



WorldView-3

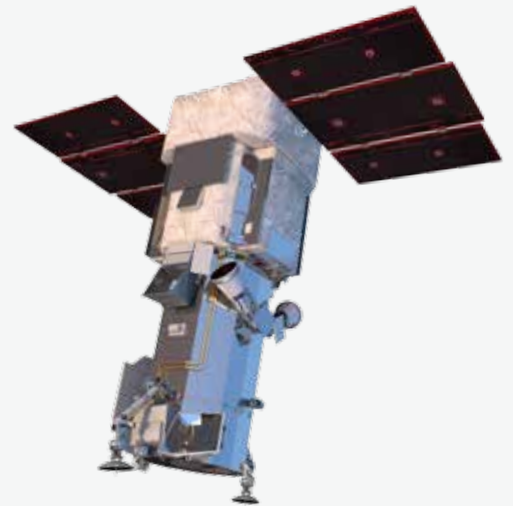
WorldView-3 is the industry's first multi-payload, super-spectral, high-resolution commercial satellite. Operating at an expected altitude of 617 km, WorldView-3 provides 31 cm panchromatic resolution, 1.24 m multispectral resolution, 3.7 m short-wave infrared resolution, and 30 m CAVIS resolution. WorldView-3 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 DigitalGlobe 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*Will be resampled for commercial distribution
- » 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
- » Daily revisits

Benefits

- » Simultaneous, high resolution, super-spectral imagery
- » Large area mono and stereoscopic collection eliminates temporal variations
- » Precision geo-location 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
 - Identification of Man-made Materials
- » Superior Haze Penetration

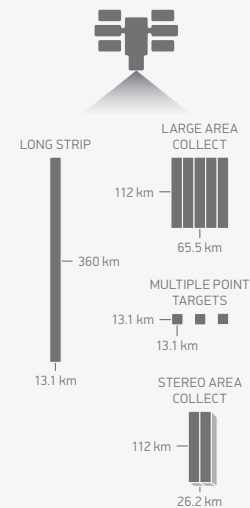


WorldView-3 artist rendering






Design and specifications

Orbit	Altitude: 617 km Type: Sun synchronous, 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	<p>Panchromatic: 450 - 800 nm</p> <p>8 Multispectral:</p> <table border="0"> <tr> <td>Coastal:</td> <td>397 - 454 nm</td> <td>Red:</td> <td>626 - 696 nm</td> </tr> <tr> <td>Blue:</td> <td>445 - 517 nm</td> <td>Red Edge:</td> <td>698 - 749 nm</td> </tr> <tr> <td>Green:</td> <td>507 - 586 nm</td> <td>Near-IR1:</td> <td>765 - 899 nm</td> </tr> <tr> <td>Yellow:</td> <td>580 - 629 nm</td> <td>Near-IR2:</td> <td>857 - 1039 nm</td> </tr> </table> <p>8 SWIR Bands:</p> <table border="0"> <tr> <td>SWIR-1:</td> <td>1184 - 1235 nm</td> <td>SWIR-5:</td> <td>2137 - 2191 nm</td> </tr> <tr> <td>SWIR-2:</td> <td>1546 - 1598 nm</td> <td>SWIR-6:</td> <td>2174 - 2232 nm</td> </tr> <tr> <td>SWIR-3:</td> <td>1636 - 1686 nm</td> <td>SWIR-7:</td> <td>2228 - 2292 nm</td> </tr> <tr> <td>SWIR-4:</td> <td>1702 - 1759 nm</td> <td>SWIR-8:</td> <td>2285 - 2373 nm</td> </tr> </table> <p>12 CAVIS Bands:</p> <table border="0"> <tr> <td>Desert Clouds:</td> <td>405 - 420 nm</td> <td>Water-3:</td> <td>930 - 965 nm</td> </tr> <tr> <td>Aerosol-1:</td> <td>459 - 509 nm</td> <td>NDVI-SWIR:</td> <td>1220 - 1252 nm</td> </tr> <tr> <td>Green:</td> <td>525 - 585 nm</td> <td>Cirrus:</td> <td>1365 - 1405 nm</td> </tr> <tr> <td>Aerosol-2:</td> <td>635 - 685 nm</td> <td>Snow:</td> <td>1620 - 1680 nm</td> </tr> <tr> <td>Water-1:</td> <td>845 - 885 nm</td> <td>Aerosol-1:</td> <td>2105 - 2245 nm</td> </tr> <tr> <td>Water-2:</td> <td>897 - 927 nm</td> <td>Aerosol-2:</td> <td>2105 - 2245 nm</td> </tr> </table>	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	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	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
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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



Sensor bands

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