

CAPSULE SPACE

WATERCUBE+

Product Brochure
Rev. 3.0 25/09/2026

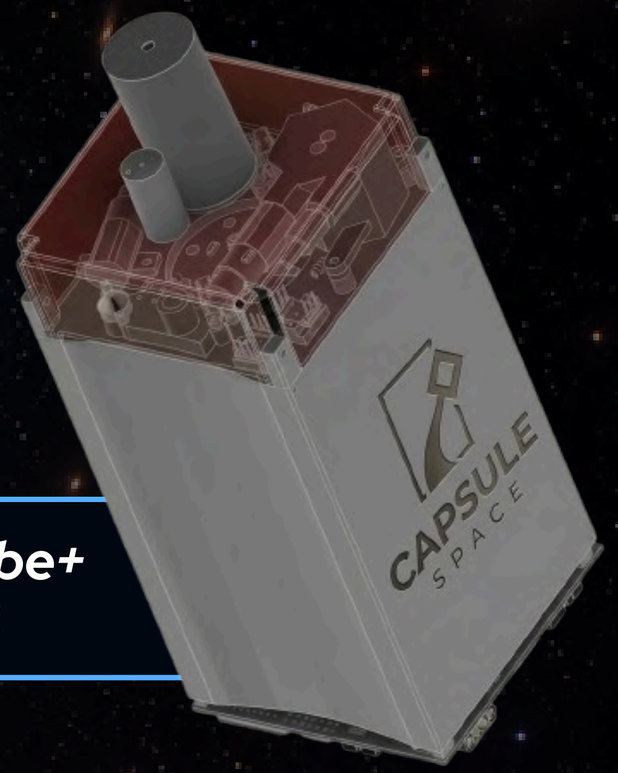
PLUGANDPLAY Takeoff L'acceleratore Aerospace e Advanced Hardware della Rete Nazionale CDP esa business incubation centre Bavaria kopa. DIANA INNOVATOR cdp Fondo Nazionale Innovazione CDP Venture Capital Sgr Moonstone

WATERCUBE+

Water-based propulsion systems.
WTC+ → resistojet + chemical thruster

- 50% FASTER LEAD TIME
- EASIER INTEGRATION AND TEST
- SIMPLER LOGISTIC
- RELIABLE IN-ORBIT
- RESILIENT SUPPLY CHAIN

→ <u>UP TO 20% MISSION COST SAVINGS PER SATELLITE</u>



WaterCube+
TRL 4

TIMELINE & ROADMAP

2025

2026

2027

2028

NOW

esa
contract
600k €

DIANA INNOVATOR
NATO DIANA
100k€

cdp Fondo Nazionale Innovazione CDP Venture Capital Sgr
kopa.
Moonstone
Pre-seed
800k€

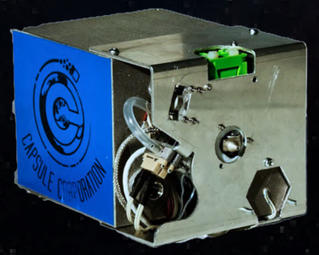
Grants
110k€
Smart&Start
720k€

Pre-orders
discussions

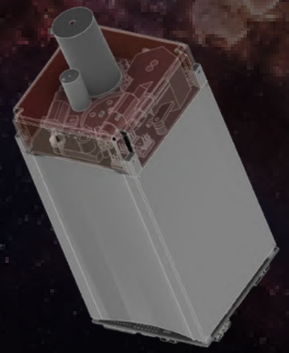
WTC
into the
market

WTC+
into the
market

WaterCube TRL 6
Critical Design
Review



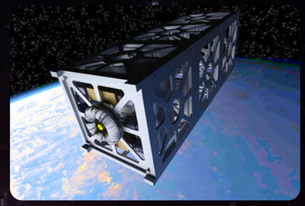
WTC+ TRL 4
Design Review



WTC TRL 7+
Flight Model
Delivery



WTC TRL 8
2 IODs
one private
one with ESA



WTC+
TRL 8
IOD

HOW DOES WaterCube+ WORK?

Hybrid (chemical + resistojet) miniaturised propulsion system

Hydrolitic reactor

Nozzle

Liquid

Water Tank

Electrical power

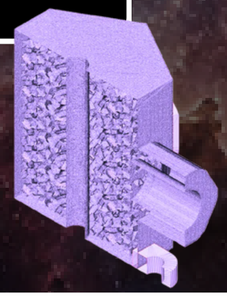
Liquid

Vaporization Cell

Steam

Nozzle

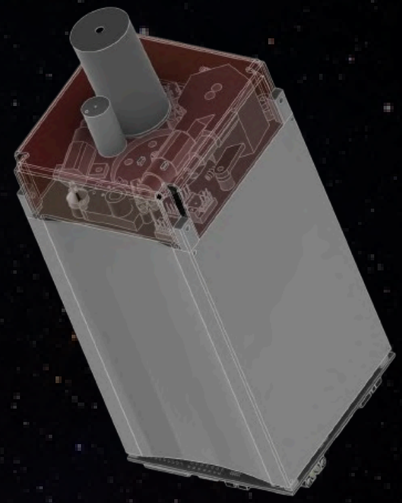
Proprietary technology



Valves, sensors, control & monitoring electronics board

Thrust: > 1000 mN
Isp: > 130 s

Thrust: 4 mN
Isp: >95 s



APPLICATIONS



Collision avoidance

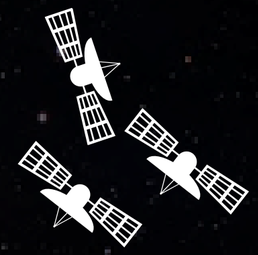
Active de-orbiting





Orbital decay drag
compensation in *LEO*

Formation flying





Attitude control and
proximity operations
for *SmallSat*



System Datasheet: WaterCube+ (1/2)

	Value	Unit of Measurement
SPECIFIC IMPULSE	95–110 Resistojet 130 – 140 Chemical	[s]
TOTAL IMPULSE	1.300 – 10.000 (*)	[Ns] (*) depending on amount of propellant
THRUST	4 Resistojet 500 – 1.5E3 Chemical	[mN]
POWER DURING FIRING	24 peak (5 minutes) – Resistojet 21 – 30 maximum – Resistojet 9 – 18 if used pulsed (**) – Resistojet 4–7 – Chemical	[W] (**) pulsed operations yield lower average thrust
UNIT VOLUME	2.5 – 10 U (***) 2.6 – 10.9 Kg	[U] (1U = 10 cm3) (***) depending on amount of propellant
ELECTRICAL INTERFACES	1 power and signal connector Harwin; CAN or RS-422 (TBC) signal interface; 12 V or 28 V power interface	
MECHANICAL INTERFACES	M3 – M4 screws	

System Datasheet: WaterCube+ (2/2)

WaterCube+ Size [U] (*)	Margined Wet Mass [kg]	Propellant Mass [kg]	Total Impulse @ 95 s Isp [Ns]	Total Impulse @ 50% 140 s - 50% 110 s Isp [Ns]
2.5	2.60	1.10	1023	1349
4	4.38	2.55	2372	3128
7	7.64	5.18	4814	6348
10	10.90	7.80	7255	9569

Isp [s]	Power [W]
95.1	25.3
100.8	26.7
106.2	28.2
110.7	29.9

PULSED MODE	Value
Average Thrust (depending on duty cycle)	1 – 3 [mN]
Duty cycle and period available	20% - 70% 1 - 30 s

(*) More configurations available, contact us for information.

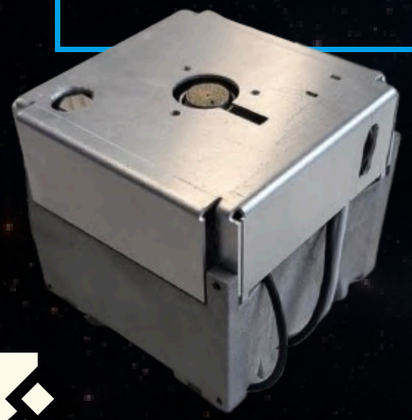
CASE STUDY: WaterCube+

Satellite Form Factor	12U	16U	Smallsat 100 kg	Smallsat 200 kg
Propulsion Unit Volume [U]	2,5	4	10	2 x 10
Propellant Mass [kg]	1,10	2,55	7,80	15,60
Assumed Spacecraft Wet Mass [kg]	21,6	28,8	100	200
Total Impulse [Ns]	1349	3128	9569	19138
Total Δv [m/s] @ 125 s Isp 3 mNs MIB resistojet 50 mNs MIB chemical	44,5	78,5	68,9	68,9
Added Lifetime / Benefits (*CAM = Collision Avoidance Maneuvre)	• Simplified integration and test • 1.5 years + 30 CAM	• Simplified integration and test • 3.0 years + 30 CAM	• Simplified integration and test • 2.5 years + 30 CAM	• Simplified integration and test • 2.5 years + 30 CAM

PRICING WaterCube+

LEAD TIME: 14 weeks from order for Small, Medium, Large and XL CLuster COTS

Small (COTS)	WaterCube+ 2.5U	€170k
Medium (COTS)	WaterCube+ 6U	€240k
Large (COTS)	WaterCube+ 10U	€290k
Custom	Any size between 2.5U - 10U	Contact us for details
XL Cluster (COTS)	Any WaterCube+ size clustered (2x, 3x, or 4x units)	Contact us for details



Other services	Propellant Loading
	Personnel Training (AIT & Operations)
	Integration Support

CAPSULE SPACE

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