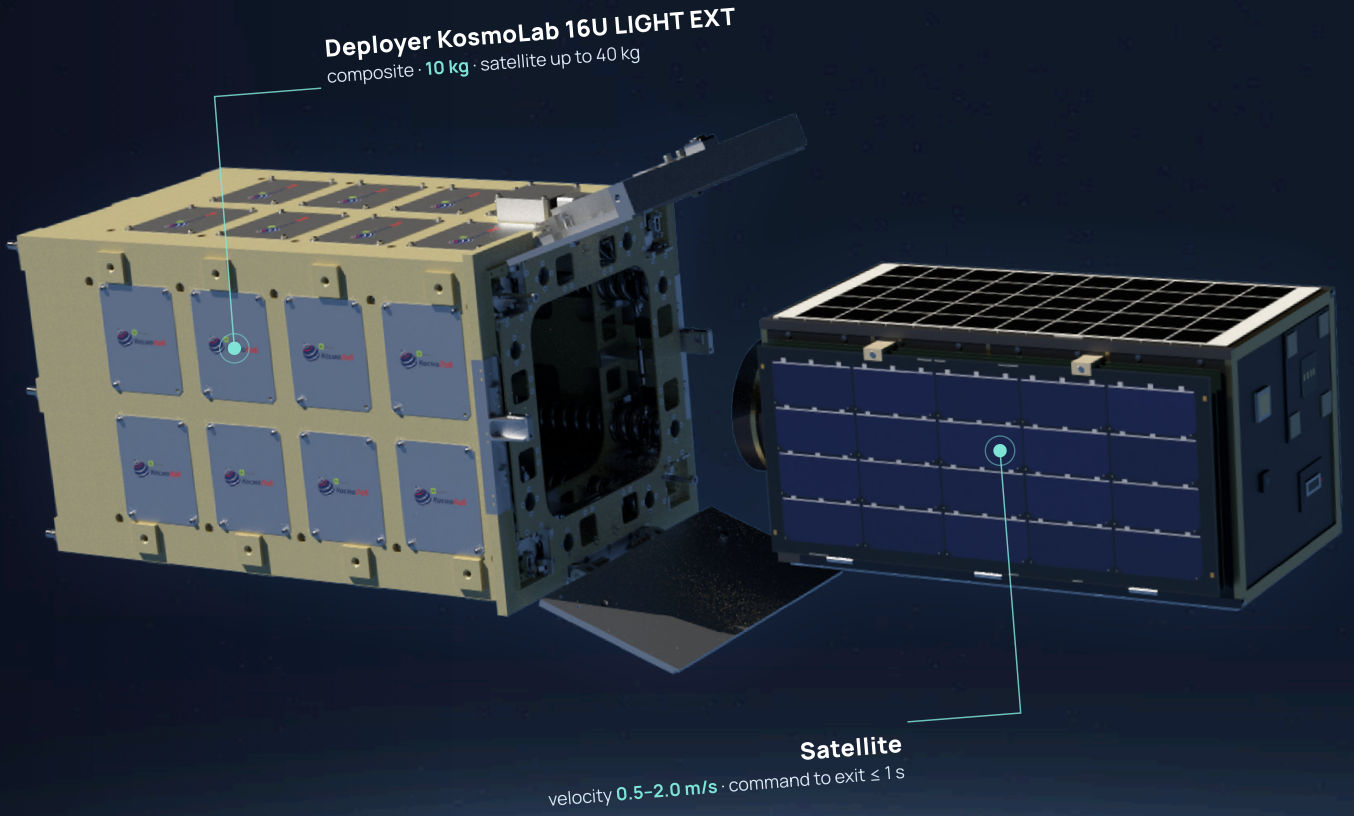
DEPLOYMENT SYSTEMS FOR SPACE SATELLITES

Deployment of satellites in orbit

CubeSat deployers · deployment systems · deployment sequencers · launch service

- https://KosmoLab.ru/en/



3U–16U
CubeSat deployers: composite and metal

up to 500 kg
deployment systems: SO-050 to SO-500

up to 36 channels
deployment sequencers for groups of satellites

11 Apr 2024
flight heritage: Angara-A5 / Orion — nominal deployment

Roscosmos space activity license

Skolkovo Innovation Center resident since 2018

Export control: permits arranged for you

ABOUT US

We deploy space satellites — reliably and predictably

- Since 2018 — deployment systems for space satellites of 1–500 kg
- CubeSat deployers, deployment systems, deployment sequencers, payload adapters
- In-house manufacturing, analysis and testing — fast adaptation to your satellite and launch vehicle
- Rideshare launches on Russian launch vehicles — from the compatibility check to confirmation of deployment in orbit

2018
start of operations; Skolkovo Innovation Center resident

11 Apr 2024
flight heritage: Angara-A5 / Orion upper stage

Roscosmos license
for space activities

Export
we arrange export control permits as a service



A KosmoLab deployer in thermal vacuum testing

CONTENTS

Products and services

FLIGHT HERITAGE



A successful launch — 11 Apr 2024 — Angara-A5 / Orion upper stage — 03

CUBESAT DEPLOYERS



Deployer 16U LIGHT EXT — Composite-body deployer for 16U CubeSats — 04



Deployer 16U LIGHT EXT-01 — Deployer for 16U CubeSats with 480 mm rails — 05



Deployer 16U LIGHT EXT-0-02 — 16U deployer (480 mm rails) with a built-in BU-01 deployment sequencer — 06



Deployer 12U LIGHT EXT — Composite-body deployer for a 12U CubeSat — 07



Deployer 12U LIGHT EXT 3U/6U — Multi-slot versions: a group of 3U and 6U satellites in one deployer — 08



Deployer 16U — Metal deployer for 16U CubeSats — 09



Deployer 12U — Metal deployer for 12U CubeSats — four slot configurations — 10



Deployer 4U — Deployer for 4U CubeSats — 11

DEPLOYMENT SYSTEMS



SO-050 — Deployment system KosmoLab for space satellites with mass up to 50 kg — 12

DEPLOYMENT SEQUENCERS



BU-12 · BU-24 · BU-36 — Deployment sequencers for groups of satellites — 13



BU-01 — Deployment sequencer built into the Deployer 12U / 16U LIGHT EXT — 14

ADAPTERS



Payload Adapter — Multi-satellite adapter for cluster launch on a single launch vehicle — 15

COMPONENTS



Electric Lock 28 V — Pin-puller release actuator for space mechanisms — 16



Solar Cell 16U — Ultra-thin unfolding solar cell for CubeSats — 17

SERVICES



Launch services — Turnkey rideshare launch, 2027 manifest, launch cost savings — 18

A SUCCESSFUL LAUNCH

KosmoLab deployer and sequencer worked properly in orbit

- 11 Apr 2024 — our deployer with sequencer reached orbit on Angara-A5 / Orion
- All KosmoLab systems worked properly
- 3U Gagarinets and 6U CubeSats deployed — the start of our flight heritage

1st	2	100 %	GEO
Angara-A5 launch from Vostochny	CubeSats deployed: 3U Gagarinets and 6U	of KosmoLab systems worked properly	test payload delivered to geostationary orbit

ROAD TO LAUNCH

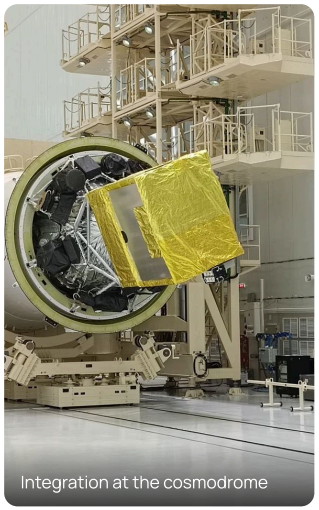
2023
Deployer and sequencer manufacturing, ground tests

Mar 2024
Integration with the satellites and the upper stage at Vostochny

11 Apr 2024
Angara-A5 / Orion launch

In orbit
3U Gagarinets and 6U deployed


Deployer and sequencer on the upper stage


Integration at the cosmodrome


Deployer with the satellites

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

Latest product information
https://KosmoLab.ru/en/launches/zapusk-deploera-kosmolab-na-angara-a5-orion/

KosmoLab

FLIGHT HERITAGE



11 Apr 2024

Vostochny Cosmodrome · Angara-A5 / Orion upper stage

CUBESAT DEPLOYERS

Deployer 16U LIGHT EXT

Composite-body deployer for 16U CubeSats

- 16U CubeSat up to 40 kg: protected during ascent, deployed on command from the launch vehicle or a KosmoLab sequencer
- Enlarged envelope: protrusions up to 39.5 mm on each side and up to 70 mm on the pusher side
- Redundant door release, door-open and deployment telemetry
- The same launch vehicle interfaces for all versions; adaptable to a specific launch vehicle

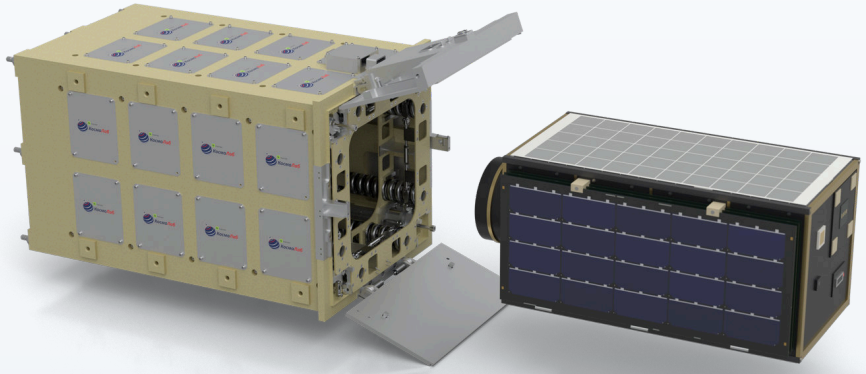
10 kg	**40** kg	**0.5–2.0** m/s	**≤ 1** s
deployer mass	satellite mass, max	separation velocity	from command to satellite separation

SPECIFICATIONS

Satellite	16U CubeSat, 226.3 × 226.3 × 454 mm over the rails
Dimensions, closed / open	630 × 346.3 × 378.3 / 753 × 346.3 × 468.1 mm
Tip-off rate	≤ 2 °/s
Separation velocity	tuned to the satellite mass by selection of the pusher springs
Door release	two electric locks — primary and backup, 28 ± 2 V
Telemetry switches	door open and pusher end of stroke — dry contacts
Mounting	8 × M8 studs on the rear panel or 8 × M8 points on a side face
Operating environment	−60 to +60 °C, pressure down to $1 \cdot 10^{-5}$ Torr
Service life	storage and launch preparation — 2 years, integrated on the launch vehicle — 2 weeks, in orbit — 24 h

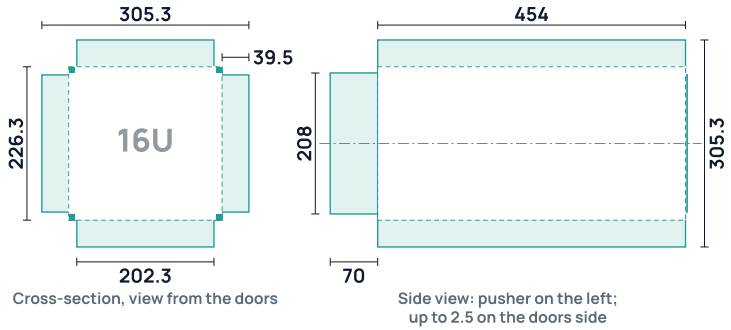
VERSIONS

VERSION	SATELLITE	DEPLOYER MASS	FEATURE
-0	16U, 454 mm	10 kg	baseline
-01	16U, 480 mm	10.6 kg	extended rails
-0-02	16U, 480 mm	11.3 kg	built-in BU-01 sequencer: no launch vehicle power required



Deployment of a notional satellite

SATELLITE ENVELOPE, MM



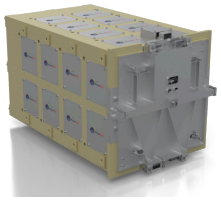
Cross-section, view from the doors

Side view: pusher on the left; up to 2.5 on the doors side

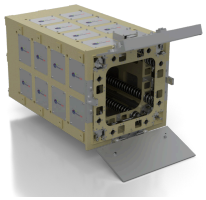
39.5 mm
protrusions beyond the rail faces; CDS limit: 6.5 mm

70 mm
on the pusher side, within a 208 × 208 mm envelope

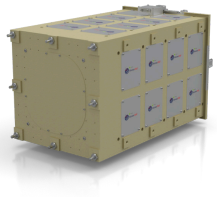
305.3 mm
overall satellite width including protrusions



Stowed configuration



Doors open



Rear panel — mounting points

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

Latest product information
https://KosmoLab.ru/en/products/cubesat-deployers-12-16u-ext/cubesat-deployers-ext-16u/

KosmoLab

Deployer 16U LIGHT EXT-01

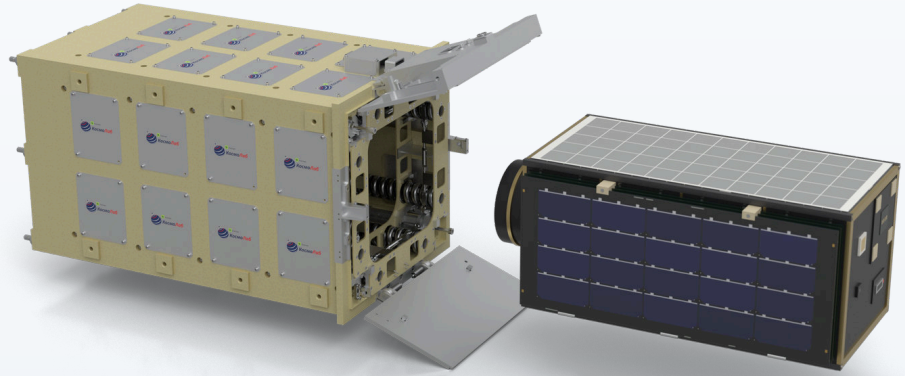
Deployer for 16U CubeSats with 480 mm rails

- For 16U satellites up to 40 kg with 480 mm rails
- Body 26 mm longer than the baseline; the same launch vehicle interfaces
- Protrusions up to 39.5 mm on each side (212 mm zones), up to 70 mm on the pusher side
- Redundant door release, door-open and deployment telemetry

10.6 kg	**40 kg**	**0.5–2.0 m/s**	**≤ 1 s**
deployer mass	satellite mass, max	separation velocity	from command to satellite separation

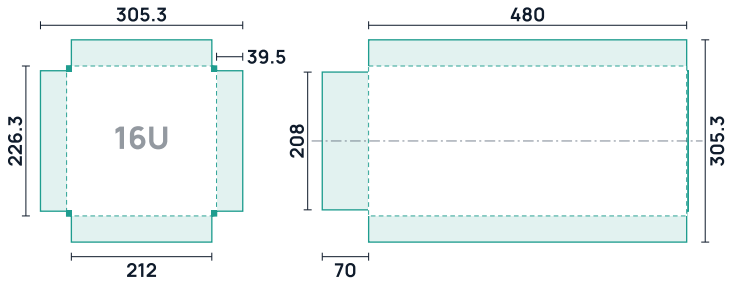
SPECIFICATIONS

Satellite	16U CubeSat, 226.3 × 226.3 × 480 mm over the rails
Dimensions, closed / open	656 × 346.3 × 378.3 / 779 × 346.3 × 468.1 mm
Tip-off rate	≤ 2 °/s
Door release	two electric locks — primary and backup, 28 ± 2 V
Telemetry switches	door open and pusher end of stroke — dry contacts
Mounting	8 × M8 studs on the rear panel or M8 screws into the body bosses
Operating environment	−60 to +60 °C, pressure down to $1 \cdot 10^{-5}$ Torr
Service life	storage and launch preparation — 2 years, integrated on the launch vehicle — 2 weeks, in orbit — 24 h



Deployment of a notional 16U satellite with 480 mm rails

SATELLITE ENVELOPE, MM



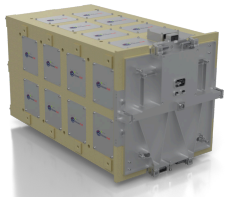
Cross-section, view from the doors

Side view: pusher on the left; up to 2.5 on the doors side

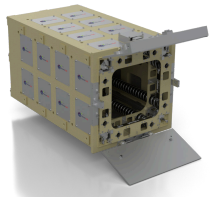
480 mm
rail length of the satellite

39.5 mm
protrusions beyond the rail faces, in 212 mm wide bands

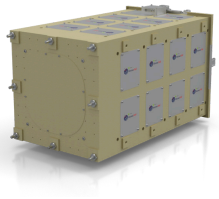
70 mm
on the pusher side, within a 208 × 208 mm envelope



Stowed configuration



Doors open



Rear panel — mounting points

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

KosmoLab

Deployer 16U LIGHT EXT-0-02

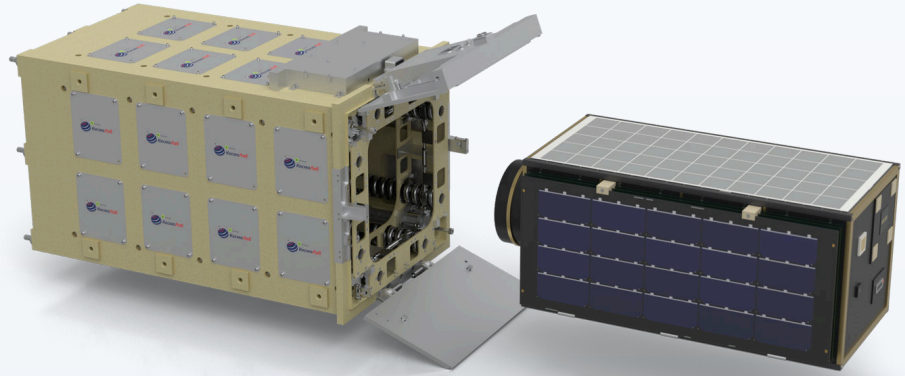
16U deployer (480 mm rails) with a built-in BU-01 deployment sequencer

- The -01 version with a built-in BU-01 deployment sequencer
- Only a command from the launch vehicle — no power; BU-01 is dormant until the command
- A pulse to both electric locks at once, automatic repeat
- Door and pusher status — in BU-01 telemetry

11.3 kg	**40** kg	**0.5–2.0** m/s	**≤ 0.84** s
mass with BU-01	satellite mass, max	separation velocity	from command to satellite separation

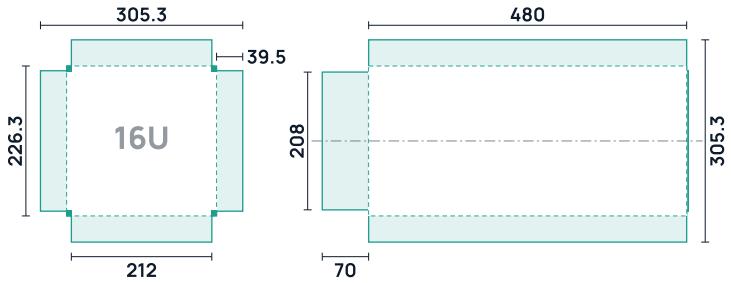
SPECIFICATIONS

Satellite	16U CubeSat, 226.3 × 226.3 × 480 mm over the rails
Dimensions, closed / open	656 × 346.3 × 381.6 / 779 × 346.3 × 468.1 mm
Control	launch vehicle command to BU-01 via dry contacts, electronic switches or LV voltage; mode 1 — a single command, mode 2 — arming and activation
Power from the LV	not required: BU-01 has internal batteries and is dormant until the command
Lock firing pulse	500 ± 5 ms to the primary and backup locks simultaneously, repeated after 512 s
Telemetry switches	doors 1 and 2 open, pusher end of stroke — via BU-01 telemetry
Tip-off rate	≤ 2 °/s
Temperature	deployer −60 to +60 °C; BU-01 at the time of the command — not below −10 °C
Service life	storage — 2 years; from BU-01 charging to launch — up to 6 months; in orbit — 24 h



Deployment of a notional satellite; BU-01 on the body panel

SATELLITE ENVELOPE, MM



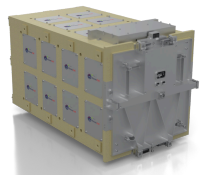
Cross-section, view from the doors

Side view: pusher on the left; up to 2.5 on the doors side

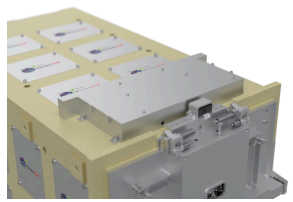
480 mm
rail length of the satellite

39.5 mm
protrusions beyond the rail faces, in 212 mm wide bands

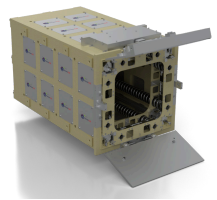
70 mm
on the pusher side, within a 208 × 208 mm envelope



Stowed configuration, BU-01 on the body



BU-01 on the body panel



Doors open

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

KosmoLab

CUBESAT DEPLOYERS

Deployer 12U LIGHT EXT

Composite-body deployer for a 12U CubeSat

- 12U CubeSat up to 28 kg
- The same envelope as the Deployer 16U LIGHT EXT: up to 39.5 mm on each side, up to 70 mm on the pusher side
- Redundant door release, door-open and deployment telemetry
- Version -0-04 with a built-in BU-01; multi-slot 3U/6U versions — page 08

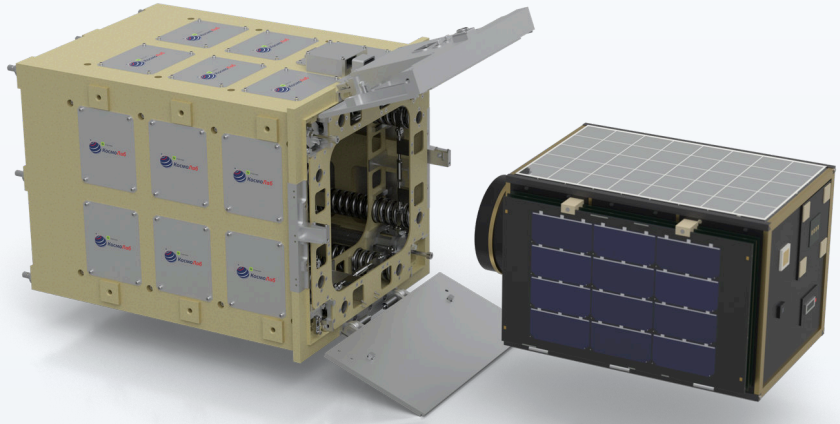
9 kg	28 kg	0.5–2.0 m/s	≤ 1 s
deployer mass	12U satellite mass, max	separation velocity	from command to satellite separation

SPECIFICATIONS

Satellite	12U CubeSat, 226.3 × 226.3 × 340.5 mm over the rails
Dimensions, closed / open	516.5 × 346.3 × 378.3 / 639.5 × 346.3 × 468.1 mm
Tip-off rate	≤ 2 °/s
Separation velocity	tuned to the satellite mass by selection of the pusher springs
Door release	two electric locks — primary and backup, 28 ± 2 V
Telemetry switches	door open and pusher end of stroke — dry contacts
Mounting	8 × M8 studs on the rear panel or 6 × M8 points on a side face
Operating environment	−60 to +60 °C, pressure down to $1 \cdot 10^{-5}$ Torr
Service life	storage and launch preparation — 2 years, integrated on the launch vehicle — 2 weeks, in orbit — 24 h

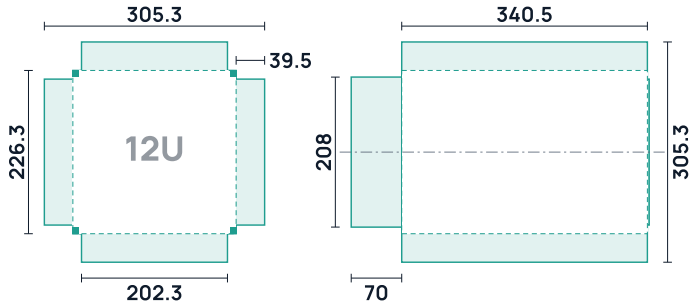
VERSIONS

VERSION	SATELLITE	DEPLOYER MASS	FEATURE
-0	12U	9 kg	baseline
-0-04	12U	9.7 kg	built-in BU-01: no launch vehicle power required
-01 to -03	3U / 6U	7.9–10.8 kg	multi-slot, page 08



Deployment of a notional 12U satellite

SATELLITE ENVELOPE, MM



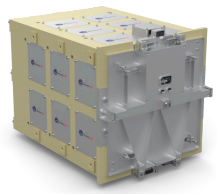
Cross-section, view from the doors

Side view: pusher on the left; up to 2.5 on the doors side

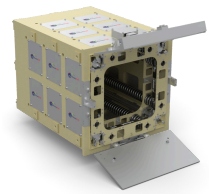
39.5 mm
protrusions beyond the rail faces; CDS limit: 6.5 mm

70 mm
on the pusher side, within a 208 × 208 mm envelope

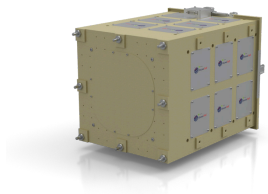
340.5 mm
rail length of the 12U satellite



Stowed configuration



Doors open



Rear panel — mounting points

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

KosmoLab

Deployer 12U LIGHT EXT 3U/6U

Multi-slot versions: a group of 3U and 6U satellites in one deployer

- The Deployer 12U LIGHT EXT body with partitions: 2 × 6U, 6U + 2 × 3U or 4 × 3U
- Each slot has its own door with two electric locks and its own pusher
- Independent deployment of each satellite on its own command
- The circuits of all slots — on one connector

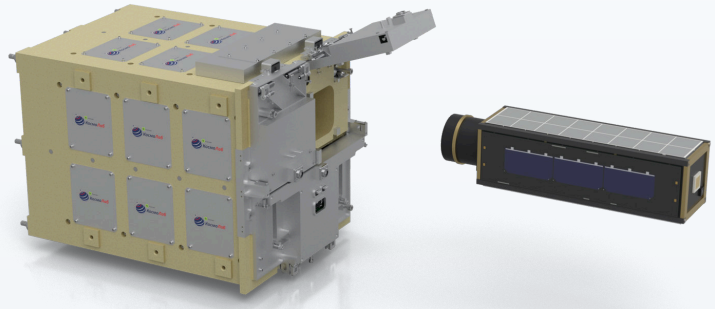
2–4 slots	**6 / 12** kg	**24** kg	**0.5–2.0** m/s
in one body	3U / 6U satellite, max	total satellite mass, max	separation velocity

SPECIFICATIONS

Satellites	3U CubeSat — 100 × 100 × 340.5 mm, 6U CubeSat — 226.3 × 100 × 340.5 mm over the rails
Dimensions, closed / open	516.5 × 346.3 × 378.3 / 634.8 × 346.3 × 500.1 mm
Door release and telemetry	primary and backup electric locks on each slot door, 28 ± 2 V; door and pusher switches
Electrical interface	one connector for all slots
Mounting	8 × M8 studs on the rear panel or M8 screws into the body bosses
Operating environment	−60 to +60 °C, pressure down to $1 \cdot 10^{-5}$ Torr
Service life	storage and launch preparation — 2 years, integrated on the launch vehicle — 2 weeks, in orbit — 24 h

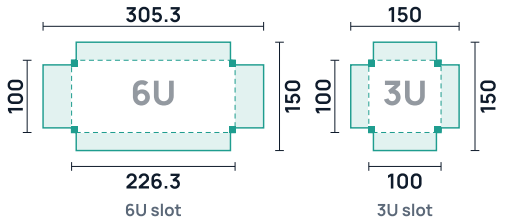
VERSIONS

VERSION	SLOTS	SATELLITE MASS	DEPLOYER MASS
-01	2 × 6U	up to 12 kg per slot	7.9 kg
-02	6U + 2 × 3U	12 / 6 kg per slot	9.3 kg
-03	4 × 3U	up to 6 kg per slot	10.8 kg



Version -02: a 3U satellite deploying from slot 2

SATELLITE ENVELOPE, MM

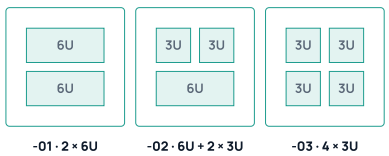


Side view (6U and 3U): pusher left, door side up to 2.5

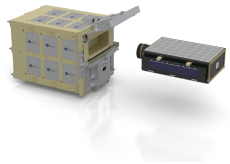
39.5 mm
6U satellite protrusions at the ends (100 mm faces)

25 mm
on the 226.3 mm faces of a 6U and on all faces of a 3U

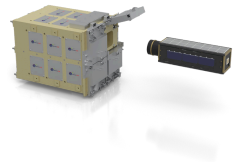
70 mm
on the pusher side: window 208 × 82 (6U), 82 × 82 (3U), R22



Slot layout, view from the doors



-01 · 2 × 6U: deployment from slot 1



-03 · 4 × 3U: deployment from slot 2

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

KosmoLab

Deployer 16U

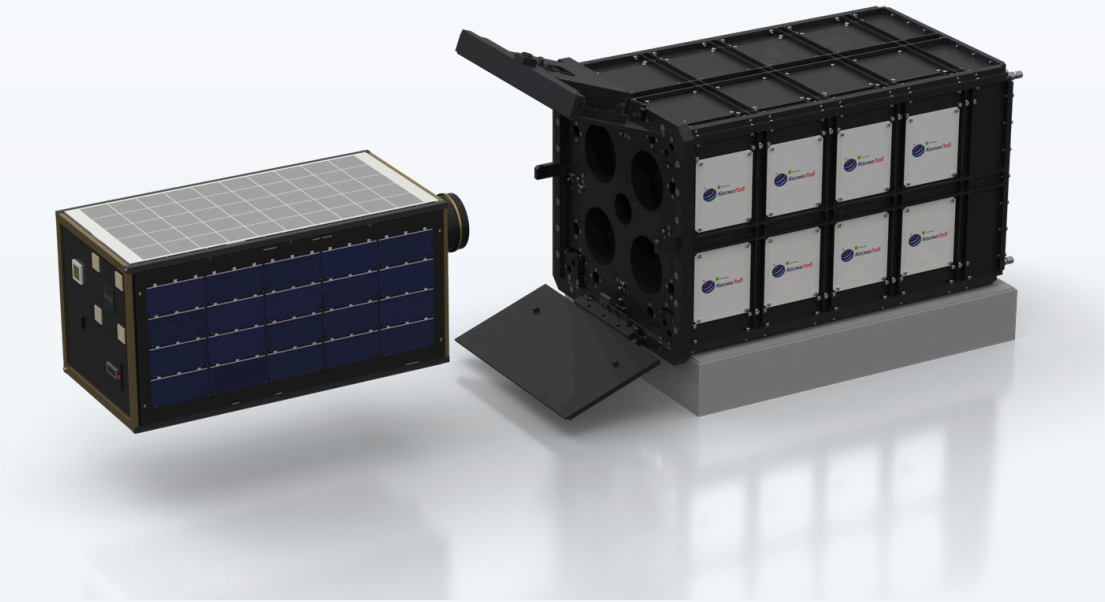
Metal deployer for 16U CubeSats

- Metal deployer for a 16U CubeSat up to 40 kg
- Two doors, each with primary and backup electric locks
- Rail preload holds the satellite during ascent
- Access windows for servicing the satellite at the launch site

≤ 17 kg	40 kg	0.5–2.0 m/s	≤ 1 s
deployer mass	satellite mass, max	separation velocity	from command to satellite separation

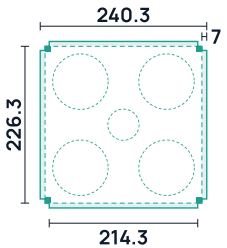
SPECIFICATIONS

Satellite	16U CubeSat, 226.3 × 226.3 × 454 mm over the rails
Dimensions, closed / open	600 × 348 × 370 / 717 × 348 × 498 mm
Tip-off rate	≤ 2 °/s
Door release	two electric locks on each door — primary and backup; signal 23–34 V, 2 A, 250–500 ms
Satellite retention	rail preload — laterally; pusher and doors — axially
Mounting	on the bottom panel (M8 threaded holes) or cantilevered from the rear end (M8 and M10 studs); Ø12f9 locating features
Servicing	removable window covers — access to the satellite at the launch site
Operating temperature	−60 to +60 °C
Service life	storage and launch preparation — 5 years, in orbit on the launch vehicle — 48 h

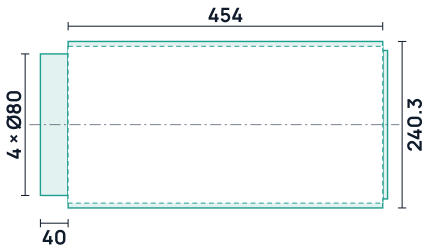


Deployment of a notional satellite

SATELLITE ENVELOPE, MM



Cross-section, view from the doors



Side view: up to 7 on the doors side

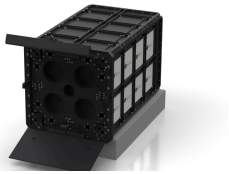
7 mm
protrusions beyond the rail faces

4 × Ø80
tuna cans on the pusher side, 40 mm deep, plus a Ø45 central tuna can

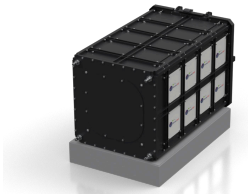
454 mm
rail length of the 16U satellite



Stowed configuration



Doors open, pusher at the end of its stroke



Rear panel — mounting points

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

Latest product information
https://KosmoLab.ru/en/products/cubesat-deployers-12-16u-series/cubesat-deployers-series-16u/

KosmoLab

Deployer 12U

Metal deployer for 12U CubeSats — four slot configurations

- Metal deployer: 1U–12U CubeSats, up to 24 kg in total
- Four slot configurations: 12U, 2 × 6U, 6U + 2 × 3U, 4 × 3U
- Two electric locks on each door; all connectors on the rear panel
- Access windows in the side panels

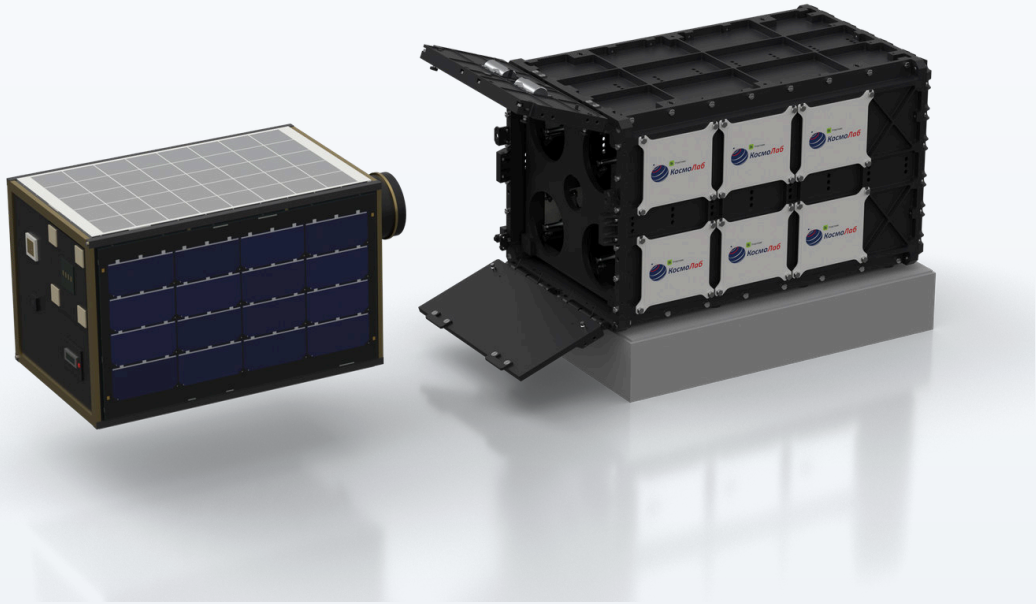
9.1–12.5 kg	24 kg	0.5–2.0 m/s	≤ 1 s
deployer mass by version	satellite mass, max	separation velocity	from command to satellite separation

SPECIFICATIONS

Satellites	1U to 12U CubeSats, slot configuration by version (table below)
Dimensions, closed / open	480 × 290 × 299 / 578 × 290 × 402 mm
Tip-off rate	≤ 2 °/s
Door release	two electric locks on each door — primary and backup; signal 23–34 V, 2 A, 250–500 ms
Telemetry, connectors	redundant door-open switches; all connectors on the rear panel
Mounting	on the bottom or rear panel, 8 × M6 points
Operating temperature	−60 to +60 °C
Service life	storage and launch preparation — 5 years; in orbit on the launch vehicle — 48 h, on the ISS — 2 years

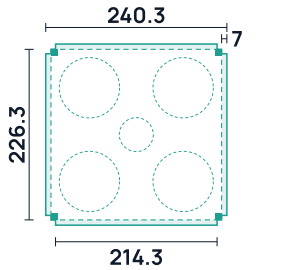
VERSIONS

VERSION	SLOTS	SATELLITE MASS	DEPLOYER MASS
-0	1 × 12U	up to 24 kg	≈ 9.1 kg
-0-01	2 × 6U	up to 12 kg per slot	≈ 10.3 kg
-0-02	6U + 2 × 3U	12 / 6 kg per slot	11.4 kg
-0-03	4 × 3U	up to 6 kg per slot	≈ 12.5 kg

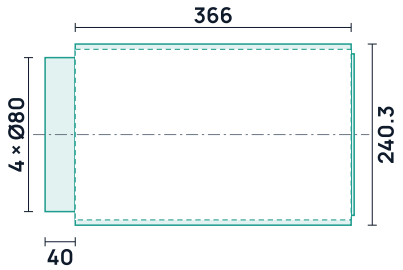


Deployment of a notional 12U satellite

SATELLITE ENVELOPE, MM



Cross-section, view from the doors

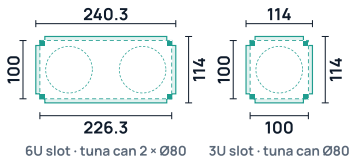


Side view: up to 4 on the doors side

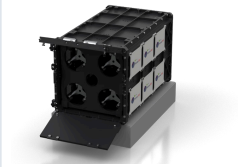
7 mm
protrusions beyond the rail faces

4 × Ø80
tuna cans on the pusher side, 40 mm deep, plus a Ø45 central tuna can

366 mm
rail length of the 12U satellite



6U and 3U slots of versions -0-01 to -0-03: protrusions up to 7 mm, tuna can on the pusher side



Doors open, pusher at the end of its stroke



Manufactured unit

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

Latest product information
https://KosmoLab.ru/en/products/cubesat-deployers-12-16u-series/cubesat-deployers-series-12u/

KosmoLab

Deployer 4U

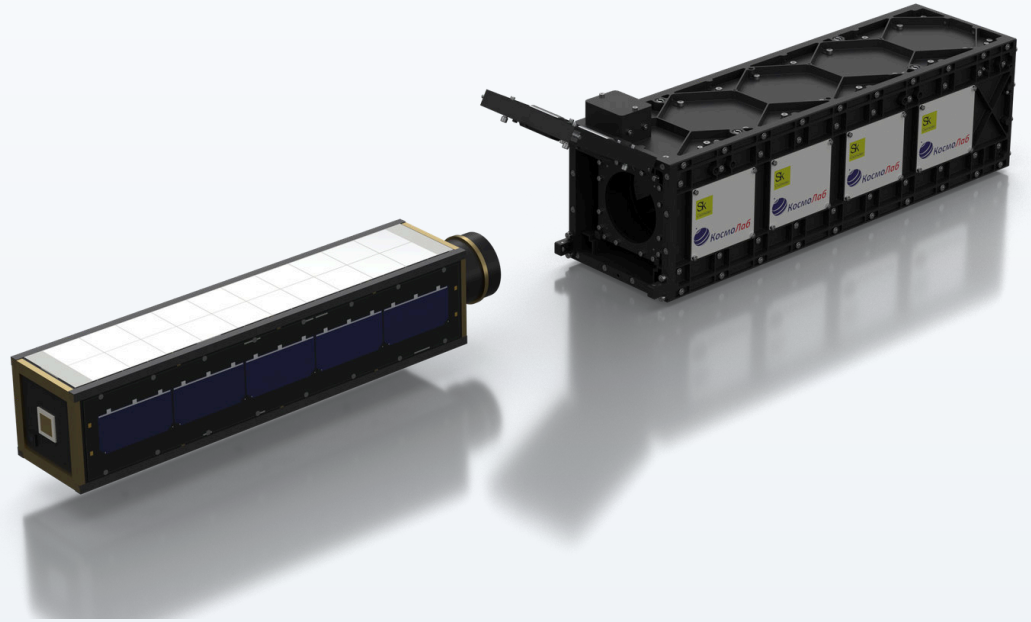
Deployer for 4U CubeSats

- 4U CubeSat up to 6 kg in a 4.6 kg deployer
- The door opens to 120°; the pusher drives the satellite out along the rails
- Redundant door release, door-open and deployment telemetry
- Adaptable to a 3U satellite and to the loads of a specific launch vehicle

4.6 kg	**6** kg	**0.5–2.0** m/s	**≤ 1** s
deployer mass	satellite mass, max	separation velocity	from command to satellite separation

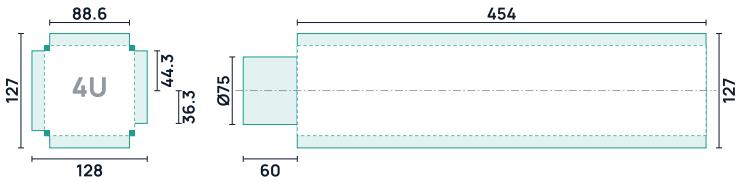
SPECIFICATIONS

Satellite	4U CubeSat, 100 × 100 × 454 mm over the rails
Dimensions, closed / open	556.7 × 186.6 × 157.6 / 674.7 × 231.2 × 157.6 mm
Tip-off rate	≤ 2 °/s
Separation velocity	tuned to the satellite mass by selection of the pusher spring
Door release	two electric locks — primary and backup, 28 ± 2 V
Telemetry switches	door limit switch and pusher switch — dry contacts
Mounting	M6 screws into threaded holes in the mounting face
Operating environment	−60 to +60 °C, pressure down to $1 \cdot 10^{-5}$ Torr
Service life	storage and launch preparation — 2 years, in orbit — 24 h



Deployment of a notional satellite

SATELLITE ENVELOPE, MM



Cross-section (door side)

Side view: pusher on the left; no protrusions on the door side

14 mm
protrusions beyond the rail faces (128 × 127 mm cross-section)

Ø75
tuna can on the pusher side, 60 mm deep; no protrusions on the door side

454 mm
rail length of the 4U satellite



Stowed configuration



Prototype



Prototype in the laboratory

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

Latest product information
https://KosmoLab.ru/en/products/cubesat-deployers-3-4u/cubesat-deployers-4u/

KosmoLab

SO-050

Deployment system KosmoLab for space satellites with mass up to 50 kg

- Satellites up to 50 kg; Ø200 mm interface to the satellite and the launch vehicle
- Smooth separation: the pushers stay in contact with the satellite over a 95 mm stroke
- Redundant release locks and separation switches
- Only a 0.46 kg ring stays on the satellite; the prototype has been tested

50 kg	**4.2** kg	**0.5–1.0** m/s	**60** kN
satellite mass, max	system mass	separation velocity	axial load at the interface

SPECIFICATIONS

Satellite-side ring (stays on the satellite)	0.46 kg
Height / footprint	60 mm to the separation plane / 423 × 358 mm
Tip-off rate	≤ 2 °/s
Separation time	≤ 1 s after the command
Release	two electric locks — either one is enough for separation; 28 ± 2 V
Telemetry switches	two separation switches, dry contacts
Interface loads (design)	lateral 10 kN, bending and torsional moments 2.6 kN·m each
Operating environment	−60 to +60 °C, pressure down to $1 \cdot 10^{-8}$ Torr
Ground test cycles	up to 10 separations

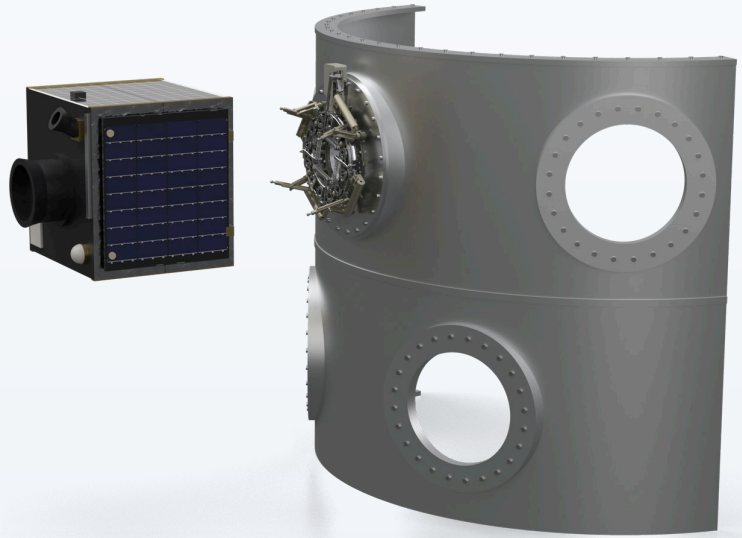
VERSIONS

SYSTEM	INTERFACE	SATELLITE MASS	SYSTEM MASS
SO-050	Ø200, 12 points	up to 50 kg	≤ 4.2 kg
SO-100	Ø400, 24 points	50–100 kg	≤ 8.0 kg
SO-200	Ø600, 36 points	100–200 kg	≤ 13.5 kg
SO-500	Ø800, 48 points	200–500 kg	≤ 20.0 kg

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

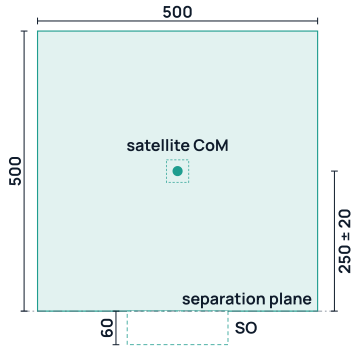
Latest product information
https://KosmoLab.ru/en/products/deployment-systems/deployment-systems-50-kg/

KosmoLab



SO-050 on a ring adapter of the launch vehicle (satellite and adapter are notional)

SATELLITE ENVELOPE, MM



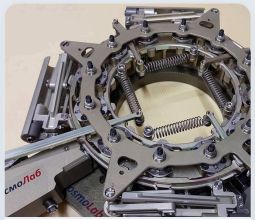
500 mm
satellite envelope — a 500 × 500 × 500 cube above the separation plane

250 ± 20 mm
satellite CoM above the separation plane; up to ±20 mm off the axis

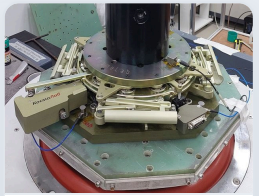
Ø200
interface to the satellite and the launch vehicle, 12 points



SO-050 · SO-100 · SO-200 · SO-500 to scale



Prototype



Vibration test with a mass dummy

DEPLOYMENT SEQUENCERS

BU-12 · BU-24 · BU-36

Deployment sequencers for groups of satellites

- On command from the launch vehicle — firing pulses to the deployer locks in a preset sequence
- Polls the door and pusher sensors, sends telemetry for every slot
- Dormant until the command: no launch vehicle power or pre-launch commands required
- No single failure causes an inadvertent or missed command

12 / 24 / 36	4.4–5.9 kg	28 V	≥ 14 days
channels (deployer slots)	mass	lock firing pulse	standby time on the launch vehicle

SPECIFICATIONS

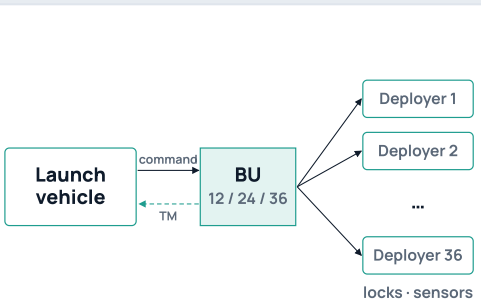
Per channel	primary and backup electric locks and three sensors
Dimensions	348 × 219.9 mm footprint, height by version (table below)
Power	internal batteries; no launch vehicle power required
Command from the LV	dry contacts (relays) or optocoupler outputs, or LV voltage 23–34 V; mode 1 — a single command, mode 2 — arming and activation
Lock firing pulse	2.0–2.6 A, 200–500 ms, per the sequence
Telemetry	parallel discrete signals over the LV discrete lines and/or RS-485
Operation after activation	up to 2 h; from charging to launch — up to 3 months
Temperature	operation −10 to +60 °C, storage −40 to +60 °C
Mechanical environment	quasi-static 12 g, shock up to 1500 g, acoustic 146.4 dB
Service life	2 years

VERSIONS

VERSION	CHANNELS	MASS	HEIGHT
BU-01	1	0.88 kg	30.3 mm, on the deployer
BU-12	12	4.4 kg	140.7 mm
BU-24	24	5.1 kg	165.7 mm
BU-36	36	5.9 kg	190.7 mm



BU-12, BU-24, BU-36



How it works



Rear side: deployer sensor connectors



KosmoLab deployment sequencer flown on 11 Apr 2024 (previous generation)

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

Latest product information
https://KosmoLab.ru/en/products/deployment-sequencer/

KosmoLab

BU-01

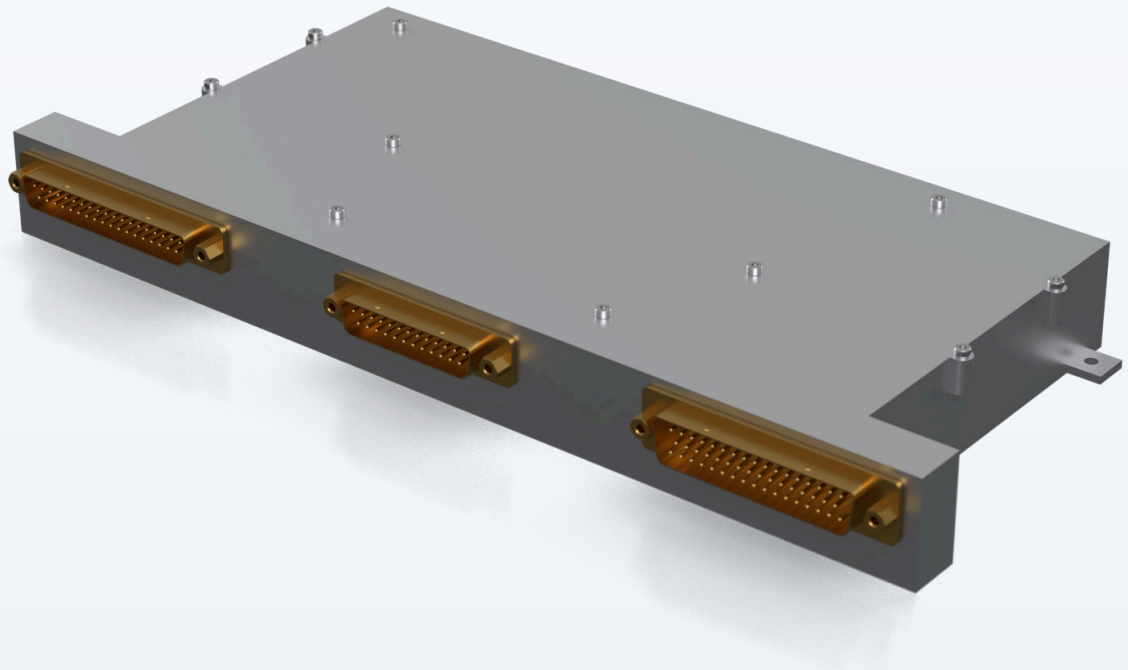
Deployment sequencer built into the Deployer 12U / 16U LIGHT EXT

- Single-channel sequencer in place of the deployer terminal box: versions 12U LIGHT EXT-0-04 and 16U LIGHT EXT-0-02
- On command from the launch vehicle it opens the doors itself and sends telemetry
- No separate sequencer on the launch vehicle — two connectors to the LV
- No single failure causes an inadvertent or missed pulse

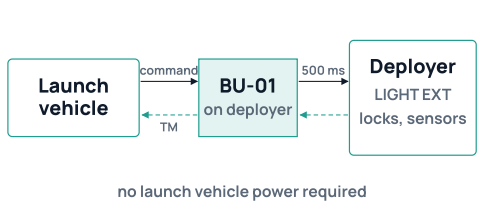
0.88 kg	1	500 ms	640 s
mass	channel	pulse to both electric locks	operation after the command

SPECIFICATIONS

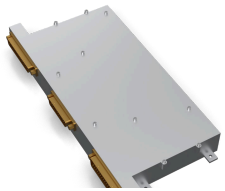
Dimensions	124.5 × 270 × 30.3 mm
Installation	on the Deployer 12U / 16U LIGHT EXT panel in place of the terminal box
Power	internal batteries; no launch vehicle power required, dormant until the command
Command from the LV	LV dry contacts or electronic switches, or LV voltage 23–34 V; mode 1 or mode 2
Lock firing pulse	500 ± 5 ms to the primary and backup locks simultaneously; repeated after 512 s
Telemetry inputs	doors 1 and 2 open, pusher end of stroke
Telemetry	two channels: parallel discrete signals, RS-485, hard-wired telemetry
From charging to launch	up to 6 months
Temperature	at the time of the command — not below −10 °C; storage and on the LV — −40 to +60 °C



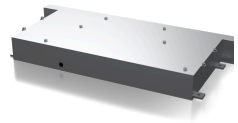
BU-01: control, telemetry and ground test connectors



How it works on the Deployer LIGHT EXT



Unit cover



Deployer mounting side

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

KosmoLab

Payload Adapter

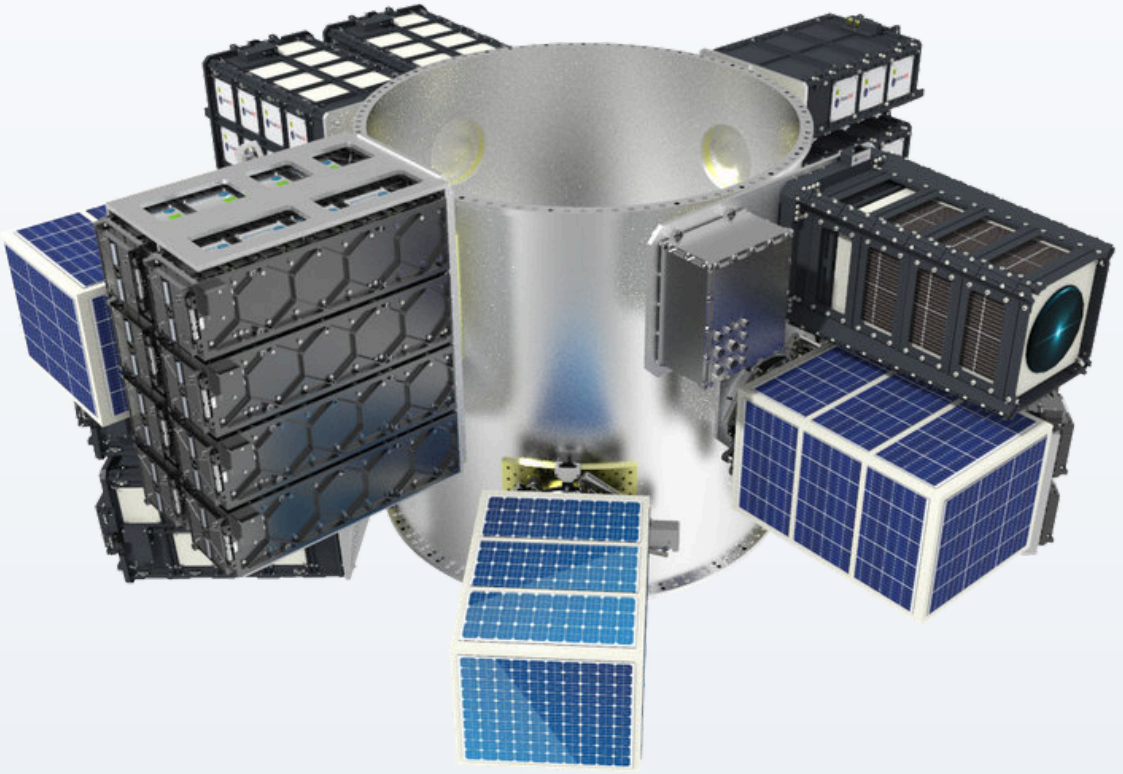
Multi-satellite adapter for cluster launch on a single launch vehicle

- Deployers and deployment systems with satellites in an optimized layout on one launch vehicle
- Designed to the customer's requirements: cluster objectives and launch vehicle mass properties
- KosmoLab composite design — reduced mass
- One supplier for the whole cluster: adapter, deployers, deployment systems and sequencer

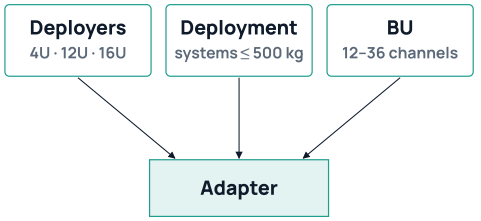
3U–16U	**≤ 500 kg**	**36**	**to spec**
KosmoLab deployers	satellites on deployment systems	slots per sequencer	mass and dimensions

SPECIFICATIONS

Purpose	mounting a group of deployers, deployment systems and a deployment sequencer on the launch vehicle
Cluster	Deployers 4U, 12U LIGHT EXT, 16U LIGHT EXT, deployment systems SO-050 to SO-500, deployment sequencers BU-01 to BU-36
Launch vehicle interface	per the mission specification
Mass properties	ensured by the layout to meet the launch vehicle requirements



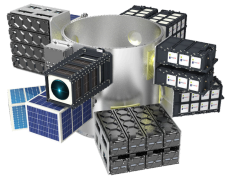
A cluster on the adapter (illustration)



Cluster composition



Layout option



Layout option

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

Latest product information
https://KosmoLab.ru/en/products/payload-adapter-for-lv/

KosmoLab

COMPONENTS

Electric Lock 28 V

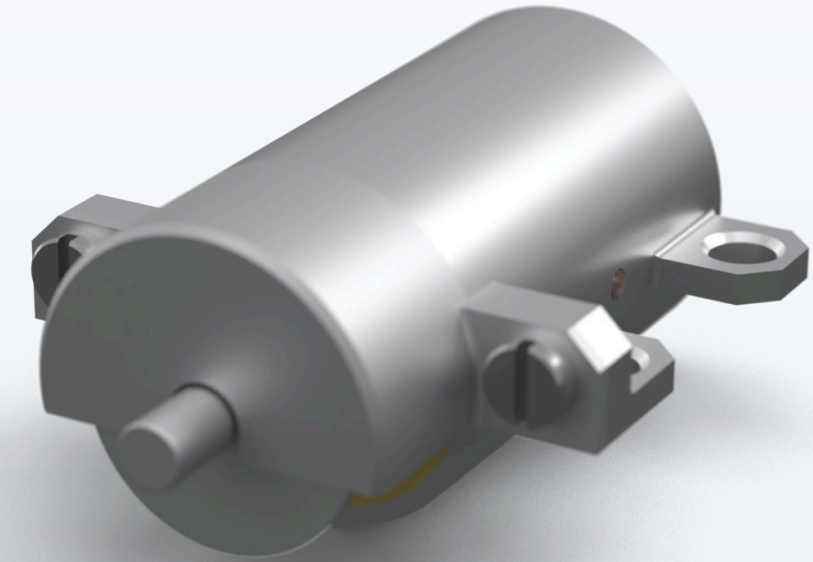
Pin-puller release actuator for space mechanisms

- Releases mechanisms on space hardware
- Used in KosmoLab deployer and deployment system mechanisms
- Can be adapted to customer specifications
- Turnkey development, manufacturing and testing of the actuating mechanism

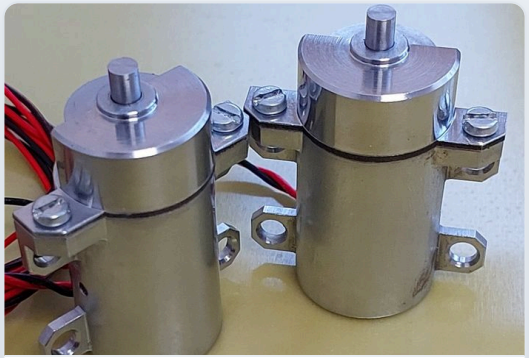
≤ 0.1 kg	28 ± 2 V	≥ 4.5 mm	±60 °C
mass	pulse voltage	pin stroke	operating temperature

SPECIFICATIONS

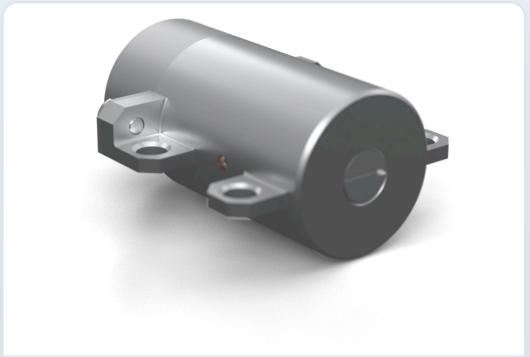
Dimensions	48.7 × 37.4 × 22.4 mm
Power	pulse of no more than 0.5 s; up to 34 V permissible



Pin extended — the mechanism is locked



Manufactured 28 V electric locks



Housing and mounting points

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

Latest product information
https://KosmoLab.ru/en/products/elektric-lock/elektric-lock-28v/

KosmoLab

COMPONENTS

Solar Cell 16U

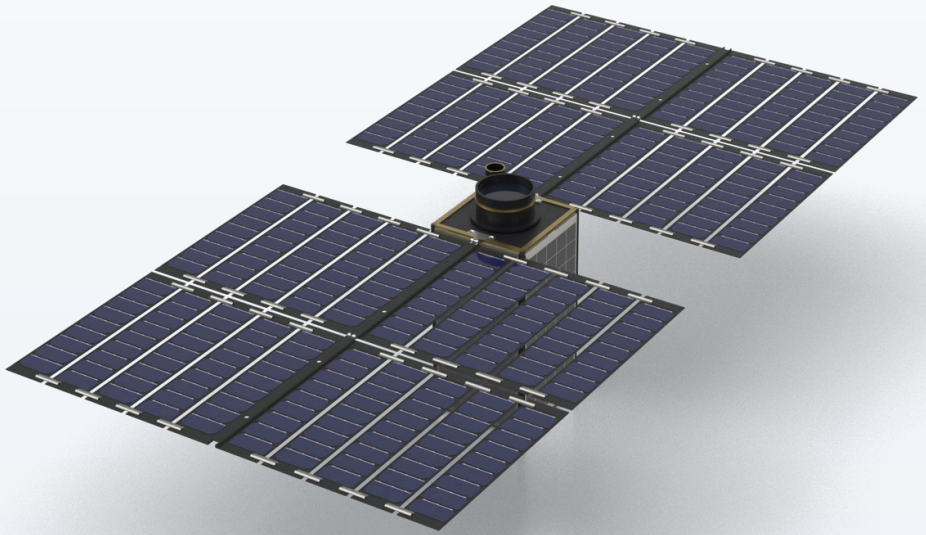
Ultra-thin unfolding solar cell for CubeSats

- Unfolds to 1.76 m² — far more room for solar cells than the satellite faces offer
- Stowed, fits the standard 16U CubeSat envelope
- Solar cells and electrical parameters to suit your satellite
- Unfolds on command from the satellite: KosmoLab release and unfolding mechanisms

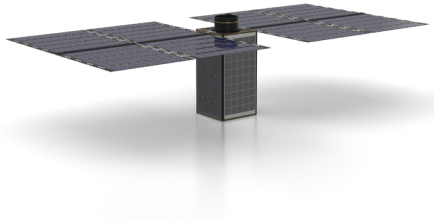
1.76 m²	1.20 m²	≤ 4 kg	11 mm
panel area	solar cell area	mass	stowed thickness

SPECIFICATIONS

Number of panels	20 (2 × 10)
Stowed dimensions	2 × 452 × 210 × 11 mm
Solar cell type and electrical parameters	to specification
Unfolding	on command from the satellite: KosmoLab release and unfolding mechanisms



— Solar cell unfolded (the satellite is notional)



Deployed configuration



Stowed — within the CubeSat envelope

info@KosmoLab.ru
+7 (916) 265-89-29
https://KosmoLab.ru/en/

KosmoLab

LAUNCH SERVICES

Turnkey rideshare launch

Launch selection, integration and confirmation of deployment in the target orbit

2027 MANIFEST

QUARTER	LAUNCH	ORBIT
Q3 2027	**Start-1M / Rideshare LEO #1 — 2027** Vostochny Cosmodrome	LEO 200–750 km — 51.6° / 89.0°
Q4 2027	**Soyuz-2.1a / Rideshare LEO #1 — 2027** Baikonur Cosmodrome	LEO 500 × 500 km — 51.8°
Q4 2027	**Start-1M / Rideshare LEO #2 — 2027** Vostochny Cosmodrome	LEO 200–750 km — 51.6° / 89.0°

STEPS

01 Technical consulting and specification

02 Launch vehicle compatibility check

03 Launch contract and payment

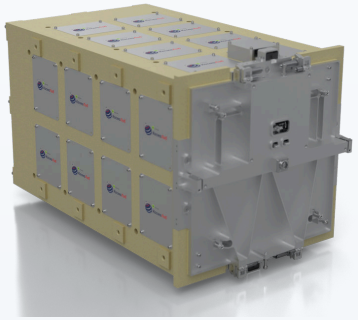
04 Satellite integration and testing

05 Delivery to the cosmodrome

06 Confirmation of deployment in orbit



LAUNCH COST SAVINGS



−7 kg

per 16U satellite: composite Deployer 16U LIGHT EXT — 10 kg, metal Deployer 16U — up to 17 kg*

SAVINGS FOR A CONSTELLATION

SATELLITES	MASS SAVED	SOYUZ-2.1A / FREGAT	START-1M
1 × 16U	−7 kg	RUB 4.93M	RUB 21M
4 × 16U	−28 kg	RUB 19.7M	RUB 84M
8 × 16U	−56 kg	RUB 39.5M	RUB 168M
12 × 16U	−84 kg	RUB 59.2M	RUB 252M

* KosmoLab deployer masses: Deployer 16U LIGHT EXT — 10 kg, Deployer 16U — up to 17 kg; the LIGHT EXT also offers an enlarged satellite envelope — up to 39.5 mm beyond the rail faces (7 mm for the standard Deployer 16U). The savings estimate is indicative.

WHY KOSMOLAB

11 Apr 2024 — flight heritage: a KosmoLab deployer and sequencer deployed two CubeSats on Angara-A5 / Orion

One supplier — our own deployers, deployment systems and sequencers — one contractor is responsible for the launch vehicle interface

License — Roscosmos space activity license; Skolkovo Innovation Center resident

Calculate your launch

Online configurator: choose a launch, satellites and deployers — get the price and request a quotation.

https://KosmoLab.ru/en/launch-services/

KosmoLab

We secure the optimal launch for your satellite



https://KosmoLab.ru/en/ — products, launch services and the launch configurator

E-MAIL

info@KosmoLab.ru

WEBSITE

https://KosmoLab.ru/en/

PHONE

+7 (916) 265-89-29

ADDRESS

Office 15, 8 Komsomolskaya St., Korolev, Moscow Region, 141071, Russia

KosmoLab LLC · TAX-ID 9731007706 · 2018–2026

Sk Resident