

LF-DN

Large Format
Digital Platform
for VHX-7000N Controllers



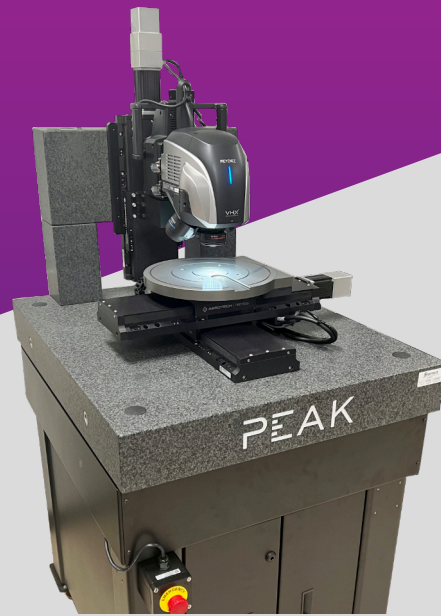
Get More From
Your Microscope

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LF-DN

Large Format Digital Platform



300 x 300 mm Inspection Area System



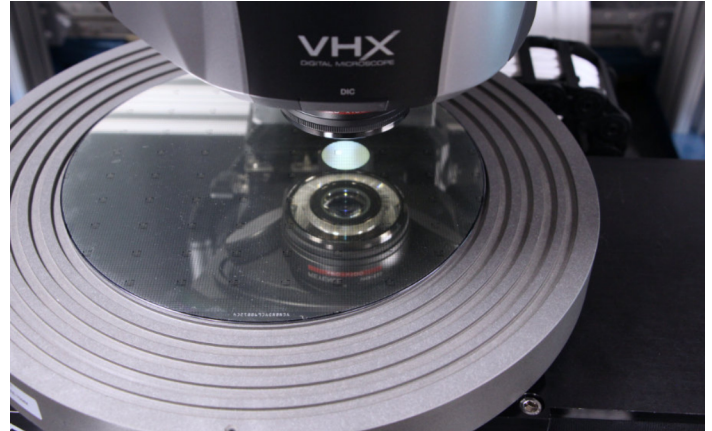
600 x 600 mm Inspection Area System

Many Standard Options to Choose From

A variety of accessories are available to meet the needs of customers in environments spanning from R&D to production. Configure a system that works best for your application.

High Resolution. Large Travel.

Larger stages increase the working area and sample payload capacity. Work 100% from within the standard Keyence VHX software while utilizing a much larger inspection envelope.



Wafer imaging with the VHX-7100 microscope

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How it Works

Plug and Play

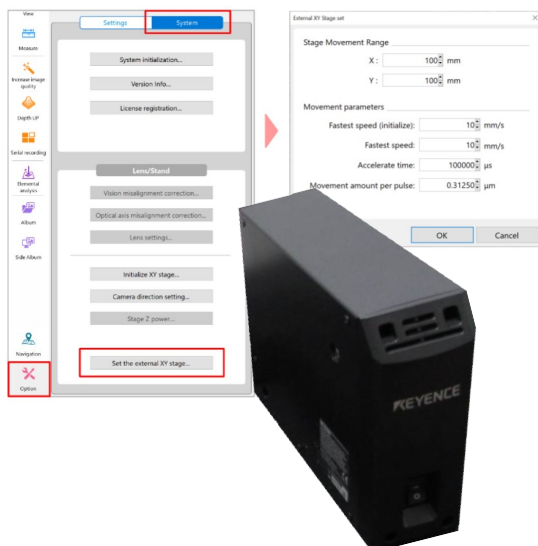
The VHX-7000N microscope controller paired with Keyence VK-S1000K stepper motor controller allows for seamless integration of Peak XY stages directly in the standard VHX software interface.

Enjoy nearly all functionality available with standard Keyence stages but over an extended travel range up to 800x800 mm.

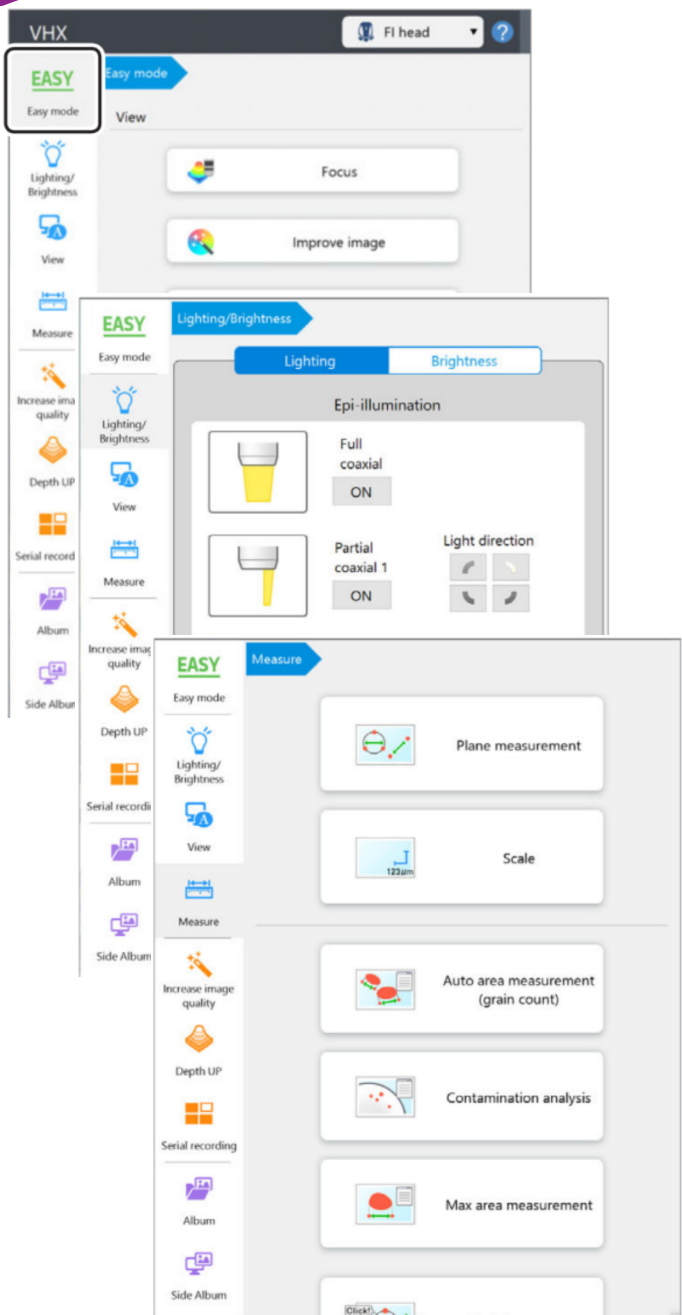
- 2D/3D Concatenation
- Navigation
- Registration of stage position
- Split photography
- Contamination analysis
- XY stage measurement
- and many more...

The following functions are NOT available with the LF-DN Platform:

- One-push calibration
- Eucentric adjustment for tilt axis
- FI Head collision prevention
- Focus View camera



VK-S1000K Stepper Motor Controller and Integrated Stage Settings Menu



VHX Software Interface

Looking for more?

Need additional automation features? Check out our LF-D product which uses ScanX software to unlock advanced features such as: unlimited stitching, programmable autofocus, customized image naming, and more!

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Specs

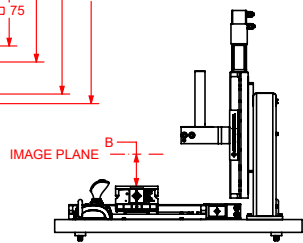
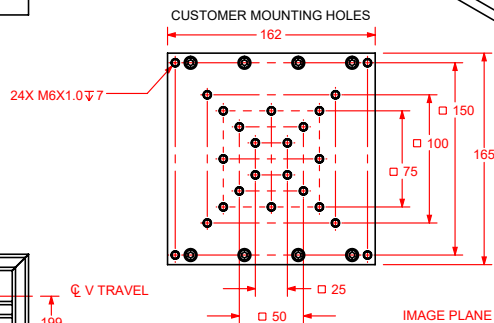
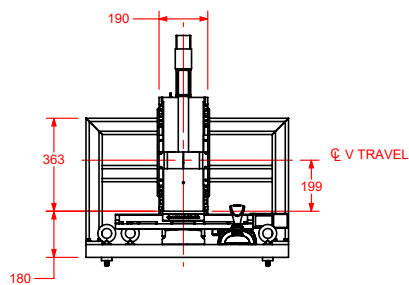
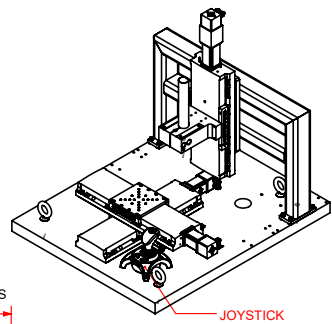
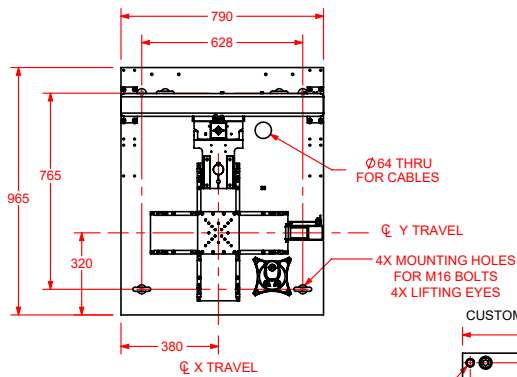
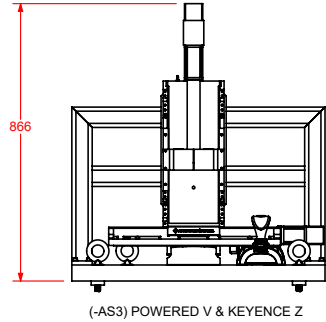
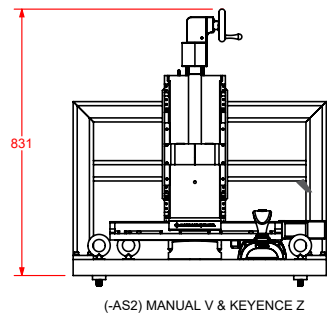
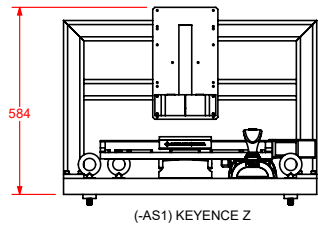
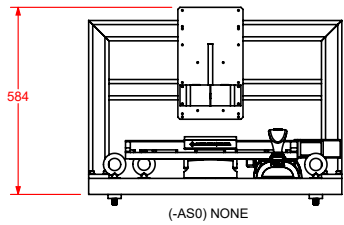
LF-DN Specifications

Travel	300 x 300 mm	600 x 600 mm
XY Performance		
Accuracy	± 10 μm	± 16 μm
Repeatability	± 1 μm	
Max Jog Speed	25 mm/sec	
Large V-Axis (Optional) Performance		
Travel	200 mm	
Accuracy	± 8 μm	
Repeatability	± 1 μm	
Minimum Incremental Motion	1.0 μm	
Max Jog Speed	25 mm/sec	
Tilt-Axis (Optional) Performance		
Travel	+/- 90°	N/A
Accuracy	120 arcsec	N/A
Repeatability	45 arcsec	N/A
Mechanical Specifications		
Payload Capacity	35 kg	45 kg
MTBF (Mean Time Before Failure)	20,000 Hours	

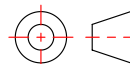
Dimensions

AXIS	NOMINAL TRAVEL
X	300
Y	300
KEYENCE Z	49
V	200

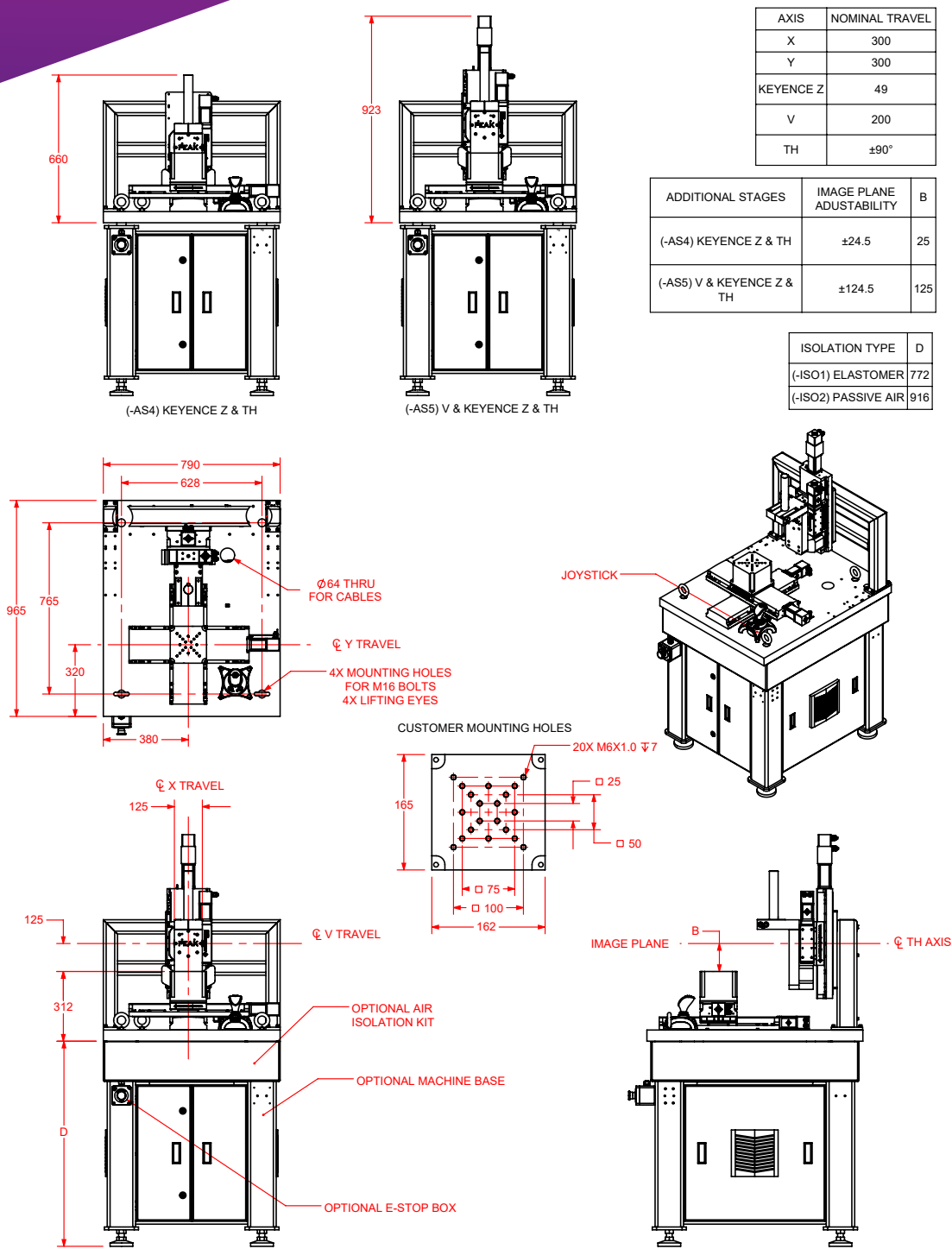
ADDITIONAL STAGES	IMAGE PLANE ADJUSTABILITY	B
(-AS0) NONE	±29.5 (USING POST)	25
(-AS1) KEYENCE Z	±24.5	25
(-AS2) MANUAL V & KEYENCE Z	±124.5	125
(-AS3) POWERED V & KEYENCE Z	±124.5	125



DIMENSIONS: MILLIMETERS



Dimensions

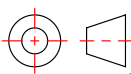


AXIS	NOMINAL TRAVEL
X	300
Y	300
KEYENCE Z	49
V	200
TH	$\pm 90^\circ$

ADDITIONAL STAGES	IMAGE PLANE ADJUSTABILITY	B
(-AS4) KEYENCE Z & TH	± 24.5	25
(-AS5) V & KEYENCE Z & TH	± 124.5	125

ISOLATION TYPE	D
(-ISO1) ELASTOMER	772
(-ISO2) PASSIVE AIR	916

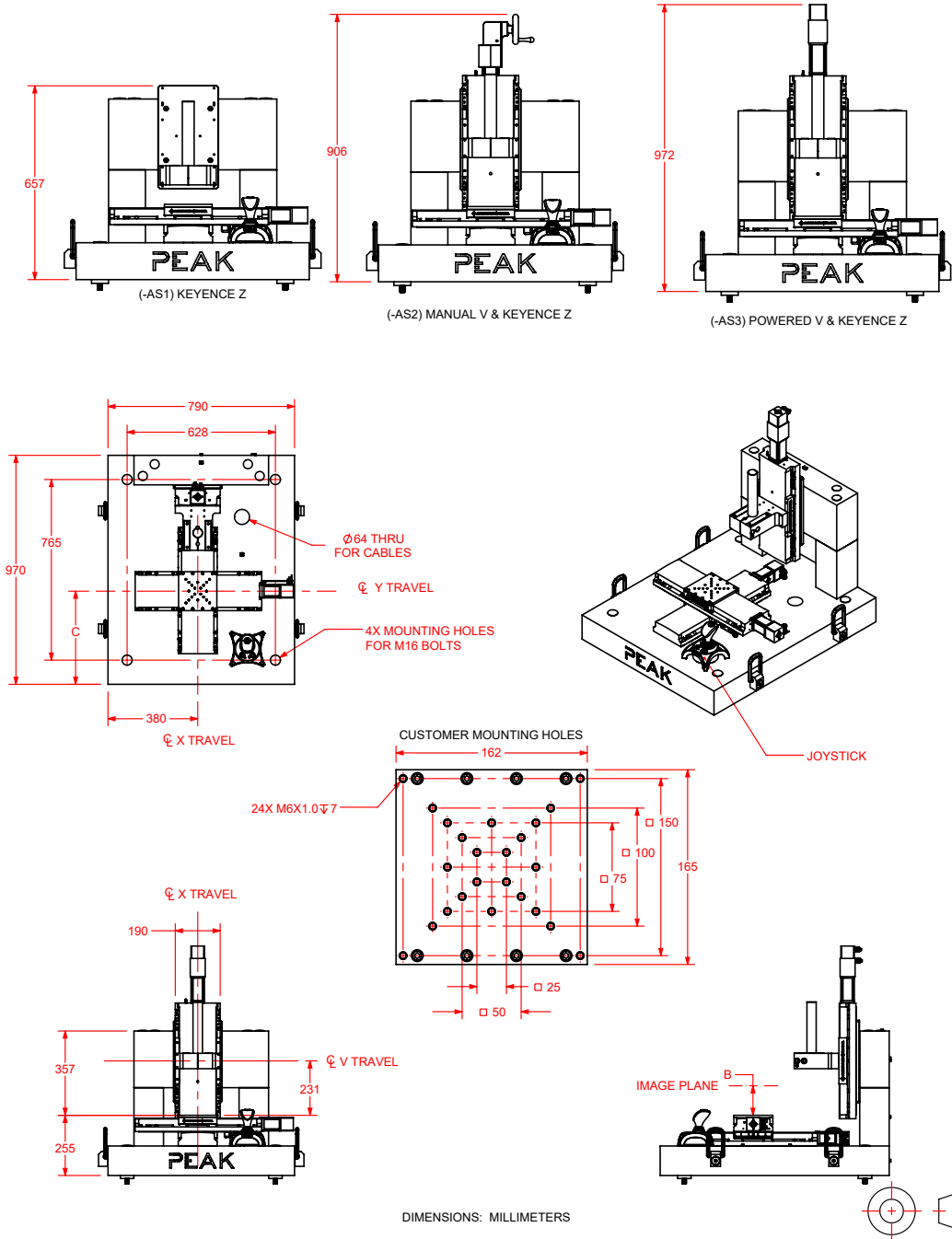
DIMENSIONS: MILLIMETERS



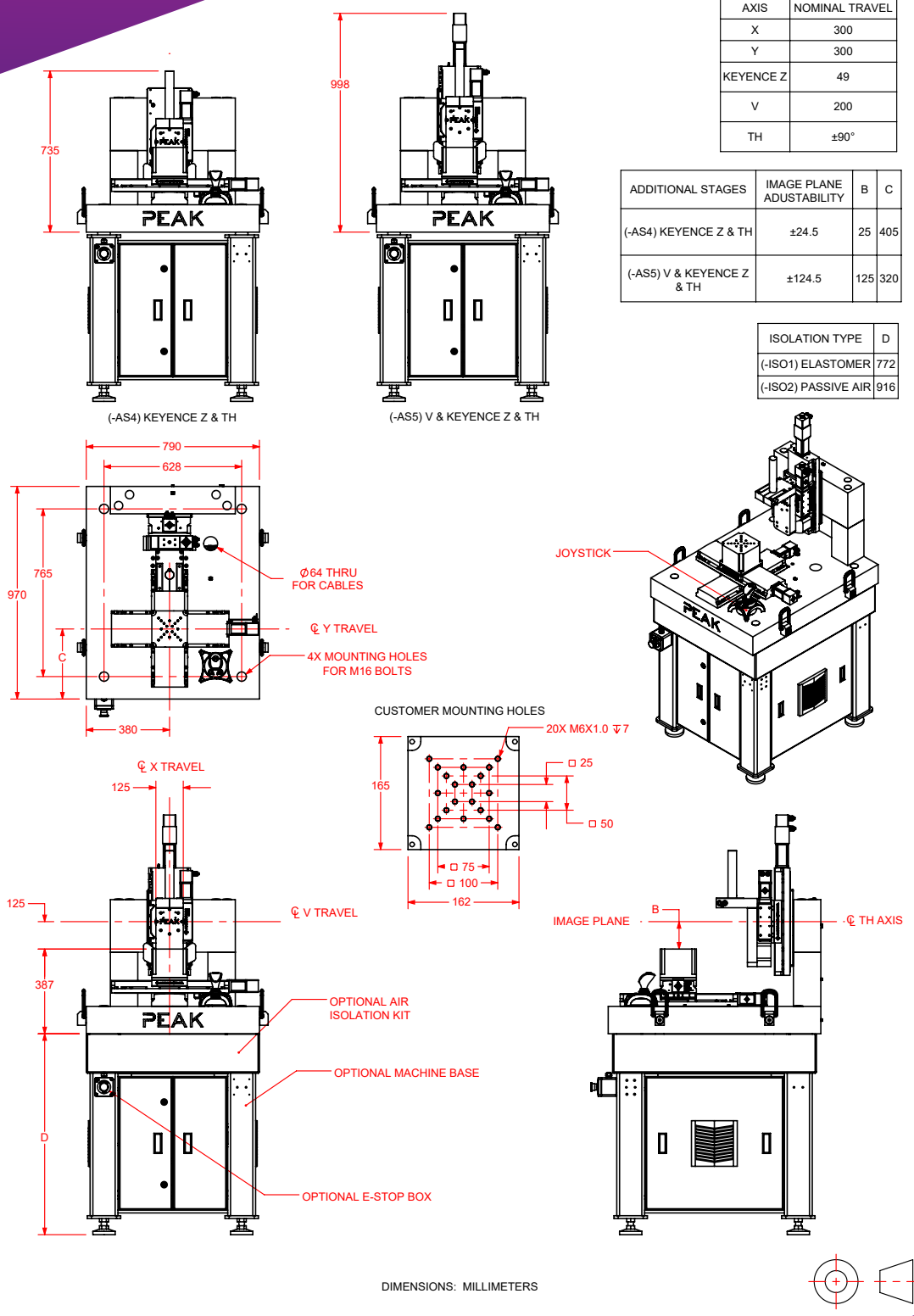
Dimensions

AXIS	NOMINAL TRAVEL
X	300
Y	300
KEYENCE Z	49
V	200

ADDITIONAL STAGES	IMAGE PLANE ADJUSTABILITY	B	C
(-AS1) KEYENCE Z	±24.5	25	468
(-AS2) MANUAL V & KEYENCE Z	±124.5	125	395
(-AS3) POWERED V & KEYENCE Z	±124.5	125	395



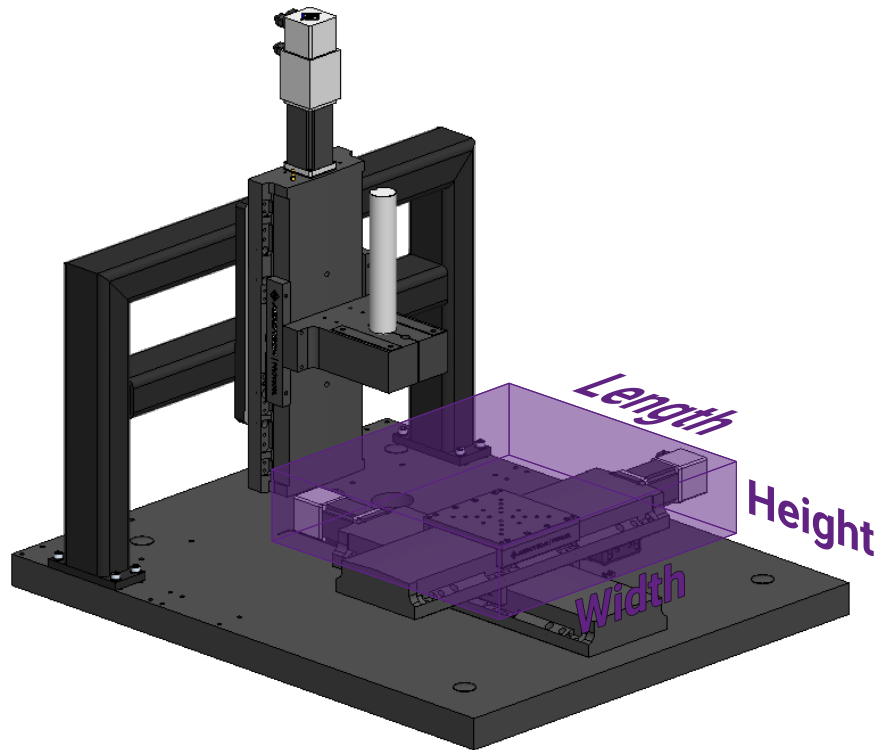
Dimensions



Part Sizes

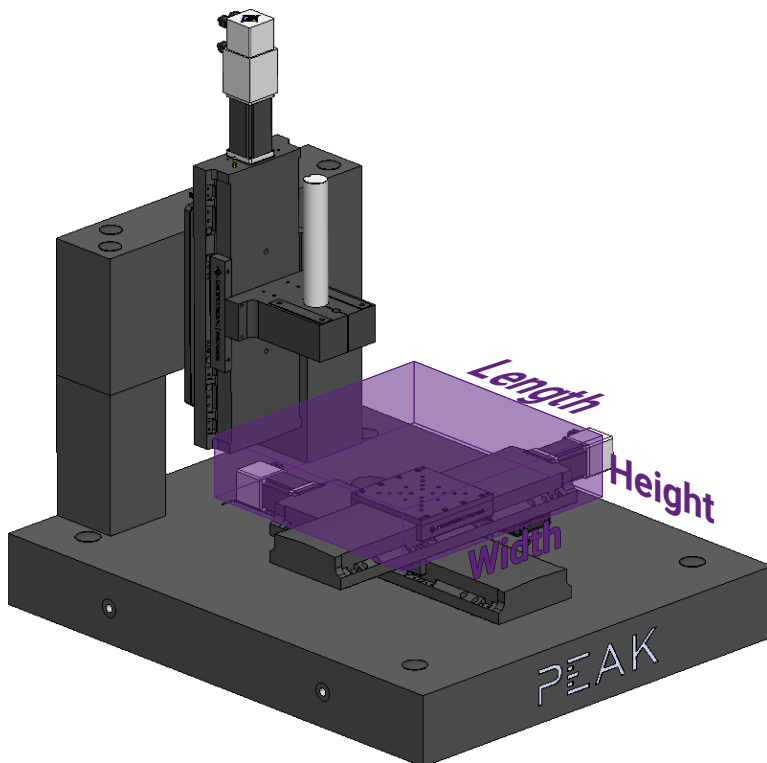
LF-DN-300-MT

Option	Height (mm)	Max Width (mm)	Max Length (mm)
-AS0	0 to 52	307	315 ¹ (500)
-AS1	0 to 52	434	315 ¹ (437)
-AS2	0 to 250	434	315 ¹ (399)
-AS3	0 to 250	434	315 ¹ (399)
-AS4	0 to 50	434	304
-AS5	0 to 250	434	304



LF-DN-300-GR

Option	Height (mm)	Max Width (mm)	Max Length (mm)
-AS1	0 to 52	434	429
-AS2	0 to 250	434	462 ¹ (575)
-AS3	0 to 250	434	462 ¹ (575)
-AS4	0 to 50	434	304
-AS5	0 to 250	434	304



* All dimensions assume part is centered on travel.
Consult Peak about non-symmetric parts.

¹ Parts exceeding this size will extend beyond front edge of base when Y-axis reaches extent of travel. See parentheses for max size with overhang.

Ordering

Step 1 - Select your travel

-300 (300 x 300 mm)	Stacked XY axes, with 300 mm of square travel
-600 (600 x 600 mm)	Lower axis mounted to base, upper axis mounted to the bridge

Step 2 - Select your base material

-MT (Aluminum/Steel) ³	Lightweight, aluminum base with welded steel bridge
-GR (Granite)	Granite used for vibration isolation concerns

Step 3 - Choose your options

VHX Camera² (Required)

-V1 (VHX-7100)	Keyence VHX-7100 Fully Integrated Camera Head
-V2 (VHX-7020)	Camera unit with manual lens changes for the VHX-7000 series

Additional Stages (Required)

-AS0 (None)	No additional stages provided
-AS1 (Small Z)	49 mm of motorized vertical travel range with Keyence VHX-S700F ³
-AS2 (Large Manual V)	200 mm vertical travel via handwheel; 49 mm of fine adjustment with Keyence VHX-S700F ³
-AS3 (Large Motorized V)	200 mm of motorized vertical travel; 49 mm of fine adjustment with Keyence VHX-S700F ³
-AS4 (Small Z with Tilt) ³	Same as -AS1 with +/- 90° motorized tilt adjustment
-AS5 (Large Motorized V with Tilt) ³	Same as -AS3 with +/- 90° motorized tilt adjustment

Machine Base (Optional)

-MB (Machine Base)	Steel weldment with leveling feet, doors, and mounting features for electronics
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Isolation (Required)

-IS01 (Elastomer)	Vibration reduction via elastomer pads designed to provide high damping
-IS02 (Passive Air) ¹	Increased isolation of environmental vibrations with self-leveling air isolators
-IS03 (Active) ¹	Highest level of isolation from environmental vibrations with active isolation

Emergency Stop (Optional)

-ESTOP (Emergency Stop)	Mushroom button to cut power to stage motors
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Line Cord (Required)

-LC0 (None)	No line cord
-LC1 (US115VAC)	US (115VAC) compatible line cord
-LC2 (US230VAC)	US (230VAC) compatible line cord
-LC3 (German)	Germany compatible line cord
-LC4 (UK)	UK compatible line cord

¹ Requires "Machine Base" option

² Provided by Keyence

³ Only available with -300 Travel Option

Ordering

Required

LF-DN -300 -GR -V1 -AS3 -MB -ISO1 -ESTOP -LC1

Product

Travel

-300: 300 x 300 mm
-600: 600 x 600 mm

Base Material

-MT: Aluminum/Steel³
-GR: Granite

VHX Camera²

-V1: VHX-7100
-V2: VHX-7020

Additional Stages

-AS0: None
-AS1: Small Z²
-AS2: Large Manual V
-AS3: Large V
-AS4: Small Z² with Tilt³
-AS5: Large V with Tilt³

Machine Base*

-MB: Machine Base

Isolation

-ISO1: Elastomer
-ISO2: Passive Air¹
-ISO3: Active¹

Emergency Stop*

-ESTOP: Emergency Stop

Line Cord

-LC0: None
-LC1: US115VAC
-LC2: US230VAC
-LC3: German
-LC4: UK

* Optional - omit if not desired

¹ Requires "Machine Base" option

² Provided by Keyence

³ Only available with -300 Travel Option

Ordering



Showing -ISO2 (Passive Air) Option

Control for your environment

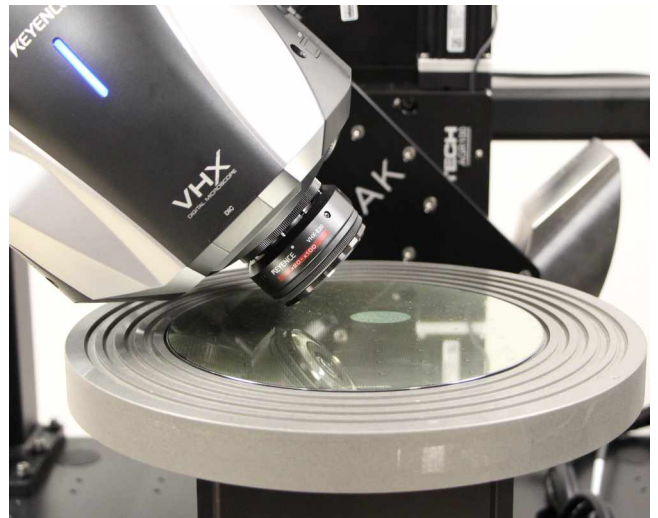
We'll work with you to characterize your floor vibrations and identify any necessary isolation measures to preserve measurement performance. Our standard air and active isolation systems are available to make sure your measurements are rock solid. Please see [this video](#) for more details.

Finishing touches

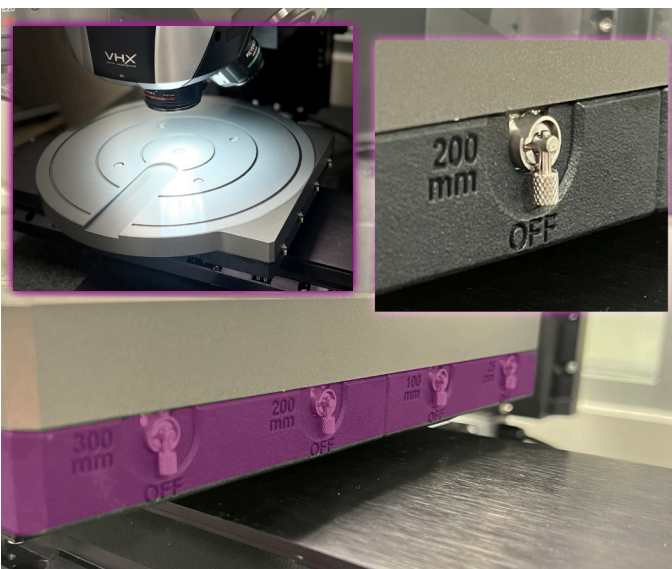
Choose from available ordering options to get exactly what you need.

The optional machine base provides storage for all PCs and control electronics - all within the envelope of the machine.

Get only the stages you need by selecting from our combinations of different vertical and tilt stage offerings.



Showing tilt stage as part of the -AS4/5 Option



Showing Zone-Selectable Vacuum Chuck
PM-FP-VZR

Accessories

Choose from our standardly available accessories such as: fixture plates, wafer chucks, and more!

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Customize

Squeaky clean

We offer various levels of clean room preparation. From material selection and design to component cleaning and assembling/bagging in our own clean room - no matter your room's requirements, we have a solution for you.

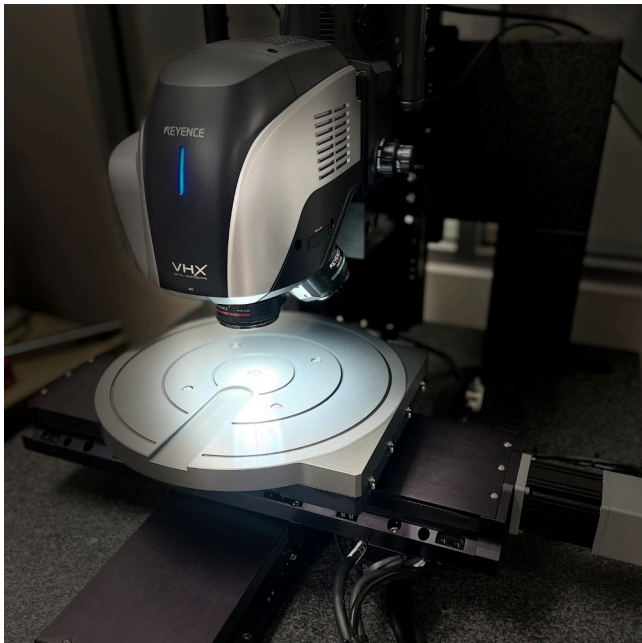


Cleanroom Facility

Have it your way

Don't see exactly what you need? Don't compromise, customize. At Peak, nearly half of our machines are customized per our customers' requirements - so don't hesitate to [contact us](#) to find out how we can deliver exactly what you need.

Are your parts difficult to hold? We'll work with you to design custom part fixturing to make sure your inspections are reliable and repeatable.



300 mm, zone-selectable wafer chuck

Above and beyond

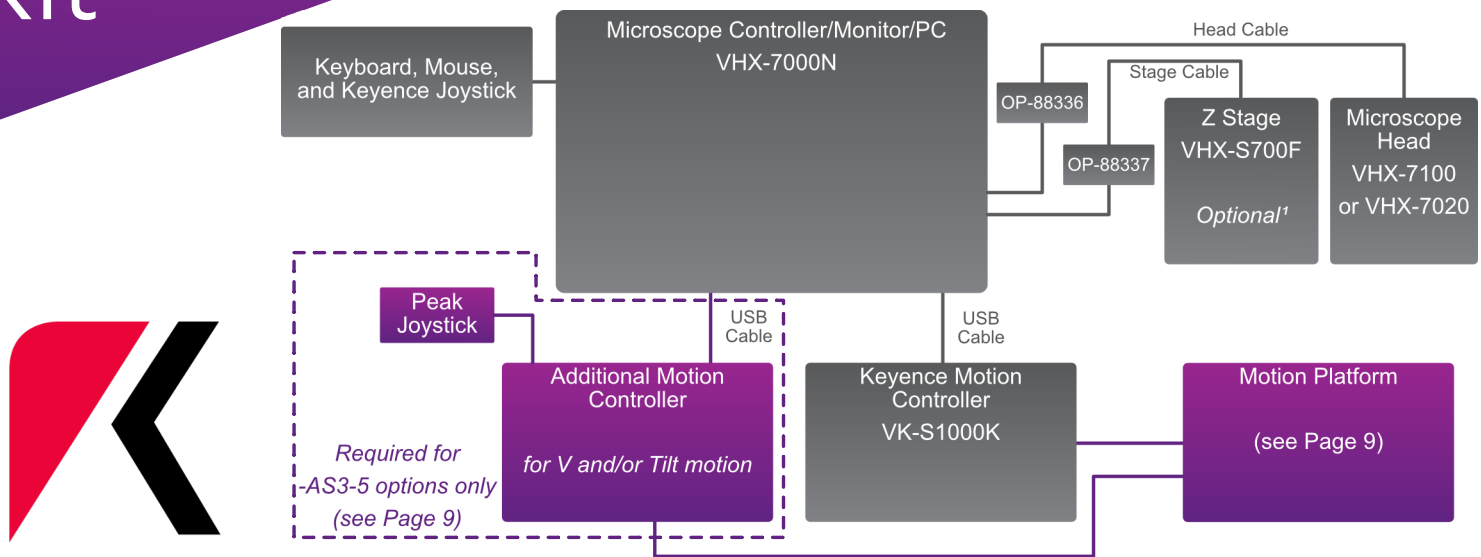
Parts still too big to move? We've still got you covered! If our standard stage layout does not work for you, we will design your system as a purpose-built machine tailor-made for your parts!

We're here to make your measurements easy. Leverage our decades of experience building custom motion platforms to make sure you get exactly what you need.



Overhead gantry system

Keyence Kit



Complete the system

Peak provides all the motion equipment you need to be up and running in no time. The Keyence equipment listed below is required to complete the system. Have questions? Don't hesitate to [contact us](#) for answers on what is required.

Microscope Head

VHX-7100 or VHX-7020

Microscope Controller

VHX-7000N

Motion Controller

VK-S1000K

Z Stage

VHX-S700F¹ (as needed)

Software

VHX Software (comes standard)

VHX-H3M3 XY Measurement Module

VHX-H5M 3D Profile Measurement Module (as needed)

Other

OP-88338 Lens Joint²

OP-88336 & OP-88337 Cable Repeaters

Head and Stage Cables

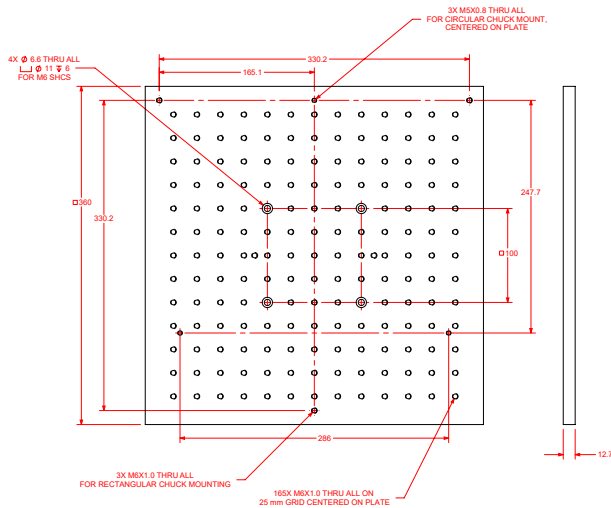
¹ Required for Additional Stages options -AS1-5

² Required for Camera Type -V2/3 options

Fixtures

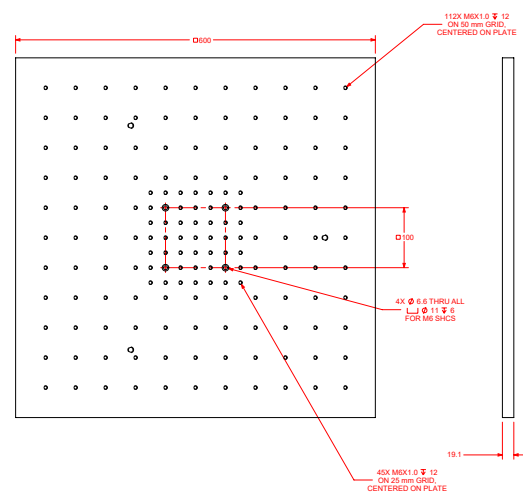
PM-FP-P360

360 mm Square Tooling Plate



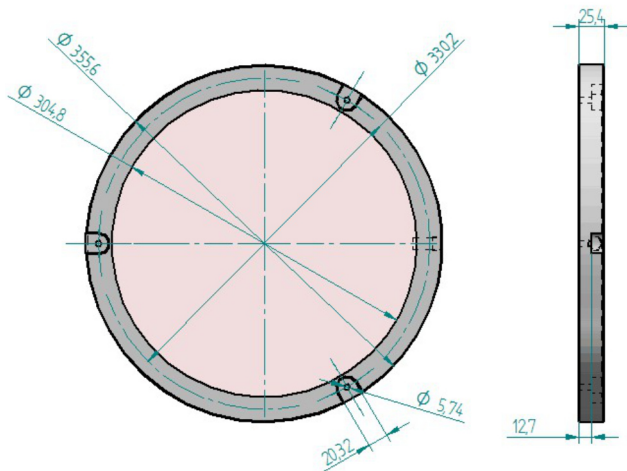
PM-FP-P600

600 mm Square Tooling Plate



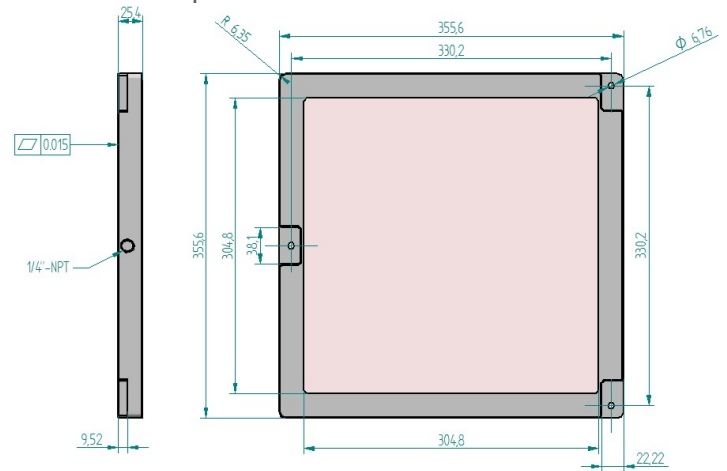
PM-FP-VPR

300 mm Diameter Porous Vacuum Chuck



PM-FP-VPS

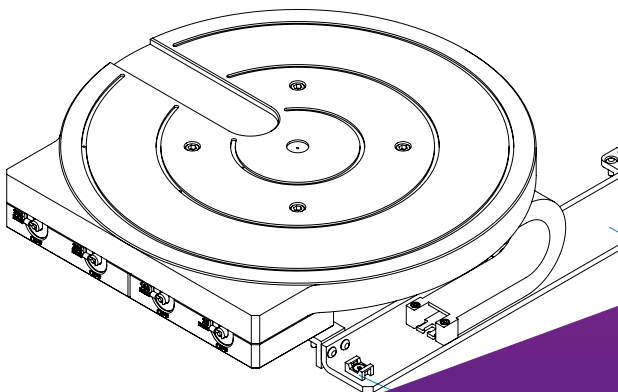
300 mm Square Porous Vacuum Chuck



PM-FP-VZR

300 mm Diameter Zone-Selectable Vacuum Chuck

Zones: 25 mm, 100 mm, 200 mm, and 300 mm Diameters



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