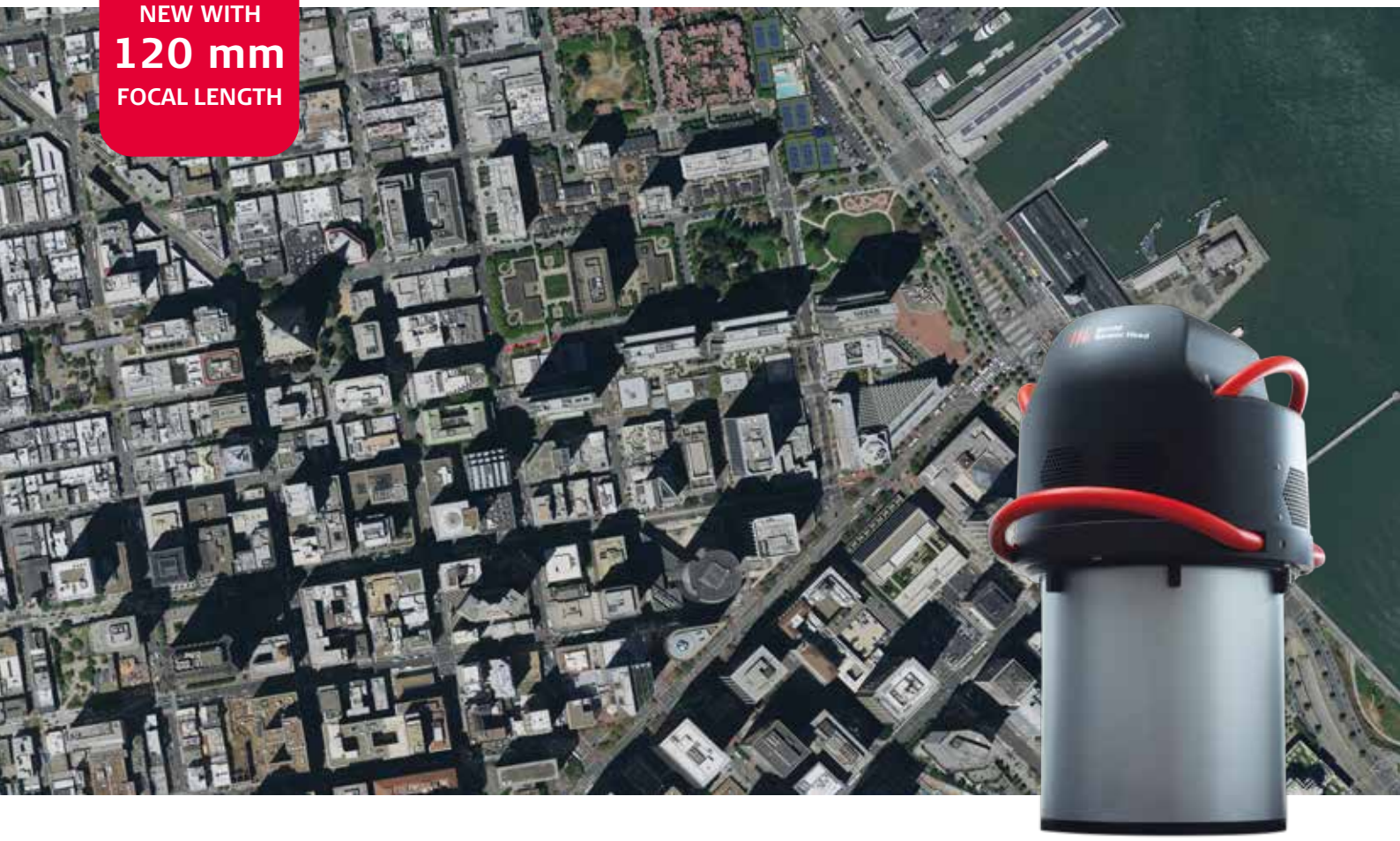
Leica ADS100

Airborne digital sensor – airborne evolution

NEW WITH
120 mm
FOCAL LENGTH



Increased image quality

With its unique features, the Leica ADS100 is designed to meet the 21st century airborne imaging needs. A full multispectral colour swath width of 20,000 pixels in RGBN guarantees the highest data acquisition efficiency, and full colour RGBN in the forward, nadir and backward offers more flexibility for stereo interpretation.

Reduced flight time

The Leica ADS100 product family continues to lead the way in airborne evolution. The improved cycle time allows you to acquire smaller GSD at faster speed, and the 120 mm focal length increases ground resolution, making the ADS100 SH120 the perfect sensor for urban mapping and high altitude data collection applications.

Fastest processing speed

The Leica ADS100 features embedded Novatel SPAN GNSS/IMU with tightly coupled processing to reduce fuel consumption. End-to-end workflow from mission planning with Leica MissionPro to orthophoto and point cloud generation with Leica XPro let you collect and process data at the highest level of performance.

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Leica ADS100 product specifications

CHARACTERISTICS OF DATA ACQUISITION

Focal plate (FPM)	Total of 13 CCD lines with 20,000 pixels each in three line groups (forward, nadir, backward), pixel size 5um, TDI stages selectable 1, 2, 4, 8, 15 (1/2, 1/4, 1/8, 1/16 @ Cycle time > 1 ms) Two tetrachroid full colour RGBN beamsplitters in forward and backward, one bi-tetrachroid in nadir, full colour RGGBN (green staggered)
SH100 SH120	Forward 25.6°, backward 19.4° Forward 14°, backward 10.4°
Dynamic range of CCD	72 dB
Resolution A/D converter	14-bit
Data channel	16-bit
Data compression	Lossless 14-bit
Recording interval per line (cycle time)	> 0.5 ms

SPECTRAL RANGE

Spectral range	Red, green, blue, near-infrared
Spectral bands	
Red	619 – 651 nm
Green	525 – 585 nm
Blue	435 – 495 nm
NIR	808 – 882 nm

OPTICS DO120

Field of view (FoV)	
SH100	Forward 65.2° across track Nadir 77.3° across track Backward 71.4° across track
SH120	Forward 36.9° across track Nadir 45.2° across track Backward 41° across track
Focal length	
SH100	62.5 mm
SH120	120 mm
F-number	4
Registration accuracy	1 um
Lens design	Telecentric lens design. Maintains position and width of filter edges over whole FoV. Thermic and pressure compensation for high accuracy.
Flying height multiplier	
SH100	12,500 : 1, 10 cm GSD = 1,250 m AGL
SH120	24,000 : 1, 10 cm GSD = 2,400 m AGL

MECHANICAL INTERFACE

Sensor head	
Weight, height, diameter	
SH100	47.5 kg with CUS6 IMU, 67 cm, 39 cm
SH120	46.5 kg with CNUS5H IMU, 67 cm, 39 cm
Camera controller CC33	
Weight with MM30	6.5 kg
L x W x H	300 x 260 x 140 mm, usable with Leica RCD30 series, Novatel SPAN embedded
Mass memory MM30	Solid state drive 1,600GB per MM30, Standard ¾" slot, weight 0.5 kg, removable, portable
Leica operator console OC60	12.1" touch-screen with 1024 x 768 resolution, sunlight readable
Leica pilot display PD60	6.5" screen with 1024 x 768 resolution, quick access buttons
Interface stand IS40	IS40 stand fits RC30 NAV-sight installation
IMU integrated in sensor	
SH100	Novatel SPAN CUS6 IMU integrated
SH120	Novatel SPAN CNUS5H IMU integrated
GNSS/IMU system	Novatel SPAN embedded in CC33 (GPS, GLONASS and BeiDou)
Mount	Leica PAV100 gyro-stabilised mount with adaptive control, high performance version for SH120
Total weight installed	
SH100	~120 kg
SH120	~130 kg

IN-FLIGHT QUALITY CONTROL

Video camera	
SH100	
Oblique view	17° forward
Swath width	55° along x 77° across track
SH120	
Oblique view	6° forward
Swath width	33° along x 44° across track
Waterfall images	Waterfall images during flight available for RGB nadir
Leica FlightPro	Full control of data acquisition parameters

OPERATIONAL

Capacity of mass memory	Joint volume 3.2 TB; recording time depending on data acquisition configuration; MM30 hot-swappable in flight.
Firmware & software	Leica FlightPro Flight Management Software
Average ground speed (GS) for various GSD @ 0.5 ms CT	GS = 120 kts for GSD of 1.2" / 3 cm GS = 190 kts for GSD of 2" / 5 cm GS = 290 kts for GSD 3" / 7.5 cm GS = > 350 kts for GSD 4" / 10 cm

ENVIRONMENTAL

Pressure	Non-pressurised cabin up to ICAO 25,000 ft (7,620 m)
Humidity	0 % to 95 % RH according ISO7137
Operating temperature	– 20 °C to + 55 °C
Storage temperature	
SH100	– 40 °C to + 85 °C
SH120	– 40 °C to + 70 °C

ELECTRICAL

Average power consumption incl. SH120, CC33, PAV100 High Performance, OC60, PD60	350 – 700 W / 28 VDC
Fuses on aircraft power outlet	Typically 1 x 35 A or 1 x 50 A

STANDARDS

General standards for temperature & electronic environment	ISO 7137, RTCA DO -160G, EUROCAE -14G
Conformity to national regulations	USA: FCC Part 15, EU: Directive 2004/108/EG

POST PROCESSING AND DATA FORMAT

Output from XPro post-processing	TIFF tiled

COMMON SENSOR PLATFORMS

The Leica ADS100 product family supports unified aircraft installation. All components, such as the Leica PAV100 gyro-stabilised mount, camera controller CC33 and the operator and pilot displays, can be shared with the Leica RCD30 medium format and oblique cameras, thus significantly reducing cost of ownership and simplifying operation.

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