WORLDVIEW-3

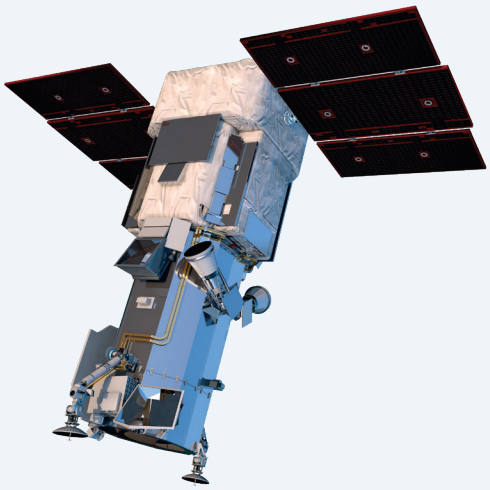
WorldView-3 is the industry's first multi-payload, super-spectral, high-resolution commercial satellite. Operating at an altitude of 617 km, WorldView-3 provides 31 cm panchromatic resolution, 1.24 m multispectral resolution, 3.7 m short-wave infrared resolution, and 30 m CAVIS resolution. WorldView-3 has an average revisit time of less than one day and is capable of collecting up to 680,000 sq km per day, further enhancing the Maxar collection capacity for more rapid and reliable collection.

Features

- Very high resolution
- Panchromatic 31 cm
- Visible & near-infrared 1.24 m
- Short-wave infrared 3.7 m
- CAVIS 30 m
- The most spectral diversity commercially available:
  - Panchromatic band
  - 4 standard VNIR colors: blue, green, red, near-IR1
  - 4 added VNIR colors: coastal, yellow, red edge, and near-IR2
  - 8 SWIR bands: Penetrates haze, fog, smog, dust, and smoke
  - 12 CAVIS bands: Maps clouds, ice and snow, corrects for aerosol and water vapor
- Industry-leading geolocation accuracy
- High capacity in various collection modes
- Bi-directional scanning
- Rapid retargeting using Control Moment Gyros (two times faster than any competitor)
- Direct Access tasking from and image transmission to customer sites

Benefits

- Daily revisits
- Simultaneous, high resolution
- Super-spectral imagery
- Large area mono and stereoscopic collection eliminates temporal variations
- Precision geolocation possible without ground control points
- Global capacity of 680,000 sq km per day
- New and enhanced applications, including:
  - Mapping
  - Land Classifications
  - Disaster Preparedness/Response
  - Feature Extraction/Change Detection
  - Soil/Vegetative Analysis
  - Geology: Oil & Gas, Mining
  - Environmental Monitoring
  - Bathymetry/Coastal Applications
- Superior haze penetration



WorldView-3 artist rendering

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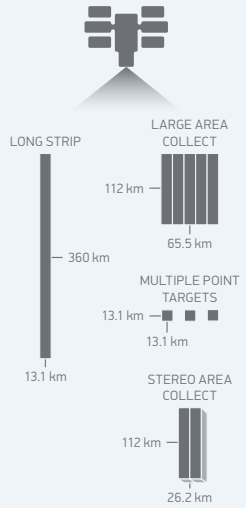
Design and specifications

MAXAR CONSTELLATION - WORLDVIEW-3

Orbit	Altitude: 617 km Type: Sun syncronous, 10:30 am descending node Period: 97 min.
Life	Spec Mission Life: 7.25 years Estimated Service Life: 10 to 12 years
Spacecraft size, mass and power	Size: 5.7 m (18.7 ft) tall x 2.5 m (8 ft) across 7.1 m (23 ft) across deployed solar arrays Mass: 2800 kg (6200 lbs) Power: 3.1 kW solar array, 100 Ahr battery
Sensor bands	Panchromatic: 450–800 nm 8 Multispectral: Coastal: 397–454 nm — Red: 626–696 nm Blue: 445–517 nm — Red Edge: 698–749 nm Green: 507–586 nm — Near-IR1: 765–899 nm Yellow: 580–629 nm — Near-IR2: 857–1039 nm 8 SWIR Bands: SWIR-1: 1184–1235 nm — SWIR-5: 2137–2191 nm SWIR-2: 1546–1598 nm — SWIR-6: 2174–2232 nm SWIR-3: 1636–1686 nm — SWIR-7: 2228–2292 nm SWIR-4: 1702–1759 nm — SWIR-8: 2285–2373 nm 12 CAVIS Bands: Desert Clouds: 405–420 nm — Water-3: 930–965 nm Aerosol-1: 459–509 nm — NDVI-SWIR: 1220–1252 nm Green: 525–585 nm — Cirrus: 1365–1405 nm Aerosol-2: 635–685 nm — Snow: 1620–1680 nm Water-1: 845–885 nm — Aerosol-1: 2105–2245 nm Water-2: 897–927 nm — Aerosol-2: 2105–2245 nm
Sensor resolution (or GSD, Ground Sample Distance; off-nadir is geometric mean)	Panchromatic nadir: 0.31 m 20° off-nadir: 0.34 m Multispectral nadir: 1.24 m 20° off-nadir: 1.38 m SWIR nadir: 3.70 m 20° off-nadir: 4.10 m CAVIS nadir: 30.00 m
Dynamic range	11-bits per pixel Pan and MS; 14-bits per pixel SWIR
Swath width	At nadir: 13.1 km
Attitude determination and control	Type: 3-axis Stabilized Actuators: Control Moment Gyros (CMGs) Sensors: Star trackers, precision IRU, GPS
Pointing accuracy and knowledge	Accuracy: <500 m at image start/stop Knowledge: Supports geolocation accuracy below
Retargeting agility	Time to Slew 200 km: 12 sec
Onboard storage	2199 Gb solid state with EDAC
Communications	Image & Ancillary Data: 800 and 1200 Mbps X-band Housekeeping: 4, 16, 32, or 64 kbps real time, 524 kbps stored, X-band Command: 2 or 64 kbps S-band
Max contiguous area collected in a single pass (30° off-nadir angle)	Mono: 66.5 km x 112 km (5 strips) Stereo: 26.6 km x 112 km (2 pairs)
Revisit frequency (at 40°N Latitude)	1 m GSD: <1.0 day 4.5 days at 20° off-nadir or less
Geolocation accuracy (CE90)	Predicted <3.5 m CE90 without ground control
Capacity	680,000 sq km per day

Collection scenarios

(30 degrees off-nadir angle)



Sensor bands

- Panchromatic
- Multispectral
- 4 additional multispectral bands
- 8 SWIR bands
- 12 CAVIS bands

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