



IMAGING

Advanced Baseline Imager

"Colloquial" channel name	Applications
Blue	aerosol, surface features
Green	aerosol, vegetation
Red	fog, insolation, winds
Veggie	vegetation, winds
Low-Level WV	water vapour, winds
Cirrus	thin cirrus
NIR Phase	cloud phase, snow/ice
Particle Size	particle size, vegetation
Fire	microphysics, fires
Upper-Level WV	WV, winds, rainfall
Mid-Level WV	WV, winds, rainfall
Lower-Level WV	WV, winds, SO2
Cloud-Top Phase	cloud phase, SO2
Ozone	total O3, turbulence
Clean IR	SST, clouds temp
IR Longwave	SST, clouds temp, rainfall
Dirty IR	TPW, dust, ash
CO2	air temp, cloud height

Ch. No.	Central λ (μm)	λ width (μm)	Resolution (km)
1	0.47	0.04	1.0
2	0.64	0.10	0.5
3	0.86	0.04	1.0
4	1.38	0.02	2.0
5	1.61	0.06	1.0
6	2.25	0.05	2.0
7	3.90	0.20	2.0
8	6.19	0.80	2.0
9	6.95	0.40	2.0
10	7.34	0.20	2.0
11	8.50	0.40	2.0
12	9.61	0.40	2.0
13	10.35	0.50	2.0
14	11.20	0.80	2.0
15	12.30	1.00	2.0
16	13.30	0.60	2.0

Flexible Combined Imager

Ch. No.	Central λ (μm)	λ width (μm)	Resolution (km)
1	0.44	0.06	1.0
2	0.51	0.04	1.0
3	0.64	0.05	1.0 (*0.5)
4	0.86	0.05	1.0
5	0.91	0.02	1.0
6	1.38	0.03	1.0
7	1.61	0.05	1.0
8	2.25	0.05	1.0 (*0.5)
9	3.80	0.40	2.0 (*1.0)
10	6.30	1.00	2.0
11	7.35	0.50	2.0
12	8.70	0.40	2.0
13	9.66	0.30	2.0
14	10.50	0.70	2.0 (*1.0)
15	12.30	0.50	2.0
16	13.30	0.60	2.0

Advanced Himawari Imager

Ch. No.	Central λ (μm)	λ width (μm)	Resolution (km)
1	0.47	0.05	1.0
2	0.51	0.02	1.0
3	0.64	0.03	0.5
4	0.86	0.02	1.0
5	1.61	0.02	2.0
6	2.25	0.02	2.0
7	3.88	0.22	2.0
8	6.24	0.37	2.0
9	6.94	0.12	2.0
10	7.34	0.17	2.0
11	8.59	0.32	2.0
12	9.64	0.18	2.0
13	10.40	0.30	2.0
14	11.23	0.20	2.0
15	12.38	0.30	2.0
16	13.28	0.20	2.0

	Proxy instruments - λ(μm) / Res (km)			
SEVIRI	MODIS	VIIRS	SLSTR	
-	0.44/1.0	0.45/0.75	-	-
-	0.55/0.5	0.55/0.75	0.55/0.5	-
0.64/3.0	0.65/0.25	0.64/0.375	0.67/0.5	-
0.81/3.0	0.86/1.0	0.87/0.375	0.86/0.5	-
-	0.91/1.0	-	-	-
-	1.38/1.0	1.38/0.75	1.38/0.5	-
1.64/3.0	1.64/0.5	1.61/0.375	1.61/0.5	-
-	-	2.25/0.75	2.25/0.5	-
3.92/3.0	3.75/1.0	3.74/0.375	3.74/1.0	-
6.25/3.0	-	-	-	-
-	6.72/1.0	-	-	-
7.35/3.0	7.33/1.0	-	-	-
8.70/3.0	8.55/1.0	8.55/0.75	-	-
9.66/3.0	9.73/1.0	-	-	-
10.8/3.0	11.0/1.0	10.8/0.75	10.8/1.0	-
-	-	11.5/0.375	-	-
12.0/3.0	12.0/1.0	12.0/0.75	12.0/1.0	-
13.4/3.0	13.3/1.0	-	-	-



Mode	Full disc	Continental US (CONUS)	Mesoscale	Full disc	Rapid Scan	Japan region	Target area	Landmark area / x2
✓	15 min	5000 x 3000 km	1000 x 1000 km	10 min	LAC 4 (top disc quarter)	2000 x 1000 km	1000 x 1000 km	1000 x 500 km
0.5 - 2.0 km	0.5 - 2.0 km	0.5 - 2.0 km	0.5 - 2.0 km	1.0 - 2.0 km	0.5 - 1.0 km	0.5 - 2.0 km	0.5 - 2.0 km	0.5 - 2.0 km

Flex Mode: The flex mode provides a full disk scan every 15 minutes, a CONUS every 5 minutes, and two mesoscale every 60 seconds (or one sub-region every 30 seconds).

* The channels VIS 0.6, NIR 2.2, IR 3.8 and IR 10.5 are delivered in advanced resolution in the rapid sampling configuration.



	Pioneer instrument - LIS	Geostationary Lightning Mapper	Lightning Imager	Lightning Mapping Imager	Ground network - GLD360
Platform	TRMM/ISS	GOES-16	MTG-I	Feng-Yun-4	~
Orbit	LEO	GEO	GEO	GEO	~
Description	CCD camera operating at 777.4 nm (O2) to count flashes and measure their intensity	CCD camera operating at 777.4 nm (O2) to count flashes and measure their intensity	CCD camera operating at 777.4 nm (O2), flash counts and intensity measurement. Detection efficiency > 90 % for events of 10 μm-2-sr-1 at 45° (day), 4 μm-2-sr-1 (night). FAR < 2 s-1	CCD camera operating at 777.4 nm (O2) to count flashes and measure their intensity	A network of sensors operating in the Very Low Frequency (VLF) band and measuring horizontal magnetic fields of radio impulses generated by return strokes and large cloud pulses.
Scanning technique	Pushbroom, matrix array of 128 x 128 detectors, swath 600 km; each earth location observed continuously (every 2 ms) for about 90 s	Electronic, 3-axis stabilised satellite, single detector matrix	Electronic, 3-axis stabilised satellite, single detector matrix	Electronic, 3-axis stabilised satellite, single detector matrix	Fixed location, ground-Based detectors
Resolution	4 km	8 km at s.s.p. (sub-satellite point)	10 km	7.8 km at s.s.p.	2-3 km
Coverage /Cycle	Passes at ~ 100-min intervals with longer gaps once or twice per day. More regular coverage at 15°N and 15°S. On ISS: latitude coverage extended to 51.6°	Large fraction of the disk continuously observed (time resolution 2 ms)	Full disk continuously observed (time resolution ~ 2 ms)	Full disk continuously observed (time resolution ~ 2 ms)	Global



	Proxy instrument - IASI	Proxy instrument - CrIS	Infra-Red Sounder	Geostationary Interferometric IRS
Platform	EPS-A/B/C	NOAA-20	MTG-S	Feng-Yun-4
Orbit	LEO	LEO	GEO	GEO
Description	Interferometer with 8461 channels, with one embedded IR imaging channel	Interferometer with three IR bands, 1305 channels in initial operation mode. Future operation mode will have 2211 channels with the same full spectral resolution in all three bands.	Interferometer with large detector arrays for simultaneous sounding of more pixels	MWIR/TIR interferometer with large detector arrays for simultaneous sounding of more pixels. 913 channels on the first flight unit, 1188 on follow-on flight units.
Scanning technique	Cross-track: 30 steps of 48 km ssp, swath 2130 km - Along-track: one 48-km line every 8 s	Cross-track: 32 steps of 48 km s.s.p., swath 2200 km - Along-track: one 48-km line every 8 s	Mechanical, bi-axial, 3-axis stabilised satellite, step-and-dwell of a detector matrix	Mechanical, bi-axial, 3-axis stabilised satellite, step-and-dwell of a detector matrix.
Resolution	4 x 12-km IFOV close to the centre of a 48 x 48 km2 cell (average sampling distance: 24 km)	3 x 3 14 km IFOV covering a 48 x 48 km2 cell (average sampling distance: 16 km)	4.0 km	Prototype flight 16 km, follow-on 8 km, at s.s.p.. Supporting VIS: 2 km at s.s.p.
Coverage /Cycle	Near-global coverage twice/day	Near-global coverage twice/day	Full disk in 60 min. Limited areas in correspondingly shorter time intervals	China area (5000 km x 5000 km) in 67 min. Mesoscale area (1000 km x 1000 km) in 35 min