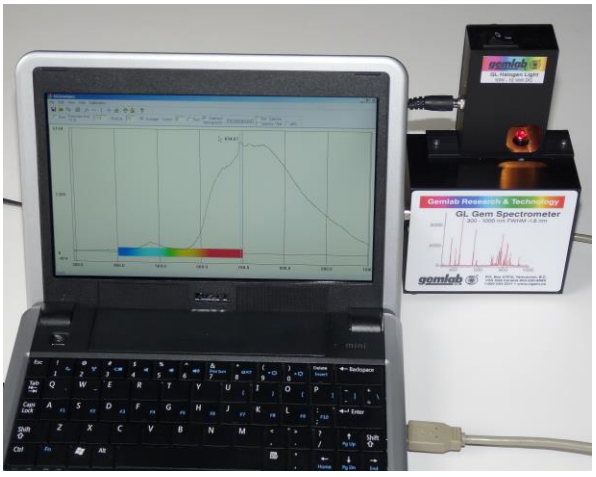
GL Gem Spectrometer™ System

We are proud to offer this economically priced and portable spectrometer (UV-VIS-NIR, 300 – 1,000 nm) which can be operated from the USB port of a laptop computer.

No additional drivers are necessary; the easy to learn GLGemSpec (version 3.x) software displays both absorbance and transmittance spectra.

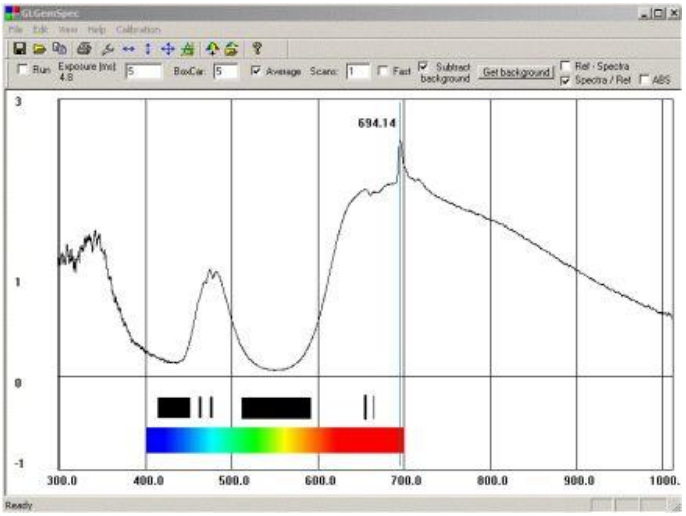
The GL Gem Spectrometer™ system is an innovative tool for gemmologists, jewellers, gem merchants, mineral collectors and others. It replaces the traditional hand-held spectroscope and avoids potential eye damage if the latter is used with a strong incandescent light source.

It is probably the most important 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..

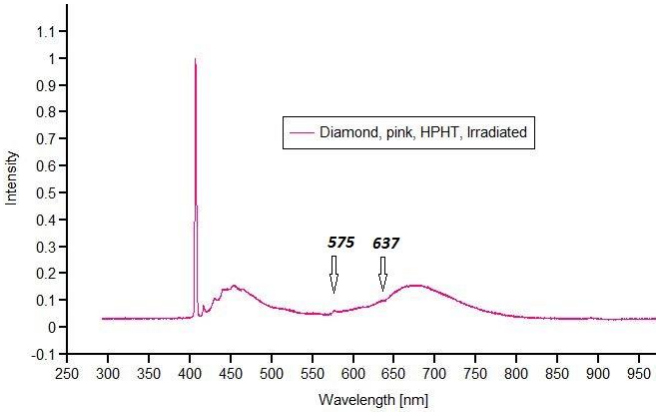


It measures transmittance (NOT absorbance or absorption) although the spectra can be converted in real-time with the software or edited.

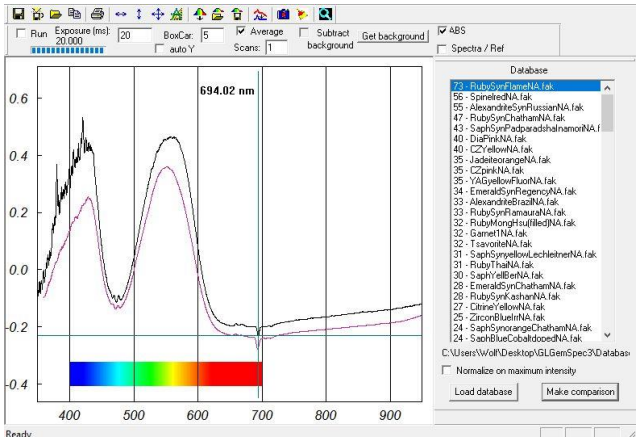
It will require some practice and re-thinking to set the proper parameters and to analyze the obtained spectra.



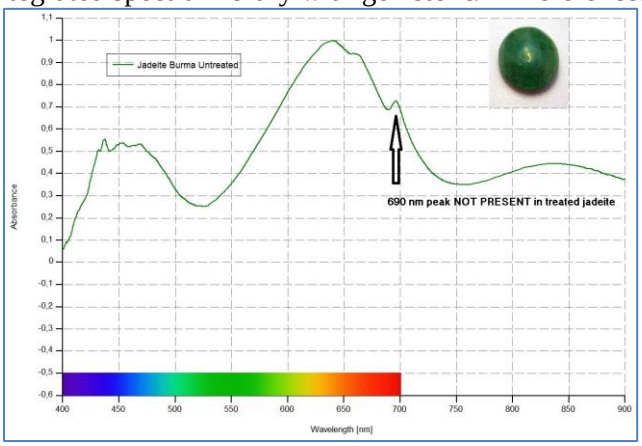
Spectra obtained with the GL Gem Spectrometer (see above flame fusion ruby) look different from spectra seen through a traditional hand- held spectroscope; for example if transmission for certain wavelengths (in nm) is LOW absorbance for those wavelengths will be HIGH (in a conventional spectroscope one would see dark lines or bands at these positions).



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



Integrated spectral library with gemstone/PL references



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

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

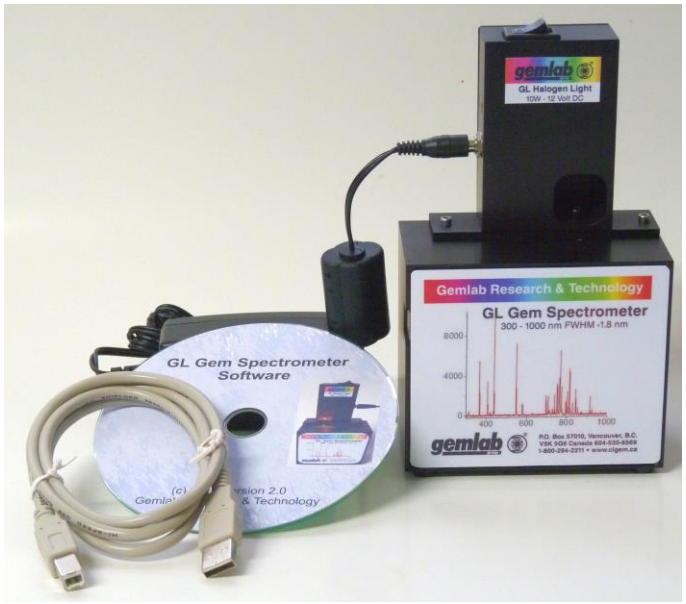
Specifications of the GL Halogen Gem Holder

GL Halogen 10W Gem Holder with built-in cosine corrector and extra SMA905 port, cooling fan, includes 12/15 V power adaptor. Similar to an integration sphere the built-in halogen light source is internally diffused by the holder's black matte finish; the GLGemSpec software optimizes the spectrometer system for the important VIS-NIR 400 – 950 nm range.

Measurements: 75 x 50 x 27 mm; weight 80 gr; spectral range (300 – 1000 nm) depending on bulb used - Size of opening: 20 x 20 mm

Portable GL Gem Spectrometer system with GL Halogen 10W Gem Holder, USB cable, 12 Volt power supply for light holder (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 2018: US$ 1,795.00



Optional Accessories
GL Analyzer PL405 Kit and GL Fiber Probe

For more info or to order call (604) 530-8569 or visit the on-line store at www.cigem.ca/store/instruments;

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