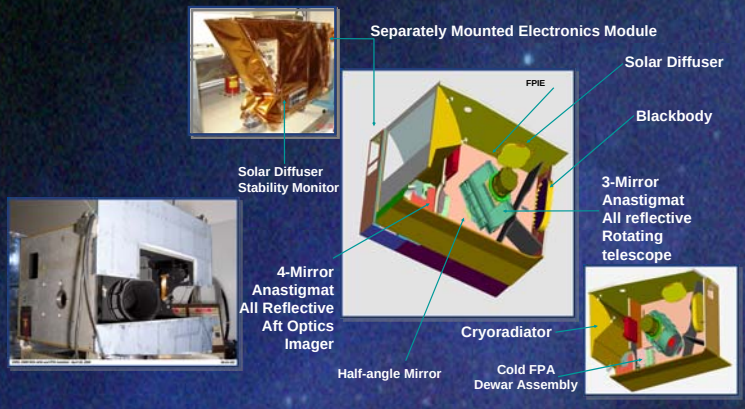
Visible/Infrared Imager/Radiometer Suite

VIIRS OVERVIEW

The Visible/Infrared Imager/Radiometer Suite collects visible/infrared imagery and radiometric data. Data types include atmospheric, clouds, earth radiation budget, clear-air land/water surfaces, sea surface temperature, ocean color, and low light visible imagery. Primary instrument for satisfying 22 environmental data records (EDRs).



Specifications

Multiple VIS and IR channels between 0.3 and 14 microns

Imagery Spatial Resolution: ~400m @ NADIR / 800m @ EOS

Heritage

- POES - Advanced Very High Resolution Radiometer (AVHRR/3)
- DMSP - Operational Linescan System (OLS)
- EOS - Moderate Resolution Imaging Spectroradiometer (MODIS)
- NPP - Early validation of operational instrument and algorithms

VIIRS Key Characteristics and Performance

Spectral Bands:
- Visible/ Near IR: 9 plus Day/Night Band
- Mid - Wave IR: 8
- Long - Wave IR: 4

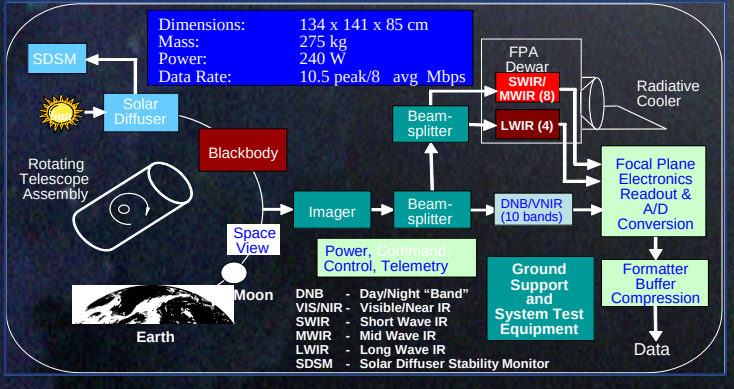
Imaging Optics: 18.4 cm Aperture, 114 cm Focal Length

Band - to- Band Registration (All Bands, Entire Scan) > 80% per Axis

Orbital Average Power: 240 Watts

Mass: 275 Kg

VIIRS Sensor Photons In to Data Out



VIIRS Sensor Bands

		Band No.	Wave-length (μm)	Horiz Sample Interval (km Downtrack x Crosstrack) Nadir	Horiz Sample Interval (km Downtrack x Crosstrack) End of Scan	Driving EDRs	Radi-ance Range	Ltyp or Ttyp
VIS/NIR FPA	Silicon PIN Diodes	M1	0.412	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	44.9 155
		M2	0.445	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	40 146
		M3	0.488	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	32 123
		M4	0.555	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	21 90
		I1	0.640	0.371 x 0.387	0.80 x 0.789	Imagery	Single	22
		M5	0.672	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	10 68
		M6	0.746	0.742 x 0.776	1.60 x 1.58	Atmospheric Corr'n	Single	9.6
		I2	0.865	0.371 x 0.387	0.80 x 0.789	NDVI	Single	25
		M7	0.865	0.742 x 0.259	1.60 x 1.58	Ocean Color Aerosols	Low High	6.4 33.4
CCD		DNB	0.7	0.742 x 0.742	0.742 x 0.742	Imagery	Var.	6.70E-05
SMWIR	PV HgCdTe (HCT)	M8	1.24	0.742 x 0.776	1.60 x 1.58	Cloud Particle Size	Single	5.4
		M9	1.378	0.742 x 0.776	1.60 x 1.58	Cirrus/Cloud Cover	Single	6
		I3	1.61	0.371 x 0.387	0.80 x 0.789	Binary Snow Map	Single	7.3
		M10	1.61	0.742 x 0.776	1.60 x 1.58	Snow Fraction	Single	7.3
		M11	2.25	0.742 x 0.776	1.60 x 1.58	Clouds	Single	0.12
		I4	3.74	0.371 x 0.387	0.80 x 0.789	Imagery Clouds	Single	270 K
		M12	3.70	0.742 x 0.776	1.60 x 1.58	SST	Single	270 K
		M13	4.05	0.742 x 0.259	1.60 x 1.58	SST Fires	Low High	300 K 380 K
LWIR	PV HCT	M14	8.55	0.742 x 0.776	1.60 x 1.58	Cloud Top Properties	Single	270 K
		M15	10.763	0.742 x 0.776	1.60 x 1.58	SST	Single	300 K
		I5	11.450	0.371 x 0.387	0.80 x 0.789	Cloud Imagery	Single	210 K
		M16	12.013	0.742 x 0.776	1.60 x 1.58	SST	Single	300 K