



NIR Hyperspectral Imaging Using Image Multispectral Sensing IMSS

Pacific Advanced Technology

The IMSS instrument is a dispersive type hyper-spectral imaging spectrometer which uses a new and innovative patented approach invented by Pacific Advanced Technology (PAT). This technology provides a very rugged, portable infrared imaging spectrometer with hyper-spectral resolutions on the order of $0.003 \mu\text{m}$. PAT offers A model of the NIR IMSS infrared hyper-spectral imaging-systems that can interface with a standard NIR camera such as the Indigo NIR Merlin. The system uses an $f/3$ diffractive lens with a nominal focal length of 75 mm. Because of the robust, lightweight and compact nature of the IMSS hyper-spectral imaging lens system, it can easily be used on airborne platforms for multiple applications such as collection of signatures of targets and backgrounds, threat warning, surveillance, clutter rejection, target identification, pollution monitoring and drug interdiction.

ABOUT THE TECHNOLOGY

The IMSS exploits advanced technology in diffractive optics and image signal processing. It images a scene and measures the spectral and radiometric content of all objects within the scene. While other spectral imaging devices have complex optics and alignment requirements, the PAT IMSS uses a simple optical design eliminating complex alignment requirements. PAT also offers a visible version of the hyperspectral system as well as both MWIR and LWIR version.

NIR IMSS

Spectral Range	0.9 to 1.6 μm
Nominal Spectral Resolution	0.24% $\Delta\lambda/\lambda$ (0.003 μm at 1.25 μm)
F number	$f/3$ at 1.25 μm
Focal Length	75 mm at 1.25 μm

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