

## WorldView-2

WorldView-2, launched October 2009, is the first high-resolution 8-band multispectral commercial satellite. Operating at an altitude of 770 km, WorldView-2 provides 46 cm panchromatic resolution and 1.85 m multispectral resolution. WorldView-2 has an average revisit time of 1.1 days and is capable of collecting up to 785,000 km<sup>2</sup> (303,000 mi<sup>2</sup>) of 8-band imagery per day, greatly enhancing DigitalGlobe's multispectral collection capacity for more rapid and reliable collection. WorldView-2 substantially expands imagery product offerings to all DigitalGlobe customers.

### Features

- Very high resolution
- The most spectral diversity commercially available
  - 4 standard colors: blue, green, red, near-IR1
  - 4 new colors: coastal, yellow, red edge, and near-IR2
- Industry-leading geolocation accuracy
- High capacity over a broad range of collection types
- Bi-directional scanning
- Rapid retargeting using Control Moment Gyros (>2x faster than any competitor)
- Direct downlink to customer sites available
- Frequent revisits at high resolution

### Benefits

- Provides highly detailed imagery for precise map creation, change detection, and in-depth image analysis
 

(Note: imagery must be re-sampled to 50 cm for non-US Government customers)
- Geolocate features to within 5 m to create maps in remote areas, maximizing the utility of available resources.
- Collects, stores, and downlinks a greater supply of frequently updated global imagery products than competitive systems
- Stereoscopic collection on a single pass, ensures image continuity and consistency of quality
- Provides the ability to perform precise change detection, mapping and analysis at unprecedented resolutions in 8-band multispectral imagery



WorldView-2 clean room pre-launch preparations. The third of DigitalGlobe's state-of-the-art high-resolution commercial imagery satellites.

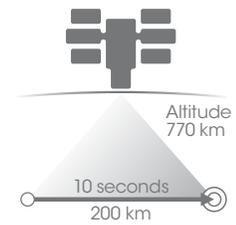


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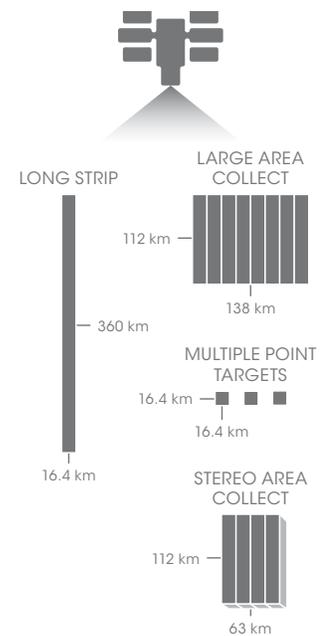
## Design and Specifications

<b>Launch Information</b>	Date: October 8, 2009 Launch Vehicle: Delta 7920 (9 strap-ons) Launch Site: Vandenberg Air Force Base, California
<b>Orbit</b>	Altitude: 770 km Type: Sun synchronous, 10:30 am descending node Period: 100 min.
<b>Mission Life</b>	7.25 years, including all consumables and degradables (e.g. propellant)
<b>Spacecraft Size, Mass and Power</b>	4.3 m (14 ft) tall x 2.5 m (8 ft) across 7.1 m (23 ft) across the deployed solar arrays 2800 kg (6200 lbs) 3.2 kW solar array, 100 Ahr battery
<b>Sensor Bands</b>	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
<b>Sensor Resolution</b>	Panchromatic: 0.46 m GSD at nadir, 0.52 m GSD at 20° off-nadir Multispectral: 1.85 m GSD at nadir, 2.07 m GSD at 20° off-nadir
<b>Dynamic Range</b>	11-bits per pixel
<b>Swath Width</b>	16.4 km at nadir
<b>Attitude Determination and Control</b>	3-axis stabilized Actuators: Control Moment Gyros (CMGs) Sensors: Star trackers, solid state IRU, GPS
<b>Pointing Accuracy and Knowledge</b>	Accuracy: <500 m at image start and stop Knowledge: Supports geolocation accuracy below
<b>Retargeting Agility</b>	Acceleration: 1.43 deg/s/s Rate: 3.86 deg/s Time to Slew 200 km: 10 sec
<b>Onboard Storage</b>	2199 Gb solid state with EDAC
<b>Communications</b>	Image and Ancillary Data: 800 Mbps X-band Housekeeping: 4, 16 or 32 kbps real-time, 524 kbps stored, X-band Command: 2 or 64 kbps S-band
<b>Max Viewing Angle / Accessible Ground Swath</b>	Nominally +/-45° off-nadir = 1651 km wide swath Higher angles selectively available
<b>Max Contiguous Area Collected in a Single Pass (30° off-nadir angle)</b>	Mono: 138 x 112 km (8 strips) Stereo: 63 x 112 km (4 pairs)
<b>Revisit Frequency (at 40°N Latitude)</b>	1.1 days at 1 m GSD or less 3.7 days at 20° off-nadir or less (0.52 m GSD)
<b>Geolocation Accuracy (CE90)</b>	Specification of 5.0 m CE90 at less than 30° off-nadir, with predicted performance in the range of 4.6 to 10.7 m (15 to 35 ft) CE90, excluding terrain and off-nadir effects With registration to GCPs in image: 2.0 m (6.6 ft)

## Altitude and Slew Time



## Collection Scenarios (30° off-nadir angle)



## Sensor Bands

- Panchromatic
- Multispectral
- 4 Additional Bands