Improved TE Cooling Design for eXtended InGaAs

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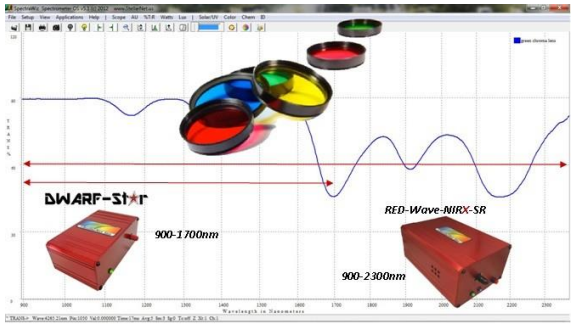
Improvements to the thermo-electric (TE) cooling design on StellarNet's extended range NIR spectrometers is providing significant performance advantages increasing signal to noise and expanding applications.

StellarNet's NIR spectrometers use InGaAs photo diode array detectors which have typically showed optimum detection capabilities in the range 0.9-1.7um. Unfortunately, the extended range detectors from 0.9-2.3um are much more difficult to fabricate, are more expensive, and often suffer in performance being less sensitive and significantly more noisy. Therefore the extended range RED-Wave-NIRX-SR is typically recommended for bright light applications such as laser measurement, absorption & transmission spectroscopy and really any application where the exposure time can be kept low.

Design enhancements increase air flow and utilize a specialized heat sink for added stability and cool operation. RED-Wave-NIRX-SR spectrometers can now achieve signal to noise ratios as good as 12,000:1 with 100ms exposures. The decreased background noise provides better sensitivity and usability with NIR spectroscopy applications including those in the following industries: Food and beverage, oil and gas, pharmaceutical, plastics and recycling, laser characterization, etc.



Spec Sheet