

# DRAGO

Demonstrator for Remote Analysis of Ground Observations

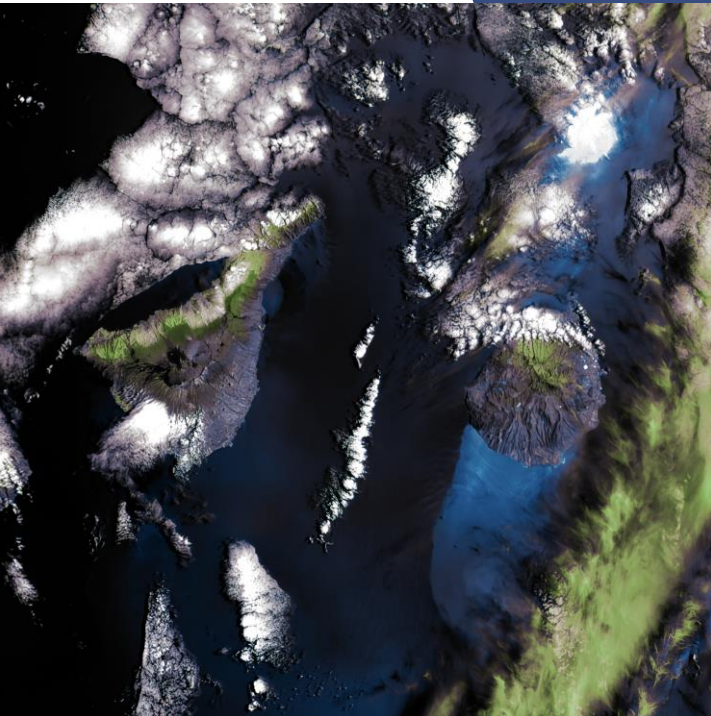


## Characteristics:

- ✓ Uncooled InGaAs technology
- ✓ High-speed image acquisition
- ✓ Size, weight and power (SWaP) optimized camera
- ✓ Proven space flight heritage

DRAGO is a series of compact **SWIR** cameras specifically designed for the space environment. They employ **uncooled InGaAs** technology to obtain high-quality multispectral images in two observing bands: 1.1 and 1.6 microns.

Each camera boasts an on-board image processing unit that can compress, encrypt and even apply complex image processing algorithms such as **super-resolution**.



Tenerife and Gran Canaria (Spain), imaged by DRAGO-1 from space. Coloured composition of the 1.1 and 1.6 microns bands. Credit: IACTEC

Wildfires close to crop fields in Alberta (Canada), imaged by DRAGO-2. Image in the 1.6 microns band. The fire location is marked in red. Credit: IACTEC

<https://www.iac.es/en/projects/iactec-space>

[iactec.space@iac.es](mailto:iactec.space@iac.es)



SYSTEM OVERVIEW	DRAGO-1	DRAGO-2
Sensor type	InGaAs	
Observable bands	1.1 and 1.6 $\mu\text{m}$	
GSD @500 km	300 m/pixel *	50 m/pixel *
Swath @500 km	190 km	32 km
SNR	>100 (albedo>0.2)	
READ OUT INTEGRATED CIRCUIT		
Frame rate	Up to 160 fps	
Bit depth	14 bits	
POWER REQUIREMENTS		
Regulated Supply Voltage	5 V (min value: 4.5 V, max value: 5.5 V)	
Mean power	< 5.5 W	
Required slew rate	> 1 V/ms	
Power bus input capacitance	215 $\mu\text{F}$	
DATA INTERFACE		
Physical layer	RS-422	
Data link layer	UART @ 921600 bps max.	
Application layer	Terminal emulator / ECSS-E-ST-70-41C (PUS) / Custom (per request)	
ENVIRONMENTAL AND QUALIFICATION LEVELS		
Outgassing levels	TML: <1% CVCM: <0.1%	
Operational temperature range	-20°C to 60°C	
Survival temperature range	-30°C to 70°C	
GSFCC-STD-7000A	Quasistatic loads: 16g	
	Sinusoidal vibration: 5-50 Hz: 2 g 50-105 Hz: 5.2 g 105-125 Hz: 1.25 g	
	Random vibration: 14.16 Grms	
	Shock Half sine pulse, 300 g, 25 $\mu\text{s}$	
PHYSICAL PROPERTIES		
Mass	1040 g	1160 g
Required volume	89 mm x 92 mm x 137 mm	96 mm x 96 mm x 170 mm

\* Before super-resolution

The technical characteristics described in this datasheet are for information only.

<https://www.iac.es/en/projects/iactec-space>

[iactec.space@iac.es](mailto:iactec.space@iac.es)