



Key Features of SUPREMA-N

- Patented Clear Quadrant Design
- Symmetrical face plate design is reversible for front or rear mounting of optic
- Carbide pads for smooth feel and actuation through lifetime of product
- Four precision steel springs for increased stiffness and stability and smooth feel throughout travel range
- Precision 100 TPI adjustment screws
- Quick-change actuators
- Large choice of precision actuators
- English or metric compatible

Key Features of SUPREMA-S

- Symmetrical face plate design is reversible for front or rear optic mounting
- Carbide pads for smooth feel and actuation through lifetime of product
- No brass collets for adjustment screws for improved thermal performance and reliability
- 100 TPI adjustment screws provide finer adjustment sensitivity
- Four precision steel springs for increased stiffness and stability and smooth feel throughout travel range
- English or metric compatible

SUPREMA® Series

Kinematic Optical Mounts



SUPREMA sets the new performance standard in a modular precision optical mount for today's demanding research, development, and industrial OEM applications. The most critical features in a kinematic optical mount are adjustment "feel" and long-term stability. **SUPREMA** provides the feel necessary to tune the most sensitive set ups and the stability to hold that position better than any other modular mount on the market.

SUPREMA-S kinematic optical mounts provide unmatched thermal stability. SUPREMA-N kinematic optical mounts are highly configurable with multiple actuator options. All design elements: form, fit, and function, are optimized to create a kinematic optical mount that is configurable and adjustable while providing rock-solid stability and reliability. Mount induced thermal drift has been all but eliminated.

MIRROR MOUNTS

LENS HOLDERS

SPECIALTY OPTICAL MOUNTS

POST & ROD SYSTEMS

BASES & BRACKETS

RAIL SYSTEMS

EDUCATION KITS

ACCESSORIES

TECHNICAL REFERENCE

SUPREMA-N® Kinematic Optical Mounts

SUPREMA-N kinematic optical mounts offer a wide range of configurations; front or rear mounted optical components, broad selection of actuator options, and optional locks.

SUPREMA-N kinematic optical mounts are fabricated from pressed and sintered powdered metal Stainless Steel, using a Patent Pending process, resulting in a cost-effective method of achieving performance approaching wrought Stainless Steel. Newport's SUPREMA-N design has been optimized utilizing our broad experience in opto-mechanics, vibration damping and isolation, optics, and material science. Through comprehensive design, finite element analysis, and rigorous testing, we have achieved performance previously attained only through high cost, custom Stainless Steel mounts.

Our Patented clear quadrant design exposes the edge of the optic, allowing beams to pass close to the edge of a mounted optic. Optics can be held securely in place against precision mounting pads using the nylon-tipped setscrew, or be epoxied in place. Extensive laboratory testing has shown that epoxying the optic in place provides the optimal performance and stability.

SUPREMA-N mounts have superior adjustability and feel. Polished and lapped carbide pads enable smooth, repeatable motion. Adjustment screws have 100 TPI threads for increased sensitivity and smooth adjustment feel. Two-actuator configurations have tip and tilt adjustability over a range of ± 7 degrees. Three-actuator configurations have tip, tilt, and translation capabilities. Our broad selection of actuator options including a wide range of standard and lockable micrometers and adjustment screws (with knobs or hex broach), yields flexibility to choose the actuator best suited for the application. The standard 0.375" diameter actuator-mounting interface also allows for the selection for any of our motorized actuators including the newly introduced **NewStep** actuator.

Convenient #8-32 or M4 tapped holes provide quick, precise, secure and stable mounting. SUPREMA-N mounts are compatible with standard post and post holder systems for adjustable height and pedestal posts for a stable fixed height.

SUPREMA-S® Kinematic Optical Mounts

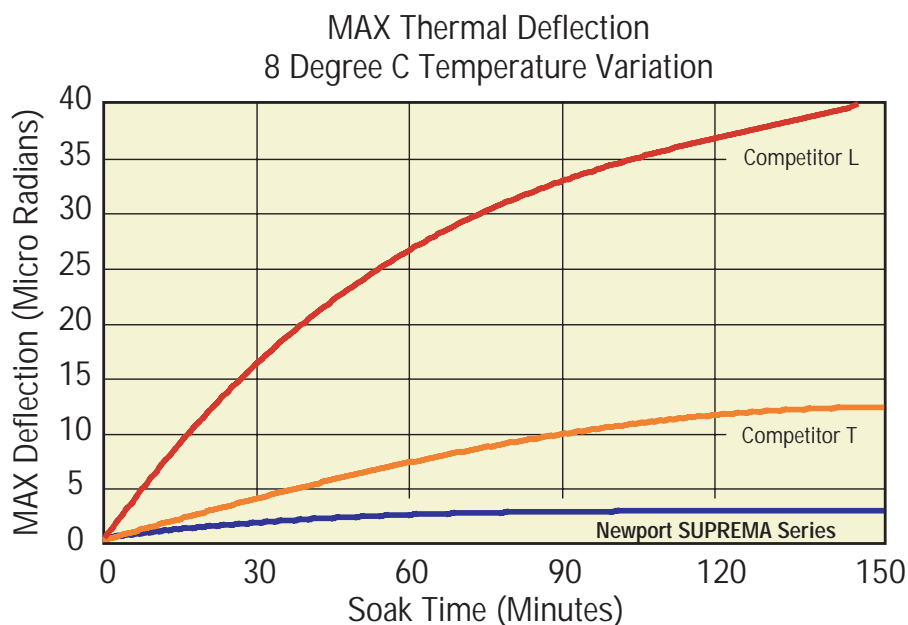
SUPREMA-S kinematic optical mounts offer superior thermal stability.

Documented thermal drift measurements prove SUPREMA-S to be the new standard in stable kinematic optical mounts. The unique design features of the SUPREMA-S, including the material and configuration, make SUPREMA-S the choice for the most demanding research, development, and industrial OEM applications.

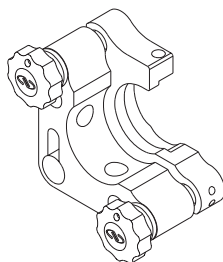
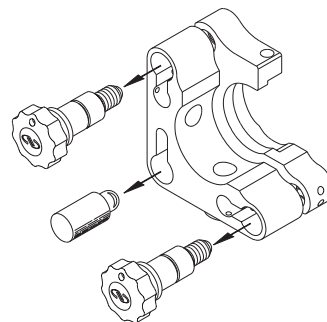
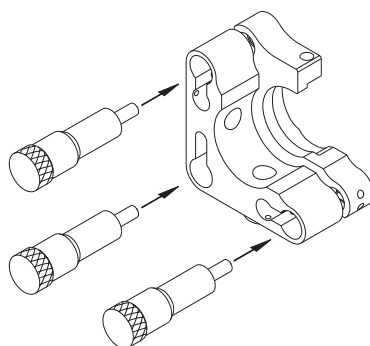
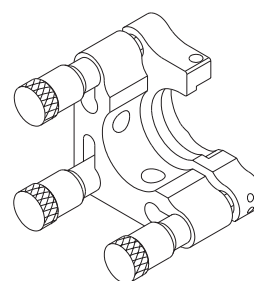
SUPREMA-S kinematic optical mounts are fabricated from pressed and sintered powdered metal Stainless Steel resulting in a cost-effective method of achieving performance nearly identical to wrought Stainless Steel. Newport's SUPREMA-S design has been optimized utilizing our broad experience in opto-mechanics, vibration damping and isolation, and materials science. Through comprehensive design, finite element analysis, and rigorous testing, we have achieved performance previously attained only through high-cost, custom Stainless Steel mounts.

SUPREMA-S mounts have superior adjustability and feel. Polished and lapped carbide pads enable smooth, repeatable motion. Adjustment screws have 100 TPI threads for increased sensitivity. Two-actuator configurations have tip and tilt adjustability over a range of ± 4 degrees. Three-actuator configurations have tip, tilt, and translation capabilities. Available non-influencing locks enable secure locking without position shift. Actuators with knobs or hex broach are available.

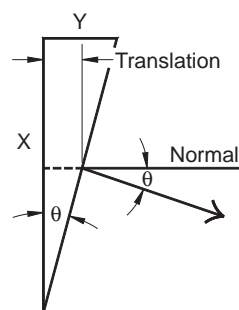
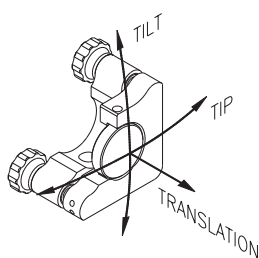
Convenient #8-32 or M4 threaded holes provide quick, precise, and secure mounting. SUPREMA-S mounts are compatible with standard post and post holder systems for adjustable height or pedestal posts for stable fixed height.



The graph above demonstrates the unparalleled thermal stability of the SUPREMA® Series mounts. Comparing to two of Newport's closest competitors, the data clearly demonstrates the superior performance of SUPREMA® mirror mounts.

Step 1**Step 2****Step 3****Step 4****Tilt vs. Translation**

Tilt is the translation of the center of an optic subjected to a 1° tilt of the front plate. For the SUPREMA Series 0.33 mm of translation is observed.

**1° tilt of the frontplate**

Results from 2-3 complete turns of the actuator. The number of turns depends primarily on the number of threads per inch and the pivot arm length. Higher TPI increases the resolution.

- 1) Typical, based on 1° rotation of actuator screw.
- 2) Translation of the optic occurs by turning all 3 actuators.



SS100-R2H



SN100-F3M (M-SN100-F3M)



SS100-R2KN (M-SS100-R2KN)



SN100-F3K (M-SN100-F3K)

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SUPREMA-N® Ordering Information

Model (Metric)	Description	Optic Diameter [in. (mm)]	Adjustment Screw Thread	Drive Type	Lockable	Angular Range (°)	Sensitivity ⁽¹⁾ (arc sec)
SN100-F (M-SN100-F)	Clear Aperture, Front Load, Actuators	1.0 (25.4)				+/- 7	
SN100-F2H (M-SN100-F2H)	Clear Aperture, Front Load, 2 Actuators	1.0 (25.4)	100 TPI	Hex Broach	•	+/- 7	3.8
SN100-F3H (M-SN100-F3H)	Clear Aperture, Front Load, 3 Actuators	1.0 (25.4)	100 TPI	Hex Broach	•	+/- 7	3.8
SN100-F2HN (M-SN100-F2HN)	Clear Aperture, Front Load, 2 Actuators	1.0 (25.4)	100 TPI	Hex Broach		+/- 7	3.8
SN100-F3HN (M-SN100-F3HN)	Clear Aperture, Front Load, 3 Actuators	1.0 (25.4)	100 TPI	Hex Broach		+/- 7	3.8
SN100-F2K (M-SN100-F2K)	Clear Aperture, Front Load, 2 Actuators	1.0 (25.4)	100 TPI	Knob	•	+/- 7	3.8
SN100-F3K (M-SN100-F3K)	Clear Aperture, Front Load, 3 Actuators	1.0 (25.4)	100 TPI	Knob	•	+/- 7	3.8
SN100-F2KN (M-SN100-F2KN)	Clear Aperture, Front Load, 2 Actuators	1.0 (25.4)	100 TPI	Knob		+/- 7	3.8
SN100-F3KN (M-SN100-F3KN)	Clear Aperture, Front Load, 3 Actuators	1.0 (25.4)	100 TPI	Knob		+/- 7	3.8
SN100-LH (M-SN100-LH)	Left-Hand, Clear Aperture, Front Load, No Actuators	1.0 (25.4)				+/- 7	
SN100-F2M (M-SN100-F2M)	Clear Aperture, Front Load, 2 Micrometers	1.0 (25.4)		Micrometer		+/- 7	5.7
SN100-F3M (M-SN100-F3M)	Clear Aperture, Front Load, 3 Micrometers	1.0 (25.4)		Micrometer		+/- 7	5.7

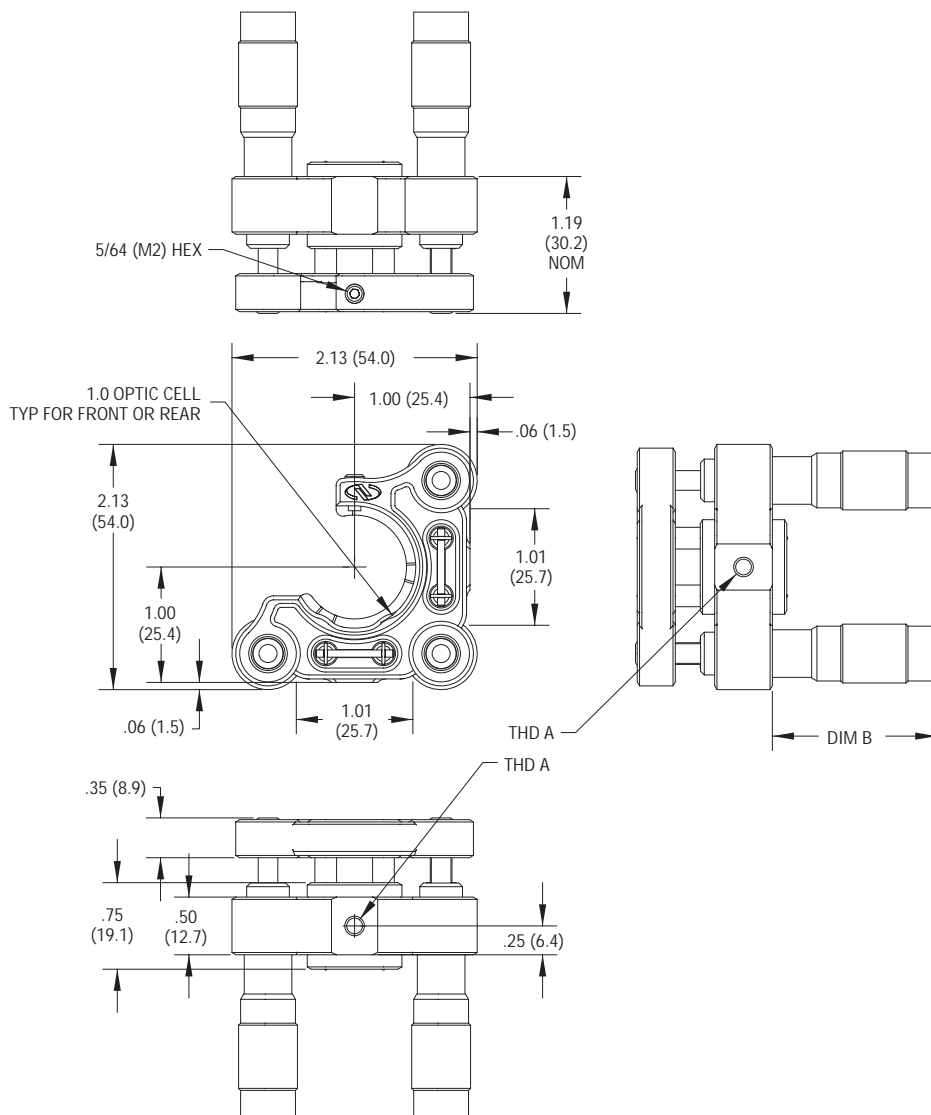
SUPREMA-S® Ordering Information

Model (Metric)	Description	Optic Diameter [in. (mm)]	Adjustment Screw Thread	Drive Type	Lockable	Angular Range (°)	Sensitivity ⁽¹⁾ (arc sec)
Front Loading Aperture							
SS100-F2H	Aperture, Front Load, 2 Actuators	1.0 (25.4)	100 TPI	Hex Broach	•	+/- 4	3.8
SS100-F3H	Aperture, Front Load, 3 Actuators	1.0 (25.4)	100 TPI	Hex Broach	•	+/- 4	3.8
SS100-F2KN (M-SS100-F2KN)	Aperture, Front Load, 2 Actuators	1.0 (25.4)	100 TPI	Knob		+/- 4	3.8
SS100-F3KN (M-SS100-F3KN)	Aperture, Front Load, 3 Actuators	1.0 (25.4)	100 TPI	Knob		+/- 4	3.8
Rear Loading Aperture							
SS100-R2H	Aperture, Rear Load, 2 Actuators	1.0 (25.4)	100 TPI	Hex Broach	•	+/- 4	3.8
SS100-R3H	Aperture, Rear Load, 3 Actuators	1.0 (25.4)	100 TPI	Hex Broach	•	+/- 4	3.8
SS100-R2KN (M-SS100-R2KN)	Aperture, Rear Load, 2 Actuators	1.0 (25.4)	100 TPI	Knob		+/- 4	3.8
SS100-R3KN (M-SS100-R3KN)	Aperture, Rear Load, 3 Actuators	1.0 (25.4)	100 TPI	Knob		+/- 4	3.8

U.S. Patents 6,304,393; 5,930,057; and 6,016,230

* Reversible Face Plate Design is Patent Pending

SUPREMA-N Series



SN100 Series Actuator Lengths

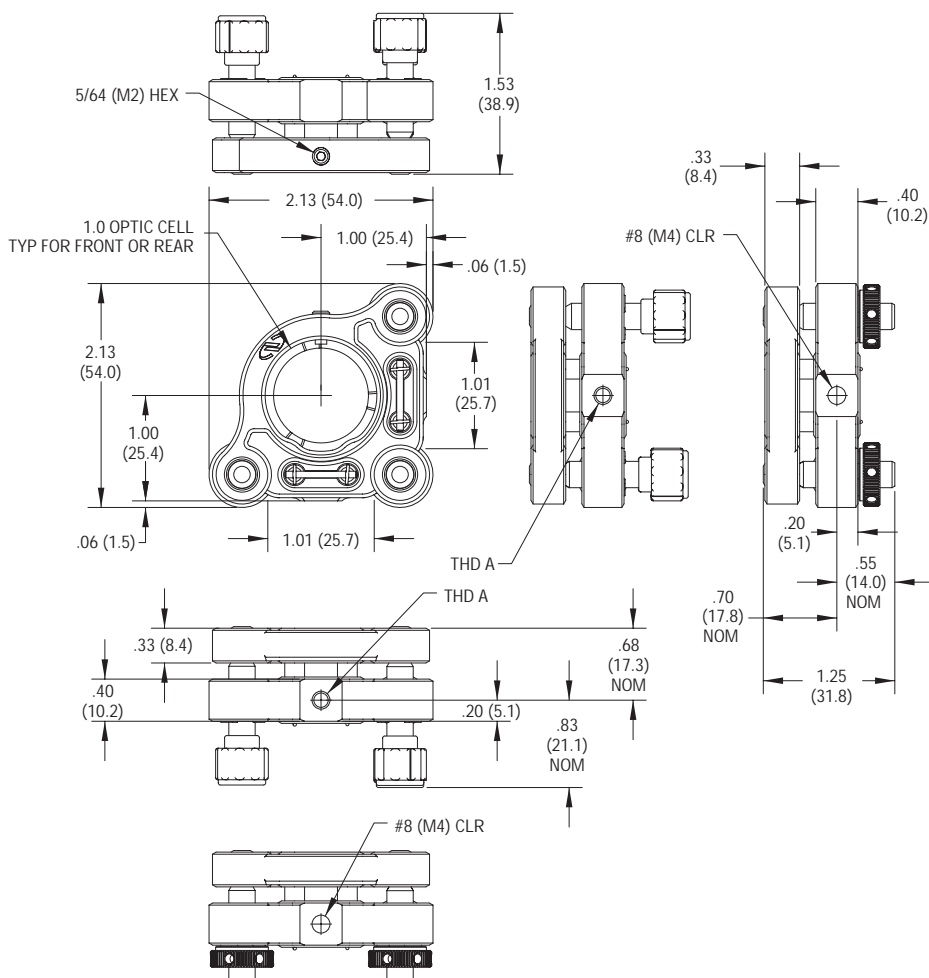
Model	Actuator Type	Dim - B
SN100-F (M-SN100-F)	None	N/A
SN100-F2H (M-SN100-F2H)	AJS100-0.5H	0.52 (13.2)
SN100-F3H (M-SN100-F3H)	AJS100-0.5H	0.52 (13.2)
SN100-F2HN (M-SN100-F2HN)	AJS100-0.5H-NL	0.38 (9.7)
SN100-F3HN (M-SN100-F3HN)	AJS100-0.5H-NL	0.38 (9.7)
SN100-F2K (M-SN100-F2K)	AJS100-0.5K	0.81 (20.6)
SN100-F3K (M-SN100-F3K)	AJS100-0.5K	0.81 (20.6)
SN100-F2KN (M-SN100-F2KN)	AJS100-0.5K-NL	0.67 (17.0)
SN100-F3KN (M-SN100-F3KN)	AJS100-0.5K-NL	0.67 (17.0)
SN100-F2M (M-SN100-F2M)	SM-13	1.43 (36.3)
SN100-F3M (M-SN100-F3M)	SM-13	1.43 (36.3)
SN100-LH (M-SN100-LH)	None	N/A

Note: All values are at nominal position.

Mounting Hole Chart

Model	Thread A
SN100 Series	8-32 (M4)
SS100 Series	8-32 (M4)
Thru-Hole Mounted Models	
SS100-F2H	8-32 (M4) Thru
SS100-F3H	8-32 (M4) Thru
SS100-R2H	8-32 (M4) Thru
SS100-R3H	8-32 (M4) Thru

SUPREMA-S Series



CAD See our website
for CAD files