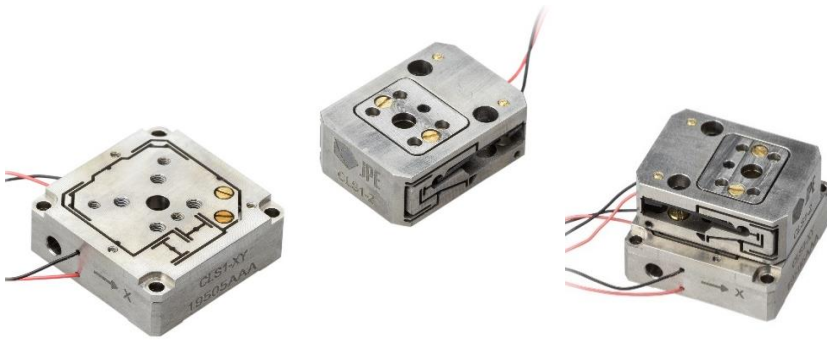


# CLS<sub>1</sub> – CRYO LINEAR SCANNER 1



## Features

- xy and z model, xyz configurable
- Non-magnetic
- Flexure mechanism
- Robust: easy handling and high load capacity
- High driving stiffness
- Open aperture
- 20 mK to 375K, vacuum compatible
- Bipolar driving voltage in cryo to increase stroke
- Dynamic operation

## Description / Applications

The CLS<sub>1</sub> is the smallest model in the CLS series. A non-magnetic linear scanner series for all-round fine positioning applications in a cryo-vacuum. Special attention is given to realize a robust and rigid mechanism that can tolerate significant handling and payload forces. The central open aperture allows the transfer of fibers, wires, or light through the scanner body. The xy-scanner can be combined with the z-scanner for motion along all 3 linear axes.

## Specifications

General info		
Type of motion	Scanning, xy and z, configurable to xyz	
Dimensions	See drawings below	
Operational environmental conditions	20 mK to 375 K, ambient to UHV	
Weight	xy 15 g	z 10 g
Scanning motion		
Scanning range @ 300 K	xy 30 x 30 micron	z 27 micron
Scanning range @ 4 K	xy 14 x 14 micron	z 13 micron
Minimal step size	Sub-nm	
Drive voltage @ 300 K	-30 V to 120 V	
Drive voltage @ 4 K	-150 V to 150 V	
No load resonance frequency	xy 600 Hz	z 400 Hz
Forces and load capacity		
Load capacity	5 N all directions	
Materials		
Main body	Titanium	
Piezo actuator	Low voltage multilayer, ceramic insulated	
Electronics CPSC		
Controller Base Cabinet	CAB	
Driver for stepping and scanning	CADM or PSM	

## Ordering Information

### Available models

CLS1-XY	Cryo Linear Scanner 1-XY
CLS1-Z	Cryo Linear Scanner 1-Z

### Available Options

-HV	Upgrade to High Vacuum compatibility
-UHV	Upgrade to Ultra High Vacuum compatibility

### Accessories

I1-CLS1	Interface plate to mount CLS1-XY or CLS1-Z on CBS10 positioner
AKM1	Accessory Kit Mechanical 1
AKE1	Accessory Kit Electrical 1

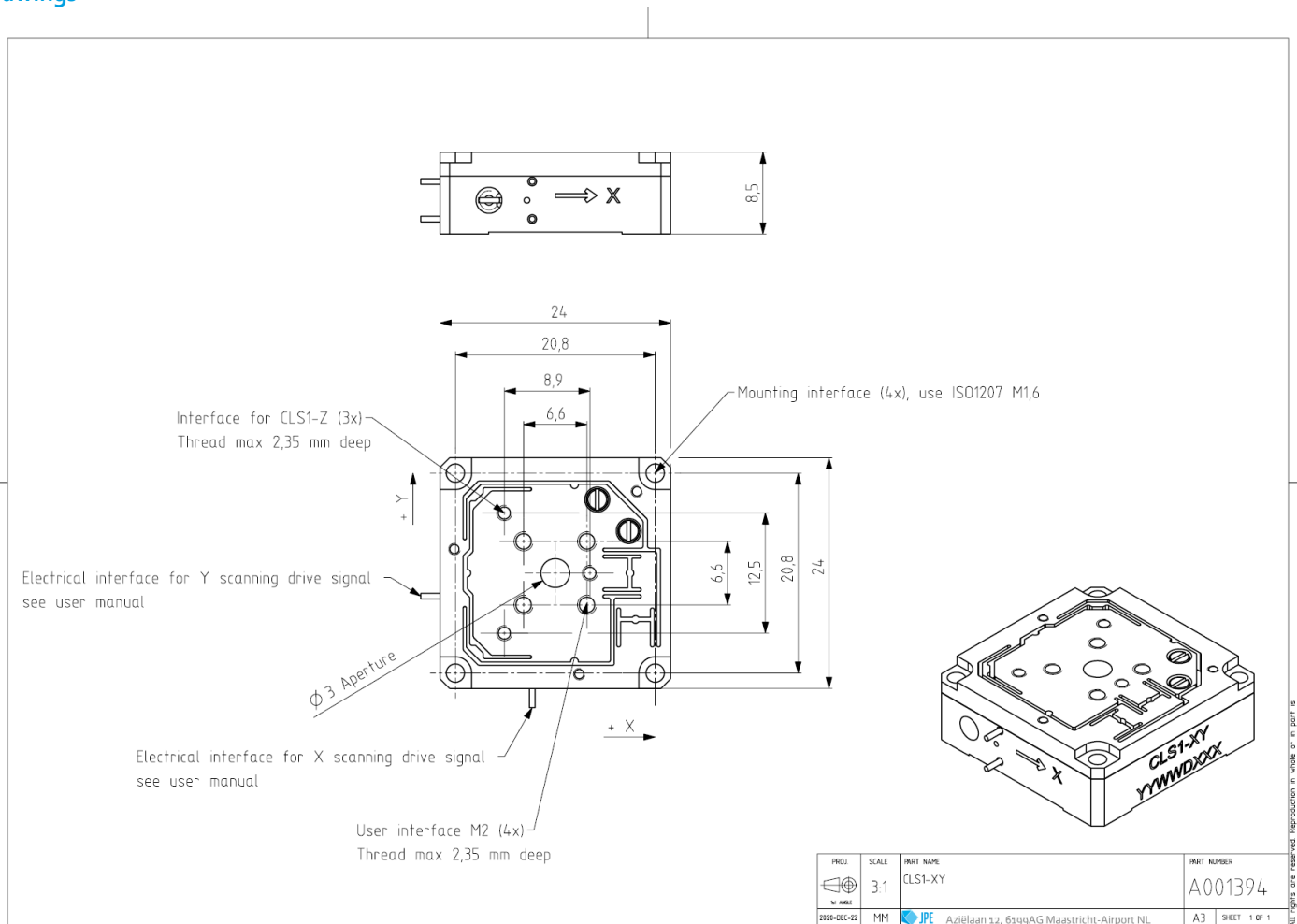
### Mechanical and electrical information

Download 3D step files and manuals from:  
<https://www.jpe-innovations.com/cryo-nano-products/>

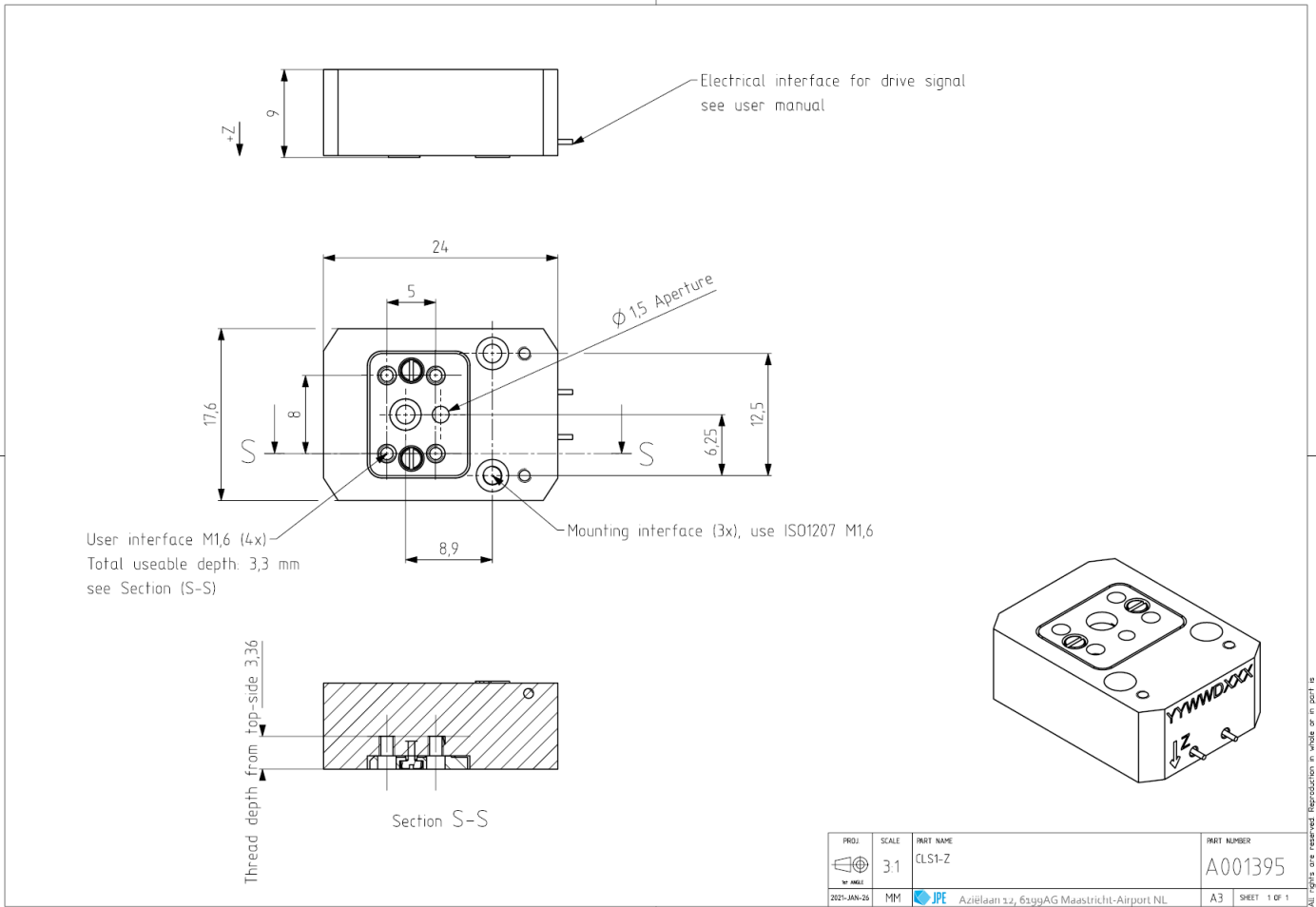
### Contact

For quotations, specials, or engineering services, please contact us at:  
<https://www.jpe-innovations.com/contact/>

## Drawings



STATUS: RELEASED



PROJ 	SCALE 3:1	PART NAME CLS1-Z	PART NUMBER A001395
2021-JAN-26	MM	 Aziëlaan 12, 6519AG Maastricht-Airport NL	A3 SHEET 1 OF 1

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STATUS: RELEASED

## CLS<sub>2</sub> – CRYO LINEAR SCANNER 2



### Features

- xy model
- Non-magnetic
- Flexure mechanism
- Robust: easy handling and high load capacity
- High driving stiffness
- Open aperture through the scanner body
- 20 mK to 375K, vacuum compatible
- Bipolar driving voltage in cryo to increase stroke
- Dynamic operation

### Description / Applications

The CLS<sub>2</sub> is the larger model in the CLS series. Not only does this allow placement of larger items, but it also offers an increased scan range, making this a non-magnetic linear scanner for all-round fine positioning applications in a cryo-vacuum. Special attention is given to realize a robust and rigid mechanism that can tolerate significant handling and payload forces. The central open aperture allows the transfer of fibers, wires, or light through the scanner body.

### Specifications

General info	
Type of motion	Scanning, xy
Dimensions	See drawings below
Operational environmental conditions	20 mK to 375 K, ambient to UHV
Weight	63 g
Scanning motion	
Scanning range @ 300 K	135 x 135 micron
Scanning range @ 4 K	50 x 50 micron
Minimal step size	Sub-nm
Drive voltage @ 300 K	-30 V to 120 V
Drive voltage @ 4 K	-150 V to 150 V
No load resonance frequency	550 Hz
Forces and load capacity	
Load capacity	5 N all directions
Materials	
Main body	Titanium
Piezo actuator	Low voltage multilayer, ceramic insulated
Electronics CPSC	
Controller Base Cabinet	CAB
Driver for stepping and scanning	CADM or PSM

## Ordering Information

### Available models

CLS2-XY                      Cryo Linear Scanner 2-XY

### Available Options

-HV                              Upgrade to High Vacuum compatibility  
 -UHV                            Upgrade to Ultra High Vacuum compatibility

### Accessories

AKM1                            Accessory Kit Mechanical 1  
 AKE1                            Accessory Kit Electrical 1

### Mechanical and electrical information

Download 3D step files and manuals from:  
<https://www.jpe-innovations.com/cryo-nano-products/>

### Contact

For quotations, specials, or engineering services, please contact us at:  
<https://www.jpe-innovations.com/contact/>

## Drawings

