# WORLDVIEW-2

SES DATA SHEET

## 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 1 million sq km of 8-band imagery per day, greatly enhancing Maxar's multispectral collection capacity for more rapid and reliable collection. WorldView-2 substantially expands imagery product offerings to all Maxar 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
- Geolocate features to less than 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



## **Specifications**

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Launch information	Date: 10/08/2009 Launch vehicle: Delta 7920 (9 strap-ons) Launch site: Vandenberg Air Force Base, California
Orbit	Altitude: 770 km Type: Sun synchronous, 10:30 am descending node Period: 100 min
Mission life	10-12 years, including all consumables and degradables (e.g. propellant)
Spacecraft size, mass and power	5.7 m (18.7 ft) tallx2.5 m (8 ft) across 7.1 m (23 ft) across the deployed solar arrays 2615 kg (5765 lbs) 3.2 kW solar array, 100 Ahr battery
Sensor bands	Panchromatic: 450-800 nm   8 Multispectral: 630-690 nm   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
Sensor resolution	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
Dynamic range	11-bits per pixel
Swath width	16.4 km at nadir
Attitude determination and control	3-axis stabilized Actuators: Control Moment Gyros (CMGs) Sensors: star trackers, solid state IRU, GPS
Pointing accuracy and knowledge	Accuracy: <500 m at image start and stop Knowledge: Supports geolocation accuracy below
Retargeting agility	Time to slew 200 km: 10 sec
Onboard storage	2199 GB solid state with EDAC
Communications	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
Max Contiguous Area Collected in a Single Pass (30 degrees off-nadir angle)	Mono: 138x112 km (8 strips) Stereo: 63x112 km (4 pairs)
Revisit frequency (at 40 degrees North latitude)	1.1 days at 1 m GSD or less 3.7 days at 20 degrees off-nadir or less (0.52 m GSD)
Geolocation accuracy (CE90)	Demonstrated <3.5 m CE90 without ground control
Capacity	1 million sq km per day

#### ALTITUDE AND SLEW TIME



#### **COLLECTION SCENARIOS**

(30 degrees off-nadir angle)





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