CS021 – CRYO STAGE 021





Features

- Orthogonal xyz motion
- 1kg lifting capacity
- Non-magnetic (on request)
- 20mK to 375K, vacuum compatible
- Position feedback option -RLS
- XYZ scanning functionality incorporated
- Gold plated OFHC reference frame, accessory

Description / Applications

The CS021 offers orthogonal xyz positioning with high load capacity in a compact and robust package. It combines 2 CBS10 positioners for xy motion with a CLA2601 positioner for vertical motion. The latter allows the CS021 to lift loads up to 1kg. The detachable OFHC reference frame offers users a rigid and stationary interface to attach for instance probes or optics close to the moving table.

Specifications

General info	
Type of motion	Linear, xyz
Dimensions	See interface drawings below
Operational environmental conditions	20 mK to 375 K, ambient to UHV
Weight	200 g, -RLS adds 30 g
Stepping motion	
Travel range	Up to 10 mm x 10 mm x 5 mm, see drawing
xy positioners	CBS10
z positioner	CLA2601
Velocity @ 300 K	xy 3 mm/s, z 10 µm/s
Velocity @ 4 K	xy 1 mm/s, z 5 µm/s
Minimal step size @ 300 K	xy 150 nm, z 15 nm
Minimal step size @ 4 K	xy 50 nm, z 5nm
Drive voltage	-30 V to 120 V
Scanning motion	
xy scanner	Built-in functionality of CBS10
z scanner	Piezo actuator (fourth axis)
Scanning range @ 300 K	10 µm x 10 µm x 10 µm
Scanning range @ 4 K	2 µm x 2 µm x 2 µm
Minimal step size	Sub-nm
Drive voltage @ 300 K	-30 V to 120 V
Drive voltage @ 4 K	-30 V to 120 V
Forces and load capacity	
Driving force @ 300 K	xy 1 N, z 10 N
Driving force @ 4 K	xy 1 N, z 10 N
Load capacity	1 kg
Materials	
Main body	Aluminum
CBS10	Titanium, ceramic, piezo actuator*
CLA2601	Stainless steel 316L, ceramic, piezo actuator*
Z-scanner	Piezo actuator*
*Piezo actuator	Low voltage multilayer, ceramic insulated
Model specific information	
-RLS	Resistive Linear Sensor, typical resolution 100 nm RMS
-V, -HV or -UHV	Level of vacuum compatibility, see the glossary on the homepage for details
Electronics CPSC	
Controller Base Cabinet	CAB
Driver for stepping and scanning	CADM
Position readout	RSM

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Ordering Information

Available Models

CS021-V	Cryo Stage 021
CS021-RLS-V	Cryo Stage 021-Resistive Linear Sensor

Available Options

-HV	Upgrade to High Vacuum compatibility
-UHV	Upgrade to Ultra High Vacuum compatibility (not available for -RLS model)

Accessories

I1-CS021	Cryo Stage 021 Reference Frame
AKM1	Accessory Kit Mechanical 1
AKE1	Accessory Kit Electrical 1

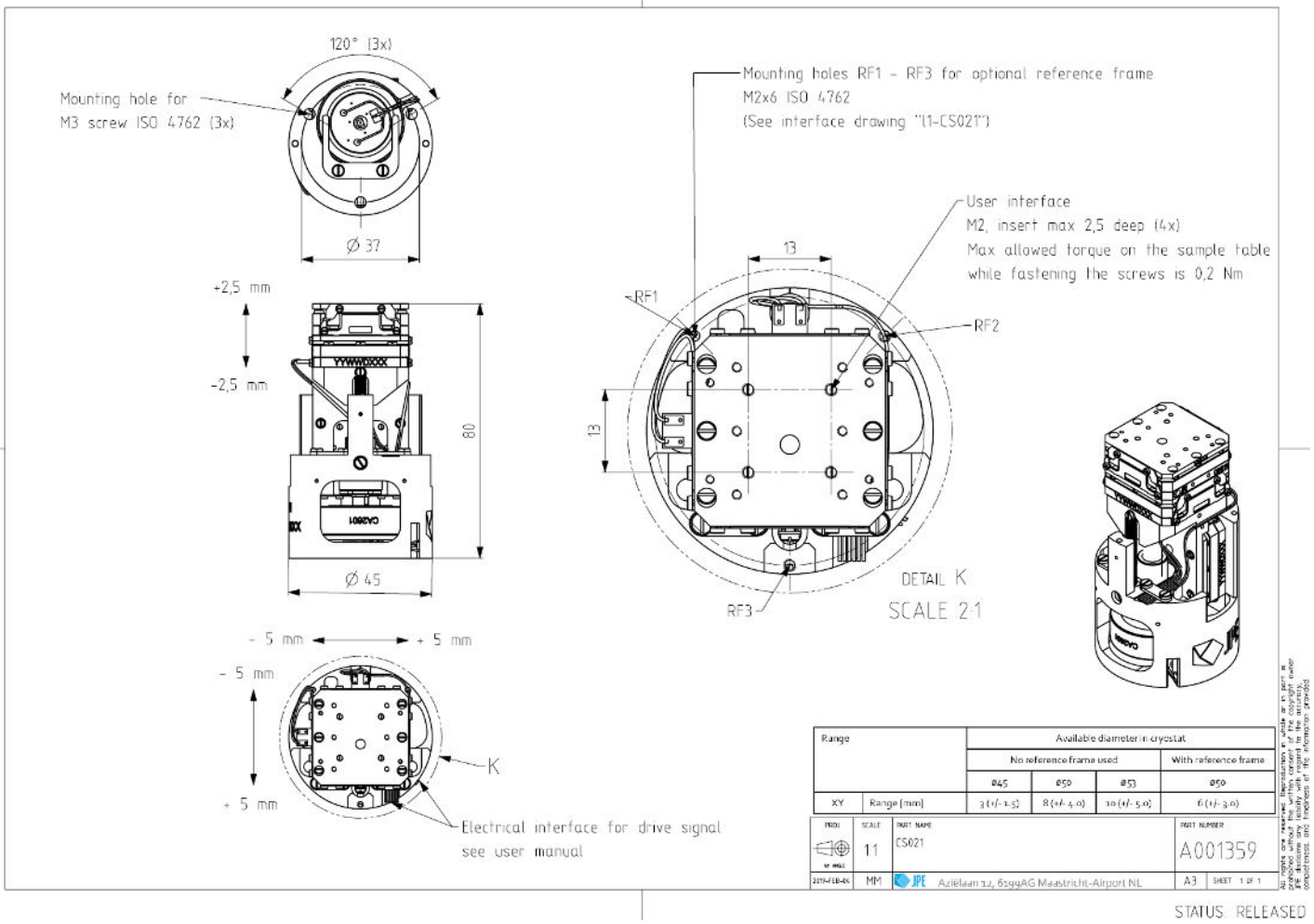
Mechanical and electrical information

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

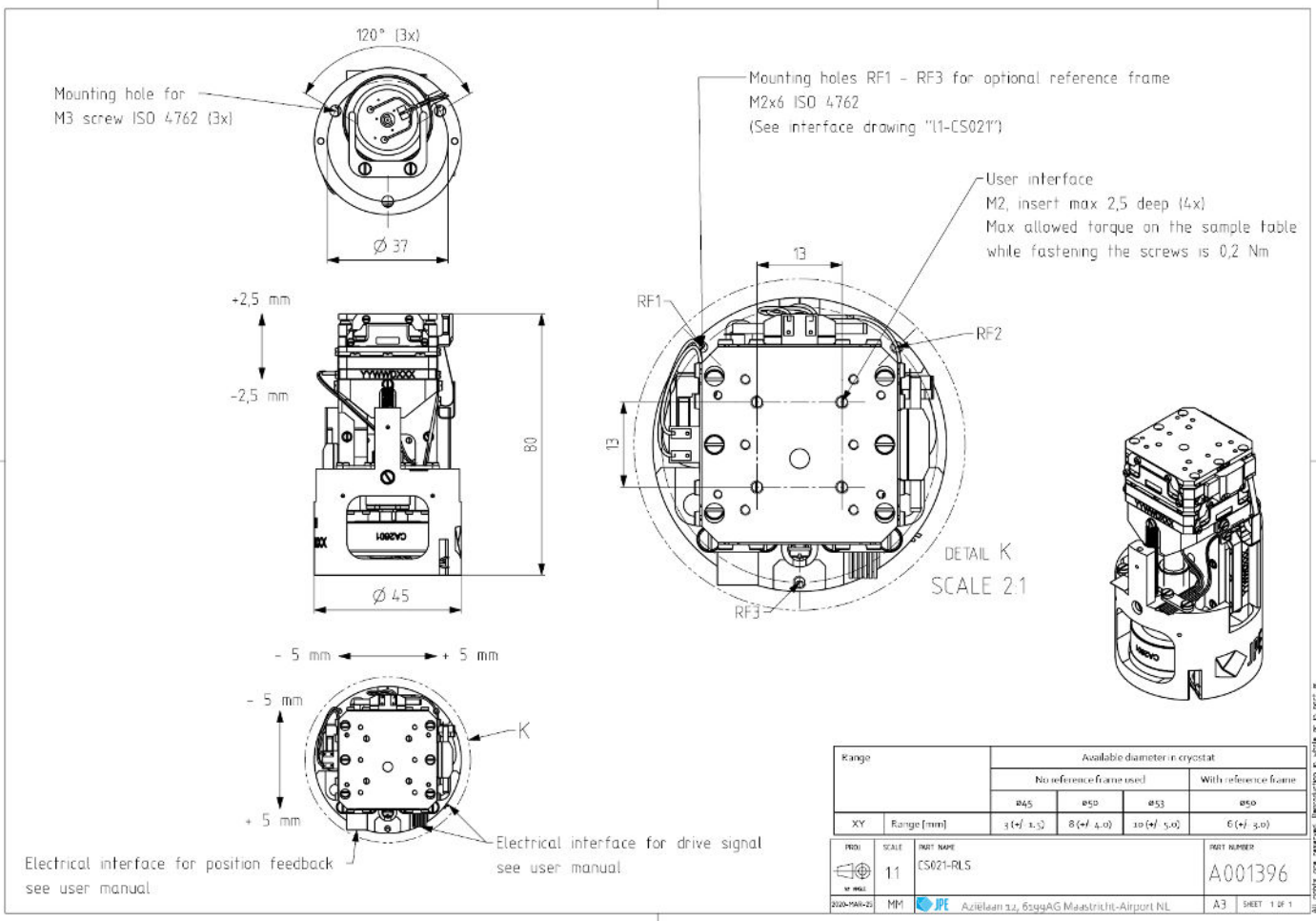
Contact

For quotations, specials, or engineering services, please contact us at:
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Drawings



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Range		Available diameter in cryostat			
		No reference frame used			With reference frame
		ø45	ø52	ø53	ø50
XY	Range [mm]	3 (+/- 1.5)	8 (+/- 4.0)	10 (+/- 5.0)	6 (+/- 3.0)

PROJ	SCALE	PART NAME	PART NUMBER
	11	CS021-RLS	A001396
2020-MAR-25	MM	JPE Aziëlaan 12, 6199AG Maastricht-Airport NL	A3 SHEET 1 OF 1

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