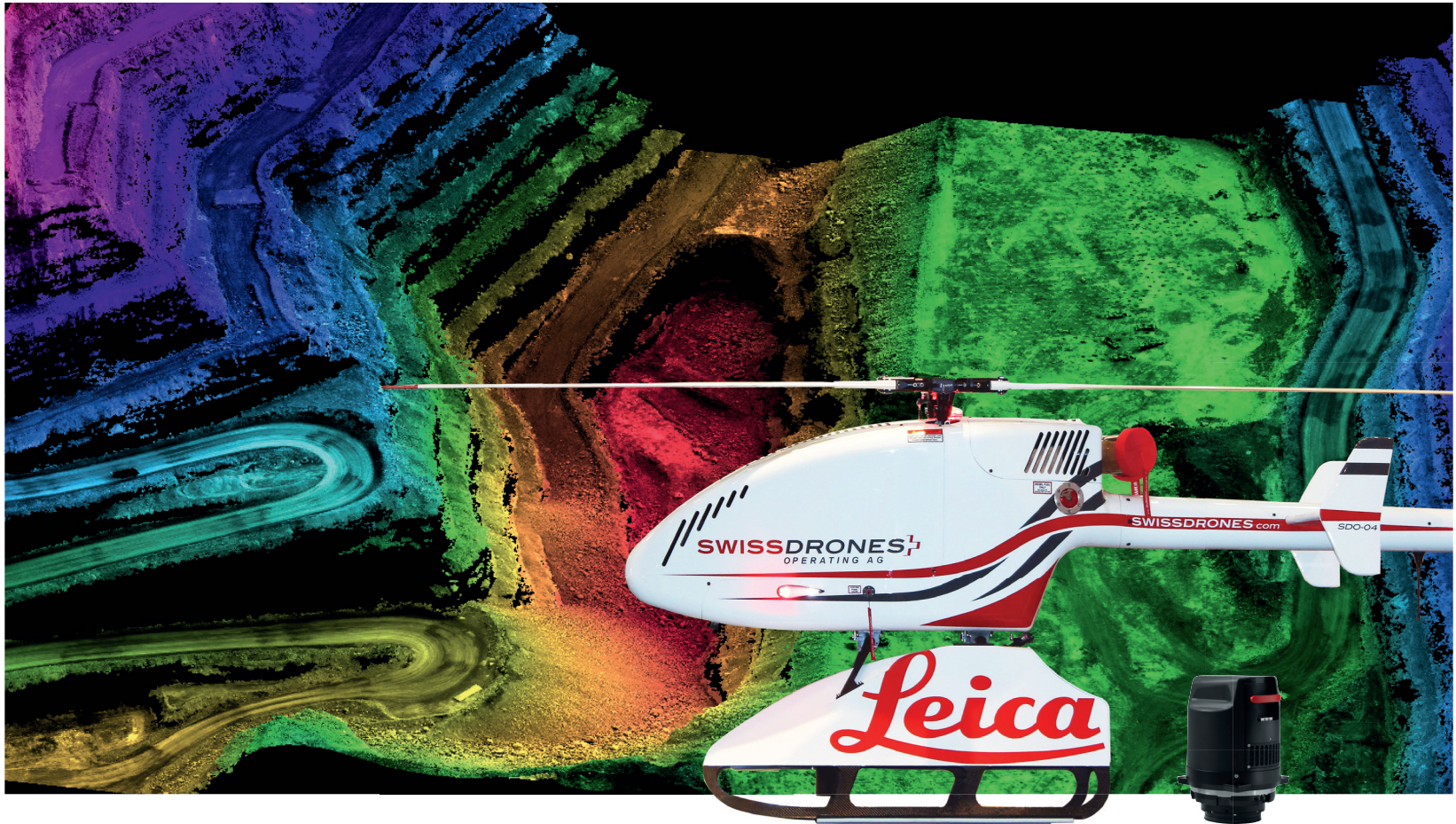


Leica RCD30 for UAV

Aerial mapping solution



Professional mapping

The Leica RCD30 80 MP camera and Swissdrones' SDO 50 V2 offer a complete and unmanned aerial vehicle (UAV) based mapping solution that is reliable and certified, provides accurate geospatial information and is embedded into an proven workflow. The system meets the rising demand for cost-effective, flexible and innovative professional mapping solutions.



Innovation & safety

Leica Geosystems and Swissdrones provide an innovative UAV-based mapping solution that can be operated safely in harsh environments. The SDO 50 V2 is a mid-size rotary wing UAV offering supreme payload performance of up to 45 kg, extreme endurance, multiple safety features, and a choice of manual or autonomous operation using proven autopilot technology.



Multispectral imagery

As the world's first medium format camera to provide superior multi-spectral RGBN imagery and highest photogrammetric accuracy, the RCD30 offers unmatched design features ideal for operation on a UAV such as the SDO 50 V2. In combination, the systems form a high-performance solution for local mapping jobs, corridor applications, mining and agriculture.

SDO 50 V2 & Leica RCD30 product specifications

SDO 50 V2

Rotary system	Flettner double rotor system (4 blades)
Rotor diameter	2 x 2,82 m
Engine	High performance turbine
Fuel	JET A1 (optional Diesel)
Fuel consumption	Approx. 15 l/hour
Dimensions (L x W x H)	2,32 m x 0,7 m x 0,92 m
Empty weight	42 kg
Payload	45 kg (at optimal conditions)
MTOW	87 kg
Max fuel capacity	Main tank 13 l, additional tank 2 x 4 l
Max time to flight	1 h 20 min (included Leica RCD30)
Max service ceiling	up to 2000 m AMSL
Max airspeed without pod with pod	20 m/s 10 m/s

NOTE: All performance specifications about the SDO 50 V2 and for the GCS, depending on payload configuration.

GROUND CONTROL STATION (GCS)

Weight	25 kg, Pelicase IP67 hard case
Dimensions (L x W x H)	0.6 m x 0.53 m x 0.23 m
Temperature range	- 10 °C to + 70 °C
Screens	2 monitors 17" and 8.5", Daylight suitable, built-in speakers & microphone
Control	2 joysticks with hall sensors for flight and gimbal control; industry keyboard, illuminated
Power	Redundant power supply, operating 3 hrs in battery use
Live available data	2 monitors 17" and 8.5", daylight suitable, built-in speakers & microphone
Control	RPM, temperature, coordinates, altitude, fuel level, flight plan, accuracy, height level, heading, energy, voltage, course, PDOP, ground speed, climbing speed
Data link	Customised frequency 420-440 MHz / frequency hopping, range 20 km (VLOS)

AUTOPILOT

Auto-start, auto-landing, mission flight, coming home, heading, direct way-point, change mission within mission, up to 256 waypoints.

FEATURES

Altitude stabilisation and velocity control, integrated GPS / inertial navigation, built-in data logger & telemetry, programmable hardware for rapid customisation, built-in payload interfaces, built-in vibration isolation.

GPS RECEIVER

Receiver	NovAtel OEMV1 receiver, DGPS
Positional accuracy	1.8 m RMS 1.8 m RMS
Piezoresistive pressure sensor	300 – 1100 mbar

CHARACTERISTICS OF DATA ACQUISITION

CCD Size	80MP camera head CH81/82	60MP camera head CH61/62
Resolution	10320 x 7752 pixels	8956 x 6708 pixels
Pixel size	5.2 µm	6 µm
CCD dynamic range	73 dB	73 dB
Resolution A/D converter	14-bit	
Data channel	16-bit lossless	
Maximum frame rate	60MP: 1.00 sec 80MP: 1.25 sec	
Motion compensation	Mechanical forward and lateral motion compensation along two axis	

SPECTRAL RANGE

Camera head CH81/61	RGB
Camera head CH82/62	RGB and NIR, coregistered
NIR range	780 – 880 nm

OPTICS

Lenses	Leica NAG-D 50 mm Leica NAT-D 80 mm	53.8° FOV across track, 41.8° FOV along track 35.9° FOV across track, 27.4° FOV along track
Ruggedised and temperature compensated for high accuracy performance between - 10 °C and + 30 °C		
Shutter	Central shutter, user replaceable Life > 200'000 frames	
Aperture	Leica NAG-D 50 mm Leica NAT-D 80 mm	Automatically controlled aperture 4, 5.6, 8, 11 2.8, 4, 5.6, 8
Lens mount	Easy to use bayonet connection Automated electrical connection Stabilised connection mechanics	

PHYSICAL

Camera Head CH8x/CH6x	Weight, height without lense Leica NAG-D 50 mm Leica NAT-D 80 mm Diameter	3.1 kg, 168 mm 3.9 kg, 238 mm 3.6 kg, 193 mm 128 mm
Pod empty weight	8 kg	
Camera Controller CC31/CC32	Weight without MM30 L x W x H Camera Controller CC31 Camera Controller CC32	5.0 kg 300 x 260 x 140 Without GNSS/IMU system With GNSS/IMU system for standalone use
Processor CC31/CC32	Core-I7, Win7 64 Bit, 8 GB RAM, 32 GB CF-card	
GNSS/IMU	Supports wide variety of IMUs, supports GPS/GLONASS, deeply coupled solution for more efficient data acquisition	
Mass memory MM30	Solid state drive, 600 GB, 1,600 GB Weight 0.5 kg, removable, portable	

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