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DESIGN OF A HYPERSPECTRAL IMAGER USING COTS OPTICS FOR SMALL SATELLITE APPLICATIONS

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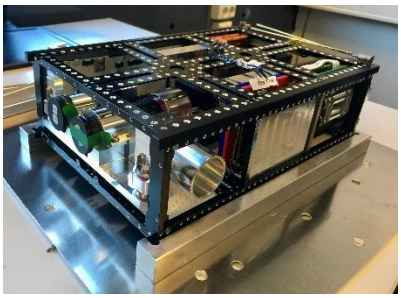

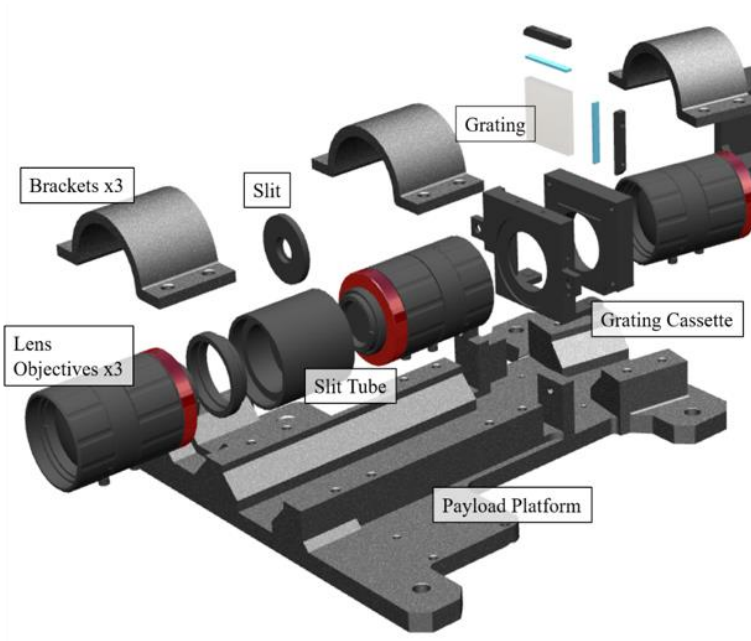

Performance at 500 km altitude; observing open ocean water

Slit width	$w = 50\ \mu$m
Pixels per BP (rounded up)	$n_x = 9$
Along-track optical resolution, δx	500 m
Cross-track spatial resolution, $\Delta y = \delta y$	58.63 m
Along-track spatial resolution at nadir, Δx	728 m
Swath Width	70 km
Bandpass, BP	3.33 nm
SNR @ 500 nm with $b_x^* = n_x, b_y^* = 1$	299.5

*b_x, b_y = binning operations

Presenting a transmission grating hyperspectral imager for 6U cubesats. The design utilizes COTS optical components to observe in the VIS-NIR (124 spectral bands with a FWHM of 3.33 nm). More details on the imager, preparing COTS optics for space, and some example component trade-offs can be found in the paper.