

constellr

Measuring Temperature & Water from Space

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constellr offers land surface temperature at unprecedented quality



- High-resolution (30 m) for field-level insights
- Daily revisit time for continuous monitoring
- ✓ High temperature accuracy
 (1.5 C°)
- Precursor to TRISHNA and
 LSTM for early LST uptake

Our temperature product is used across the season

We create value from pre-seeding to harvest







The HiVE constellation roadmap



Launching in 2024: HiVE specs

A number	Instrument	# band	Wavelength	Synergy to other missions	F
ALL AND	VNIR	10	Multispectral 0.44 – 0.94	Sentinel-2	٦ ع
	LWIR	4	8.6 9.2 10.6 11.75	LSTM+TRISHNA	L
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Bands

Spatial Resolution	30m
Revisit Time	< 4 days < 1 day by 2026
Temperature Accuracy	< 1.5K
Temperature Sensitivity	< 100mK
Local Time Consistency	1h
Latency	< 12h

(m = meter; K = Kelvin; mK = Millikelvin; h = hour(s)

Products: temperature – water

Land Surface Temperature







Evapotranspiration



etR



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Temperature at high-resolution and high frequency: celestR

Other sources

HiVE

constellr's algorithms

Homogenized Land Surface Temperature

www.conste

LST product specs



	Now	After Launch
Spatial Resolution	30m	30m native 10m sharpened
Revisit Time	< 8 days	< 4 days 1 day from 2026
Land Surface Temperature (LST) Accuracy	< 3.0K	< 1.5K
Latency	n/a	< 12h

(m = meter; K = Kelvin; mK = Millikelvin; pm = pm = post meridiem; h = hour(s)

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EtR product specs

Models	PTJPL ⁽¹⁾ & TSEB ⁽²⁾	
Spatial Resolution	Matches LST	
Revisit Time	Matches LST	
Daily ET	Daily cumulated ET (mm/day)	
(1) Priestly-Taylor Jet Propu (2) Two-Source Energy Bala	ulsion Laboratory nce	
xas		
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Case study with Yara* Improving and documenting ESG parameters in perennial crops

10 March 27 April 21 May 14th June Determination of water use efficiency YARA Increasing water efficiency by 1,7x Increasing nutrient uptake by 1,5x

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Case study: smart irrigation* Early warning of yield losses

- Idaho Russet Burbank Potato crops in Idaho
- Extremely sensitive to temperature changes discoloration
- Those fields that are well irrigated are maintaining LST in the mid 20s, whereas those fields without sufficient water and vegetation cover are above 40 degrees



LST Beyond Agriculture

Delivering value across industries





Monitor building structure impacts on urban heat islands

Assess impact of green space on temperature

27.5

30.0

32.5

35.0

Urban Environmental Monitoring

45.0

42.5

40.0





How can we work together? Welcome to the future - today

Early Access Program

constellr is geared up to bring its first satellite into orbit in October 2024. Partners and customers can ensure access to the data at attractive terms already today – through the Early Access Program.

Copernicus Services

Constellr is a Copernicus Contributing Mission and thus our data is eligible for use in Copernicus Services products.

Analytics Partnerships

constellr's primary mission is in providing satellite data and therefore thrives in working together with organizations that can use these data sets to develop last-mile products for the end-user.



C, constellr

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Linkedin

Our progress



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