

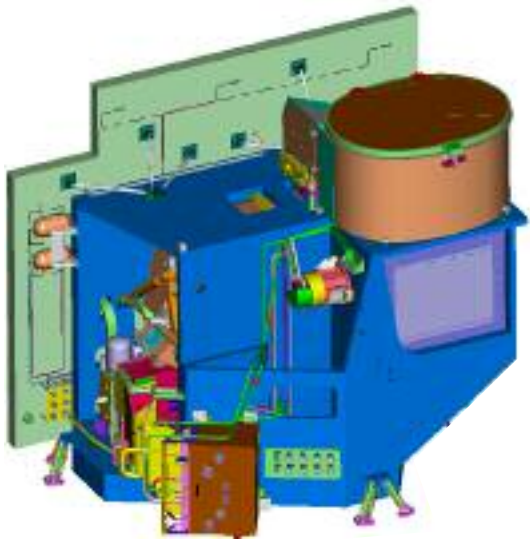


# ITT

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## Next Generation Imager GOES-R Imager

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ITT's GOES-R Imager represents a significant advancement in performance over the current generation of geostationary imagers in use by the National Weather Service. Beginning with the GOES-R launch in 2015, the GOES-R Imager will provide scientists and meteorologists with additional, and improved data, faster than ever before. With GOES-R Imager, ITT continues its proud heritage of helping NOAA save lives and property by supplying world class remote sensors.

GOES-R Imager will be a mission critical payload on GOES-R, providing over 65% of all the mission data products currently defined. Its advanced design will provide users with twice the spatial resolution, six times the scan rate, and more than three times the number of spectral channels compared to the current GOES Imager. These improvements will allow tomorrow's meteorologists and climatologists to significantly improve the accuracy of their products, both in forecasting and nowcasting.

The GOES-R Imager's highly reliable design, based on ITT's 40 years of experience in producing geostationary imaging radiometers, will provide an invaluable tool to weather professionals for years to come.

### Key Features

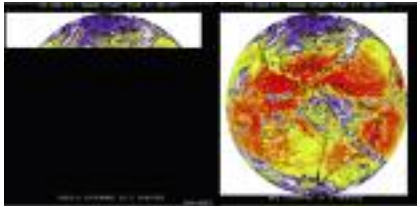
<b>Application</b>	Operational atmospheric and surface imagery
<b>Satellites</b>	GOES-R
<b>Orbit</b>	Geosynchronous
<b>Aperture</b>	27 cm
<b>Spatial Resolution</b>	0.5, 1.0, and 2.0 km at nadir
<b>Scan Method</b>	Raster scan
<b>Sensitivity</b>	300 SNR, 0.1 K NE $\Delta$ T (0.3 K for 13.3 $\mu$ m channel)
<b>Detector Cooling</b>	Active cooler
<b>Detectors</b>	Linear arrays

# Specifications

## GOES-R Imager

Channel	Channel Band/ $\mu\text{m}$			Upper Limit of Dynamic Range	NEDT / SNR
	Center $\lambda$	Min $\lambda$	Max $\lambda$		
1	0.47	0.45	0.49	652 W/m <sup>2</sup> /sr/ $\mu\text{m}$	300:1 <sup>(2)</sup>
2	0.64	0.59	0.69	515 W/m <sup>2</sup> /sr/ $\mu\text{m}$	300:1 <sup>(2)</sup>
3	0.865	0.8455	0.8845	305 W/m <sup>2</sup> /sr/ $\mu\text{m}$	300:1 <sup>(2)</sup>
4	1.378	1.3705	1.3855	114 W/m <sup>2</sup> /sr/ $\mu\text{m}$	300:1 <sup>(2)</sup>
5	1.61	1.58	1.64	77 W/m <sup>2</sup> /sr/ $\mu\text{m}$	300:1 <sup>(2)</sup>
6	2.25	2.225	2.275	24 W/m <sup>2</sup> /sr/ $\mu\text{m}$	300:1 <sup>(2)</sup>
7	3.9	3.8	4	400K	0.1K <sup>(3)</sup>
8	6.185	5.77	6.6	300K	0.1K <sup>(3)</sup>
9	6.95	6.75	7.15	300K	0.1K <sup>(3)</sup>
10	7.34	7.24	7.44	320K	0.1K <sup>(3)</sup>
11	8.5	8.3	8.7	330K	0.1K <sup>(3)</sup>
12	9.61	9.42	9.8	300K	0.1K <sup>(3)</sup>
13	10.35	10.1	10.6	330K	0.1K <sup>(3)</sup>
14	11.2	10.8	11.6	330K	0.1K <sup>(3)</sup>
15	12.3	11.8	12.8	330K	0.1K <sup>(3)</sup>
16	13.3	13	13.6	305K	0.3K <sup>(3)</sup>

<sup>(2)</sup> 100% albedo <sup>(3)</sup> 300 K scene



Comparison of coverage between the current imager (left) and the GOES-R Imager (right) for five minutes demonstrating the 6x coverage rate improvement. (Image courtesy of University of Wisconsin)

### Imager Provides Flexibility for Any Collection Scenario.

The GOES-R Imager will acquire concurrently:

- Full disks at 5 or 15 minute intervals
- CONUS images at 5 minute intervals
- A Mesoscale image at 30 second intervals
- Any other observations required to meet radiometric and INR requirements
- Data rate: 66.6 Mbps – CCSDS packets, lossless (Rice) compression
- Calibration:
  - Solar: 3% absolute, 0.5% drift, 0.2% cal-to-cal repeatability
  - Emissive: 1K absolute

ITT provides a full range of remote sensing and GPS navigation solutions. For further information, contact us at:

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