DATA SHEET

DigitalGlobe™

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 <1 day and is capable of collecting up to 680,000 km² per day, further enhancing the DigitalGlobe collection capacity for more rapid and reliable collection.

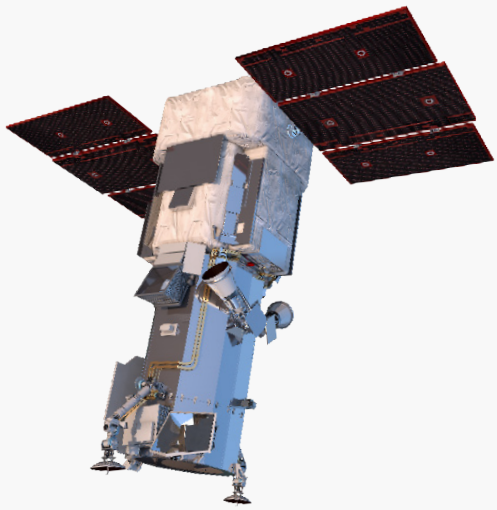
Features

- 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 (>2x 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 km² 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

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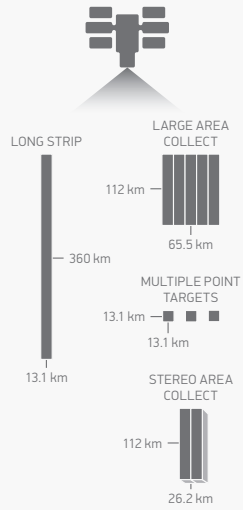
DIGITALGLOBE CONSTELLATION » WORLDVIEW-3

DigitalGlobe™

Design and specifications

Orbit	Altitude: 617 km Type: SunSync, 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: 400 - 450 nm — Red: 630 - 690 nm Blue: 450 - 510 nm — Red Edge: 705 - 745 nm Green: 510 - 580 nm — Near-IR1: 770 - 895 nm Yellow: 585 - 625 nm — Near-IR2: 860 - 1040 nm 8 SWIR Bands: SWIR-1: 1195 - 1225 nm — SWIR-5: 2145 - 2185 nm SWIR-2: 1550 - 1590 nm — SWIR-6: 2185 - 2225 nm SWIR-3: 1640 - 1680 nm — SWIR-7: 2235 - 2285 nm SWIR-4: 1710 - 1750 nm — SWIR-8: 2295 - 2365 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-3: 2105 - 2245 nm Water-2: 897 - 927 nm — Aerosol-3: 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 km² per day

Collection scenarios



Sensor bands

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

DS-WV3 09/14

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