

# HECTOR



**nimesis**

## SMART ROTATIVE ACTUATOR

*Articulations designed for the deployment of solar panels, antennas and more*

*Adapted to satellites, from 1U to large ones*

HECTOR® smart rotative actuators family provides a simple, unique, and efficient solution for rotation in space mechanisms.

- ▶ Shockless: progressive deployment
- ▶ Wide operating temperature range (from -120°C to +80°C)
- ▶ Compatible with a broad range of satellites and spacecrafts
- ▶ 90° and 180° deployment
- ▶ High torque: up to 120 N.m

Continuous and soft deployment

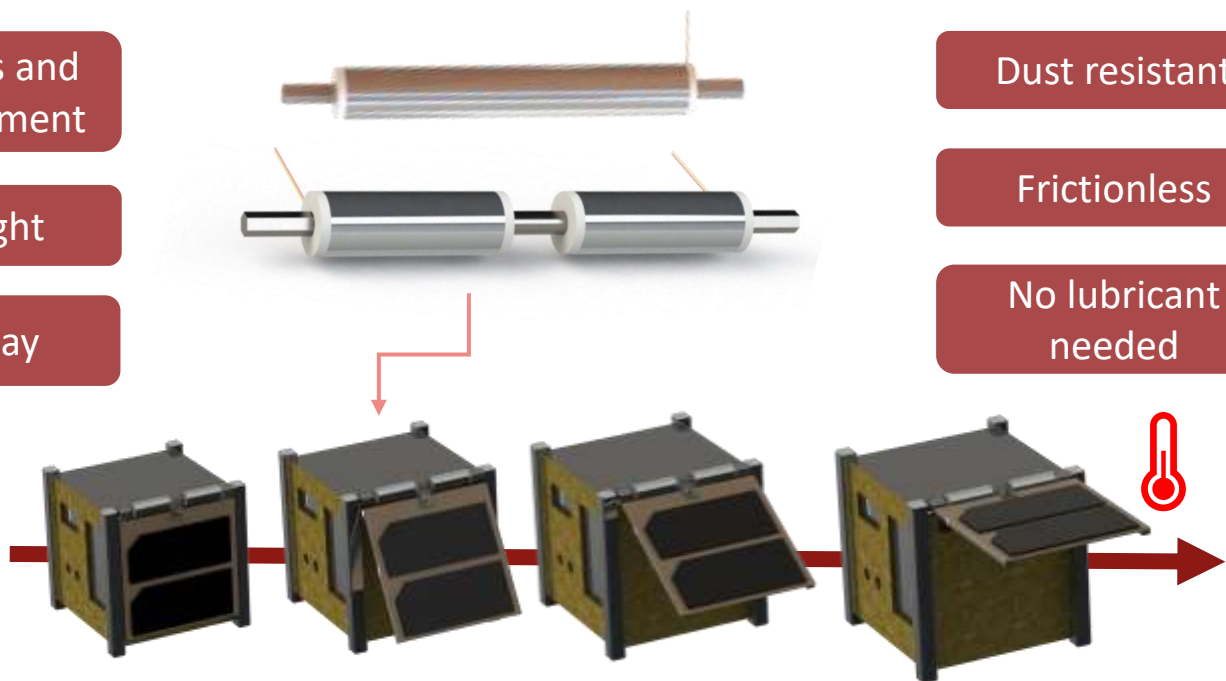
Lightweight

Plug & play

Dust resistant

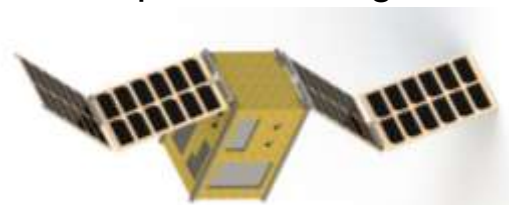
Frictionless

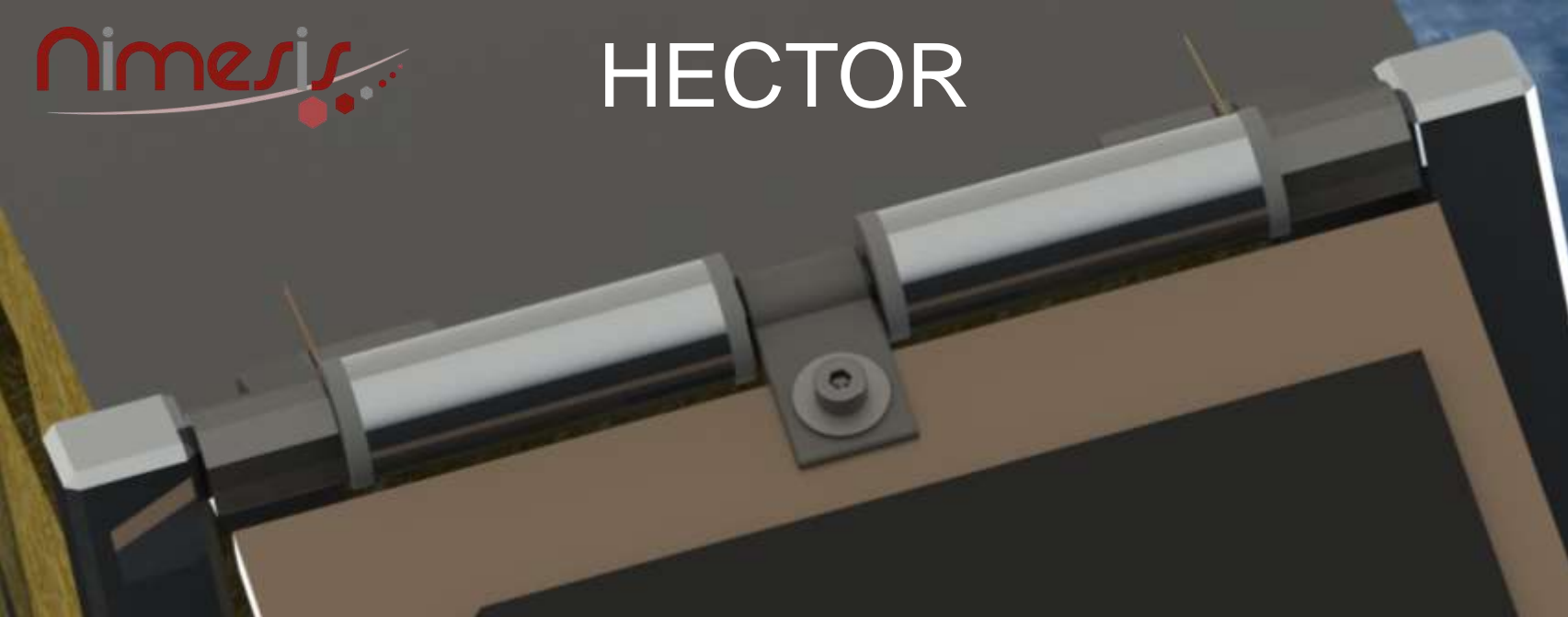
No lubricant needed



## FEATURES

- ▶ SMA component (Shape Memory Alloy)
- ▶ 2 Heaters (main and redundant)
- ▶ Temperature sensors
- ▶ Custom mechanical interface
- ▶ Material: NiTi (CTE:  $11 \cdot 10^{-6} / K$ )
- ▶ At least 50 cycles
- ▶ In orbit temperature range: -120 to +80°C

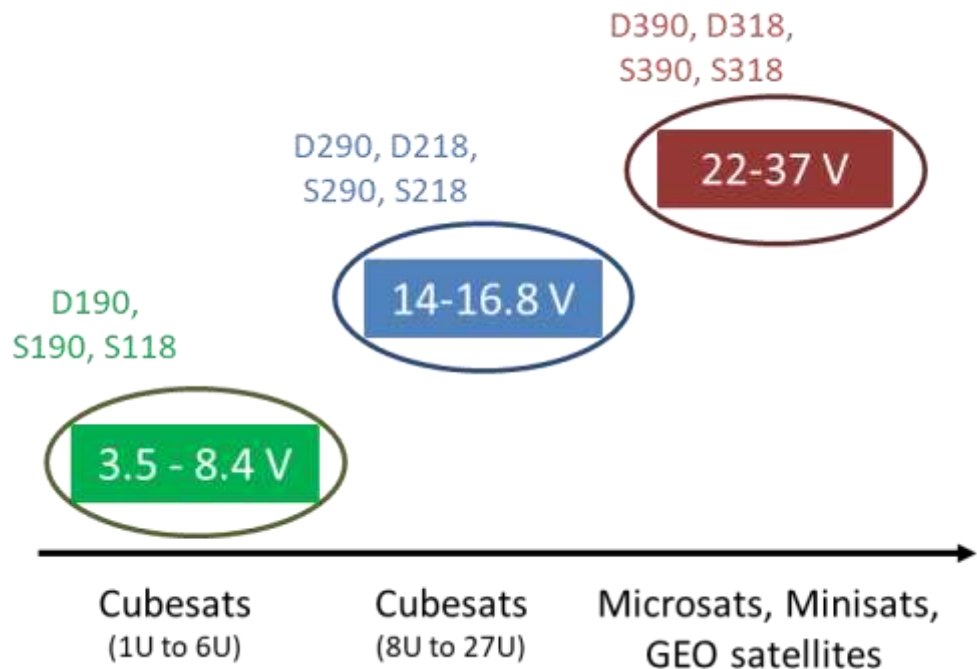




## MECHANICAL FIXATION



## ELECTRICAL INTERFACES



## ANTI-RETURN SYSTEM

- + Higher deployment accuracy
- ▶ Mechanical set-up needed

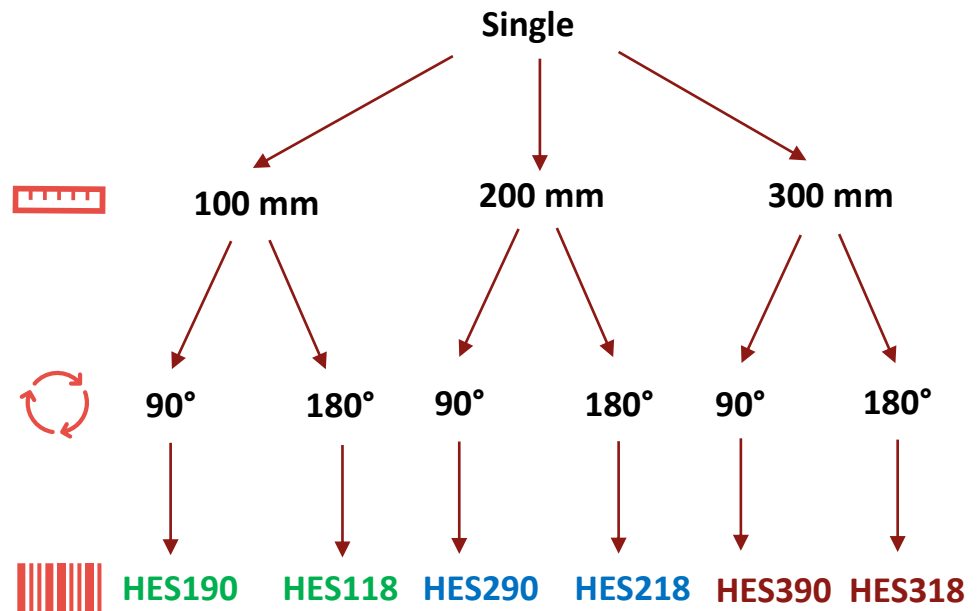
## GUIDANCE SYSTEM

- + Higher deployment accuracy
- + Better stability

*For more information, please contact us*

## TECHNICAL DATA

## HECTOR Single Torsion Rods



HECTOR® (SINGLE)		HES190	HES118	HES290	HES218	HES390	HES318
Dimensions	<b>Total length (mm)</b>	90		180		270	
	Fasteners length (mm)	2 x 10	2 x 5	2 x 15	2 x 10	2 x 25	2 x 15
	Operational length (mm)	70	80	150	160	220	240
	Diameter (mm)	12.8	9.7	21.1	13.8	28.4	18.0
Rotation	<b>Nominal deployment angle (°)</b>	<b>90</b>	<b>180</b>	<b>90</b>	<b>180</b>	<b>90</b>	<b>180</b>
	Maximal deployment angle (°)	110	220	110	220	110	220
	Deployment accuracy <sup>1</sup> (°)	2	4	2	5	2	4
	Reproductibility (°)	1	2	1	2	1	2
Mechanical	<b>Maximal torque (N.m)</b>	<b>6</b>	<b>1</b>	<b>56</b>	<b>8</b>	<b>118</b>	<b>29</b>
	Torsional stiffness (hot) (Nm/°)	1,7	0,2	17	1,2	53	4,3
	Torsional stiffness (cold) (Nm/°)	0,2-1,7	0,02-0,2	1,8-17	0,1-1,2	5,8-53	0,5-4,3
	Mass (g)	32	11	292	82	941	280
Electrical	<b>Power (W)</b>	<b>32</b>	<b>11</b>	<b>145</b>	<b>41</b>	<b>469</b>	<b>140</b>
	Nominal voltage <sup>2</sup> (V)	8	8	16	16	110	28
	Nominal current (A)	4	1,5	9	2,5	4,5	5
	Actuation duration (s)	300	300	600	600	600	600

<sup>1</sup>: After at least 50 cycles

<sup>2</sup>: Other voltage on demand

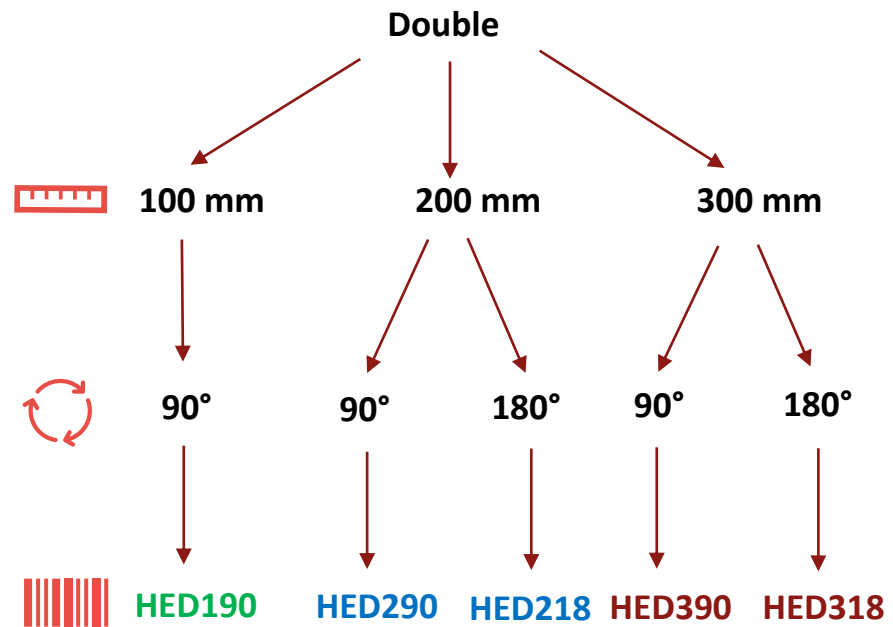
**+** High torques

**+** Easy set-up



## TECHNICAL DATA

## HECTOR Double Torsion Rods



HECTOR® (DOUBLE)		HED190	HED290	HED218	HED390	HED318
Dimensions	Total length (mm)	90	180		270	
	Fasteners length (mm)	2 x 5	2 x 10	2 x 5	2 x 15	2 x 10
	Middle fastener length (mm)	10	20		40	
	Diameter (mm)	9.1	12.7	9.4	15.9	11.0
Rotation	Nominal deployment angle (°)	90	90	180	90	180
	Maximal deployment angle (°)	110	110	220	110	220
	Deployment accuracy <sup>1</sup> (°)	2	2	4	2	4
	Reproductibility (°)	1	1	2	1	2
Mechanical	Maximal torque (N.m)	2	11	2	33	7
	Torsional stiffness (hot) (Nm/°)	0,2	1,6	0,1	4,9	0,4
	Torsional stiffness (cold) (Nm/°)	0,02-0,2	0,2-1,6	0,01-0,1	0,5-4,9	0,04-0,4
	Mass (g)	8	62	18	194	52
Electrical	Power (W)	8	62	18	97	27
	Nominal voltage <sup>2</sup> (V)	8	16	16	28	28
	Nominal current (A)	1	4	1	3,5	1
	Actuation duration (s)	300	300	600	600	300

<sup>1</sup>: After at least 50 cycles

<sup>2</sup>: Other voltage on demand

**+** Good mechanical stability

**+** Lower volumes

**+** Low power needed