Optoform

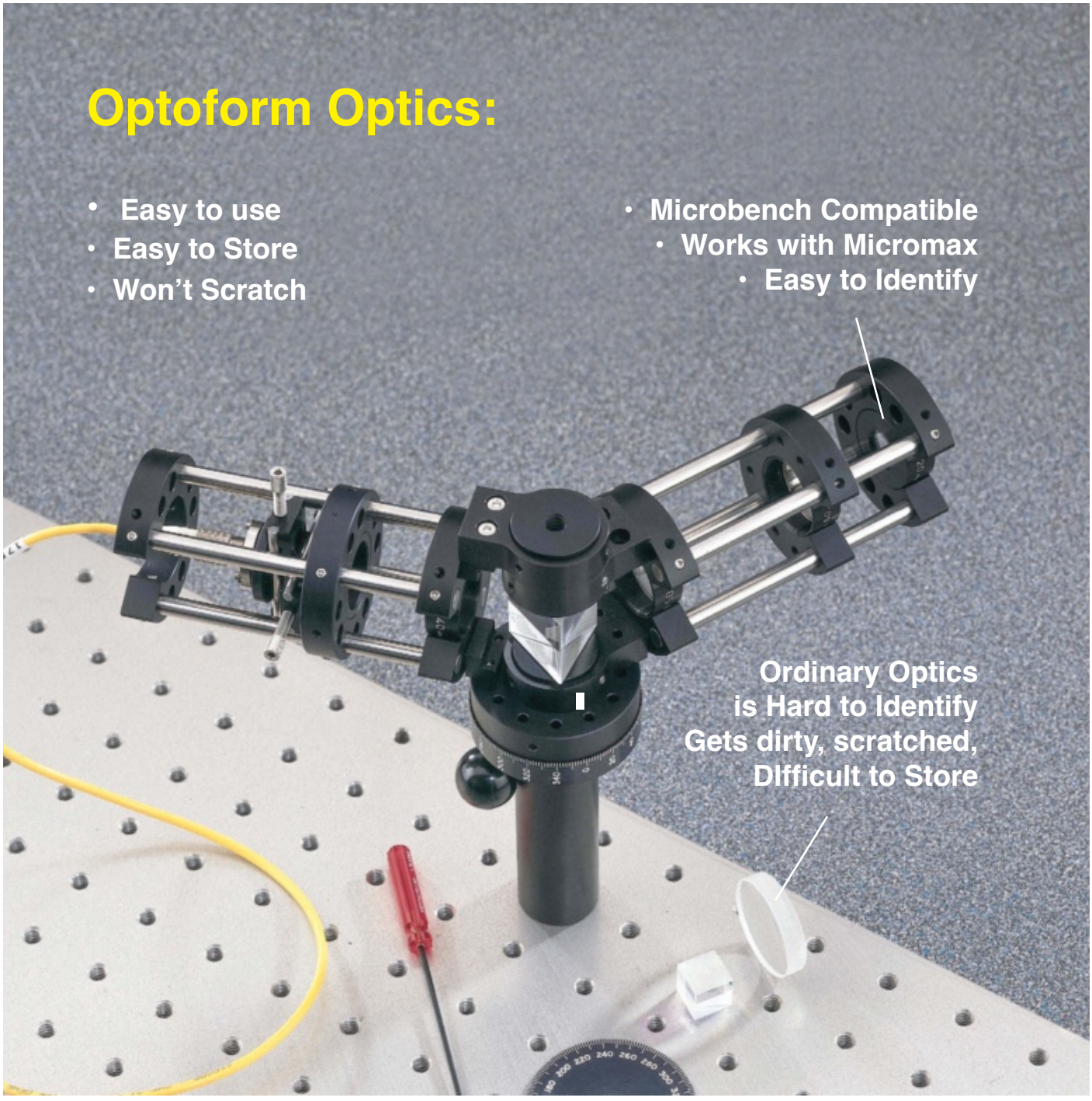
Mounted Optics 25, 30, 60

Optoform Mounted Optics

How our Mounted Optics Works

Build without limits

Ophthalmic Applications



Be Different. Think Different. Do it with Taste. Make it a Better Product

Expandable Mechanics built into every Lens Cell

Mounted Optics 6 ~ 50.8 mm

All our 25 mm lens mounts have standard M23.2 X 0.75 thread so they could be added onto end of tubing, or just combined together. 30 mm Lens cells utilize M28x0.8 thread, and it's M54x0.8 for 60 mm Lens cells.

25-282	Retaining ring **22.4**, set of 2
25-284	Retaining ring 20 mm, set of 2
25-286	Retaining ring **19 mm**, set of 2
25-288	Retaining ring 18 mm, set of 2
25-290	Retaining ring **15 mm**, set of 2
25-292	Retaining ring 12.7 mm, set of 2
25-294	Retaining ring **12.5 mm**, set of 2
25-296	Retaining ring 12 mm, set of 2
25-298	Retaining ring **10 mm**, set of 2
25-300	Retaining ring 8 mm, set of 2
25-302	Retaining ring **6.5 mm**, set of 2
25-304	Retaining ring 6 mm, set of 2

25-254	Lens mount **22.4 mm, L = 12**
25-256	Lens mount 22.4 mm, L = 10
25-258	Lens mount **22.4 mm, L = 6 mm**
25-260	Lens mount 20 mm, L = 10
25-262	Lens mount **19 mm**
25-264	Lens mount 18 mm
25-266	Lens mount **15 mm**
25-268	Lens mount 12.7 mm
25-269	Corner cube mount **25/12.7 mm**
25-270	Lens mount 12.5 mm
25-272	Lens mount **12 mm**
25-274	Lens mount 10 mm
25-276	Lens mount **8 mm**
25-278	Lens mount 6.5 mm
25-280	Lens mount **6 mm**

Mounting Optics

Retaining rings with standard thread M23.2 X 0.75 allow mounting any length of cylindrical optical elements between 6 to 50.8 mm in diameter inside Micromax tubing. Normally, the clearance aperture is the diameter of the lens minus 1 mm. Various cross connectors are shown below for Micromax 25, and 30 tubing, and standard microscope objective W0.8 x 1/36 thread. All Micromax tubing and accessories are cross compatible via various threaded interconnects.

25-314

Tube 25 F to Tube 25 F

25-332

Tube 25 F to W0.8x1/36 F

30-306

Tube 25 F to Tube 25 F

25-331

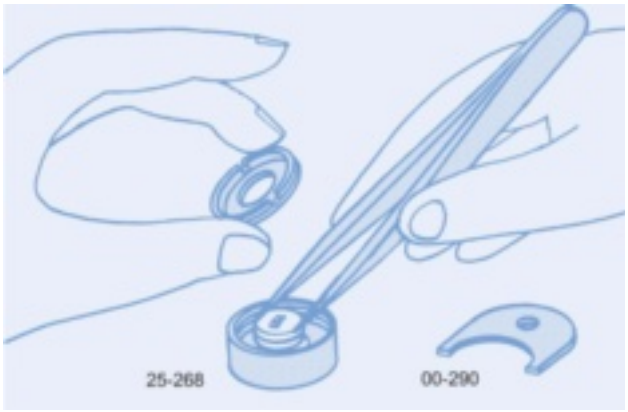
Tube 25 F to W0.8x1/36 M

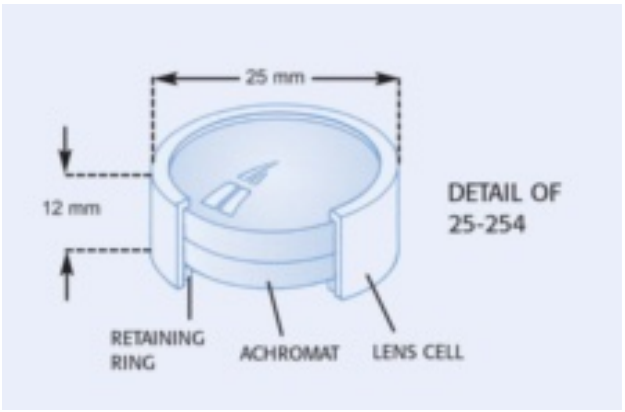
30-422

Tube 30 F to Tube 25 M

30-426

Tube 30 F to Tube 30 F





Micromax 25:

Standard 23.2 mm optics wrench 00-290 fits all mounted optics from 6 mm to 22.4 mm in diameter.

Plano Convex

20-000 PCX f = 10, mount 25

Plano Convex f = 10 mm
Clear Aperture = 5 mm
BK7

20-002 PCX f = 15, mount 25

Plano Convex f = 15 mm
Clear Aperture = 9 mm
BK7

20-004 DCX f = 20, mount 25

Double Convex f = 20 mm
Clear Aperture = 11.5 mm
BK7

20-006 PCX f = 25, mount 25

Double Convex f = 25 mm
Clear Aperture = 11.5 mm
BK7

20-008 PCX f = 30, mount 25

Double Convex f = 30 mm
Clear Aperture = 17 mm
BK7

20-010 PCX f = 40, mount 25

Double Convex f = 40 m
Clear Aperture = 21.4 mm
BK7

20-012 PCX f = 50, mount 25

Double Convex f = 50 mm
Clear Aperture = 21.4 mm
BK7

20-014 PCX f = 60, mount 25

Double Convex f = 60 mm
Clear Aperture = 21.4 mm
BK7

20-016 PCX f = 80, mount 25

Double Convex f = 80 mm
Clear Aperture = 21.4 mm
BK7

20-020 PCX f = 100, mount 25

Double Convex f = 100 mm
Clear Aperture = 21.4 mm
BK7

20-022 PCX f = 150, mount 25

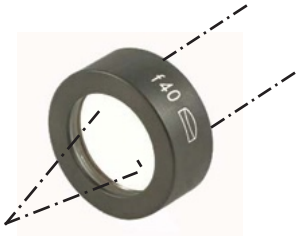
Double Convex f = 150 mm
Clear Aperture = 21.4 mm
BK7

20-024 PCX f = 200, mount 25

Double Convex f = 200 mm
Clear Aperture = 21.4 mm
BK7

Mounting Direction of Achromats

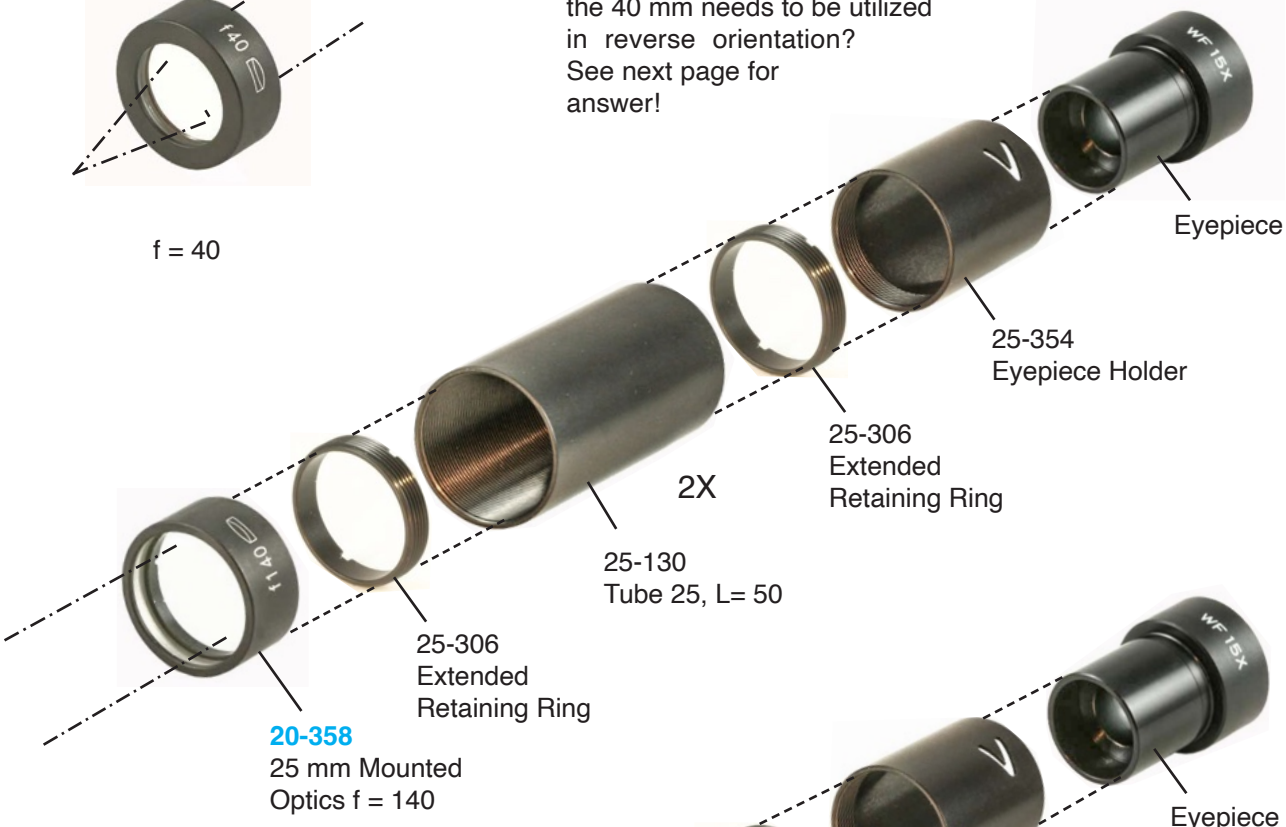
f = 140

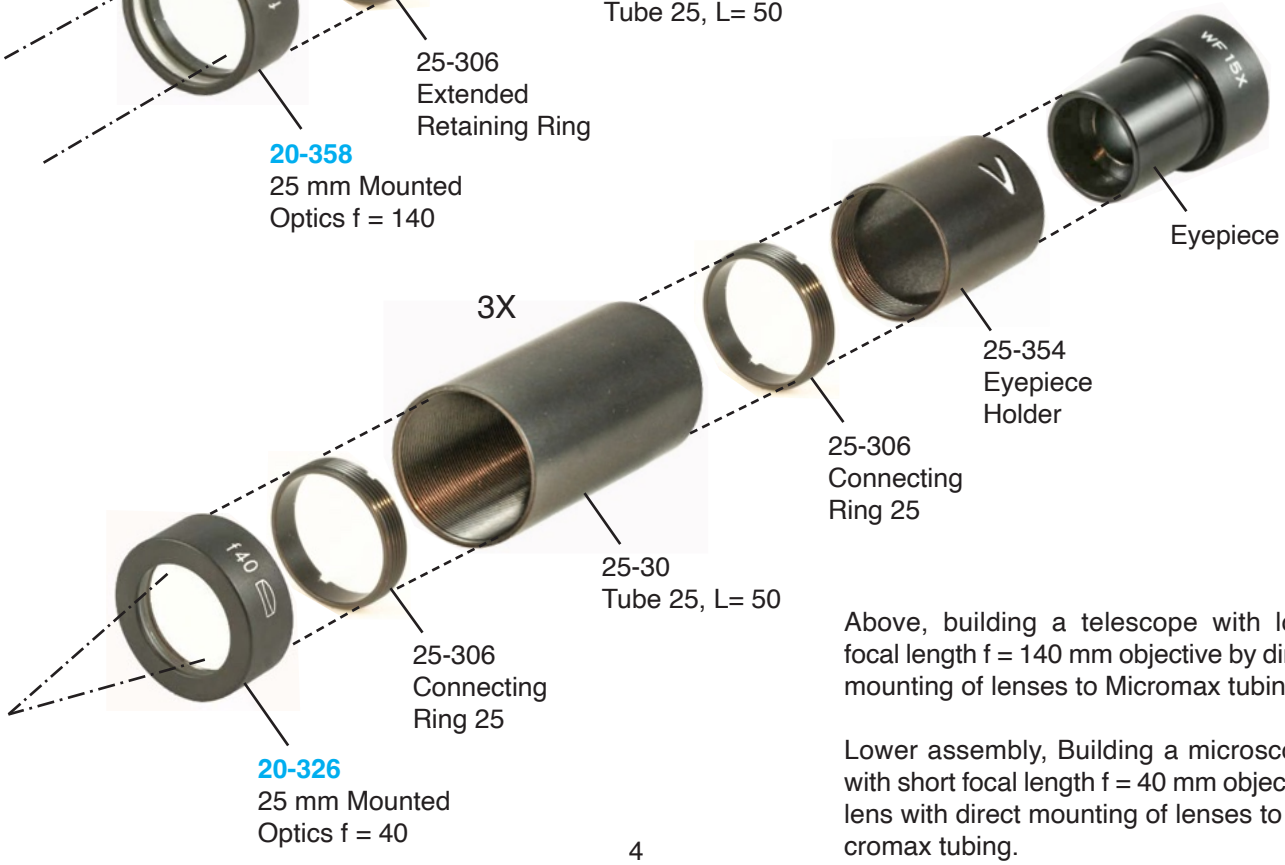


f = 40

Our mounted optics has direct connection with Micromax mounts, and support tubes. We employ the 23.2X0.75 in all our 25 mm lens cells which is the standard Micromax thread (Same as Microbench). That's not all. The mounting direction of the optics depends on how it is utilized with Micromax tubing.

To build a small telescope, for example, tubes, eyepiece holder, and mounted objective lens cells are directly screwed together. The eyepiece holder in this case allows focusing adjustment for the eyepiece. Note the orientation of achromats in their 25 mm lens cells: The threaded mount for longer lens (i.e., f = 140) is oriented towards the eyepiece, allowing its direct mounting to 25 mm tubes for constructing telescopes. The threaded end for shorter achromats (i.e., f = 40) are oriented away from the eyepiece, more suitable for close focus applications. So what if the 40 mm needs to be utilized in reverse orientation? See next page for answer!





Above, building a telescope with long focal length f = 140 mm objective by direct mounting of lenses to Micromax tubing.

Lower assembly, Building a microscope with short focal length f = 40 mm objective lens with direct mounting of lenses to Micromax tubing.

Biconvex

20-104 BCX f = 26, mount 25

Plano Convex f = 10 mm
Clear Aperture = 9 mm
AR Coating: Visible
BK7, Fat lens centered in pecial mount.

20-106 BCX f = 12.5, mount 25

Plano Convex f = 12.5 mm
Clear Aperture = 11.5 mm
AR Coating: Visible
BK7, Fat lens centered in pecial mount.

20-108 BCX f = 16, mount 25

Double Convex f = 16 mm
Clear Aperture = 17 mm
AR Coating: Visible
BK7, Thick fat lens centered in pecial mount threaded on both sides.

20-110 BCX f = 20, mount 25

Double Convex f = 15 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7, Fat lens centered in pecial mount.

20-112 BCX f = 25, mount 25

Double Convex f = 30 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7, Fat lens centered in pecial mount.

20-116 BCX f = 30, mount 25

Double Convex f = 40 m
Clear Aperture = 21.4 mm
BK7, Fat lens centered in pecial mount

20-118 BCX f = 40, mount 25

Double Convex f = 50 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

20-120 BCX f = 50, mount 25

Double Convex f = 60 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

20-122 BCX f = 60, mount 25

Double Convex f = 60 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

20-124 BCX f = 80, mount 25

Double Convex f = 80 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

20-126 BCX f = 100, mount 25

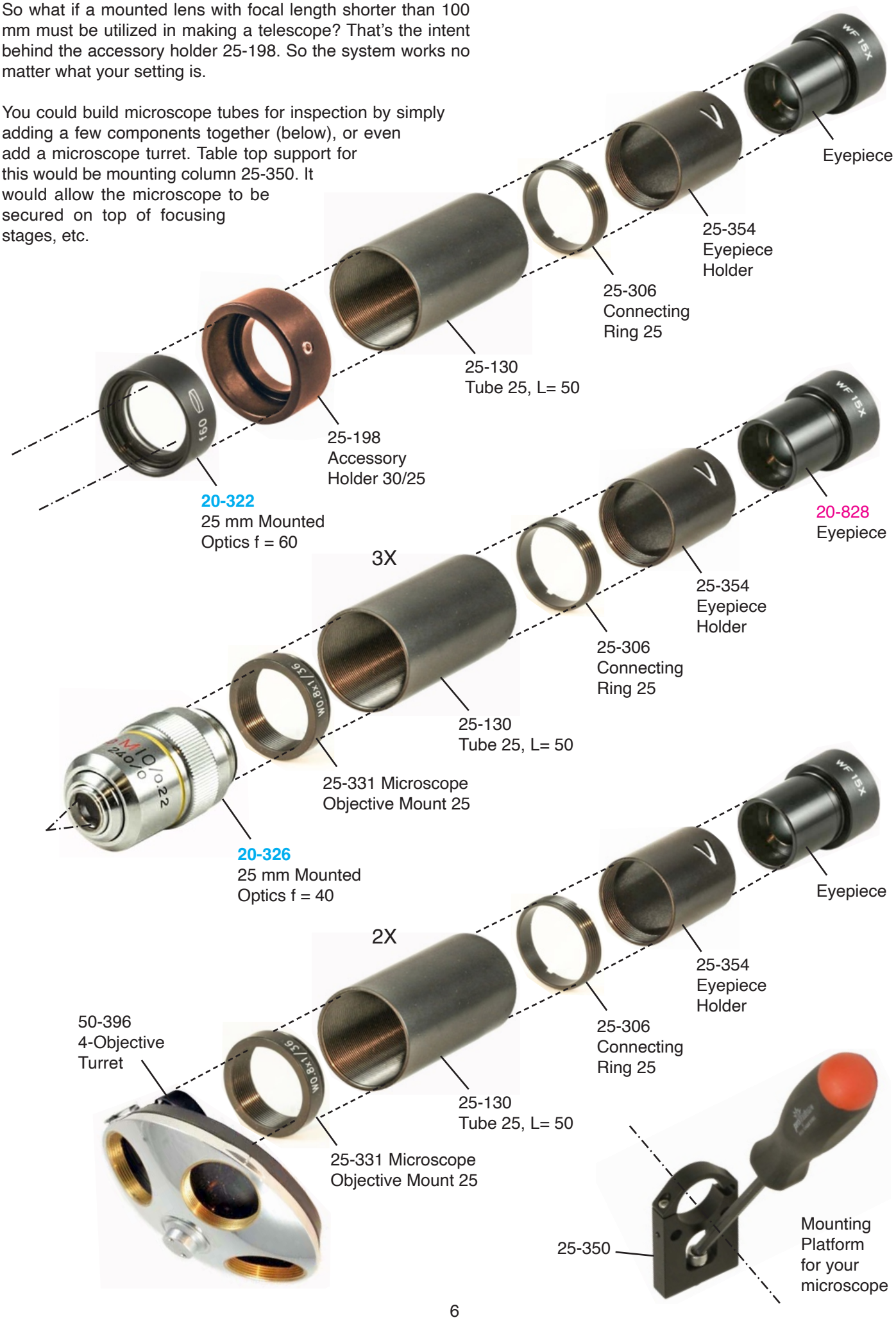
Double Convex f = 100 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

20-128 BCX f = 150, mount 25

Double Convex f = 150 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

So what if a mounted lens with focal length shorter than 100 mm must be utilized in making a telescope? That's the intent behind the accessory holder 25-198. So the system works no matter what your setting is.

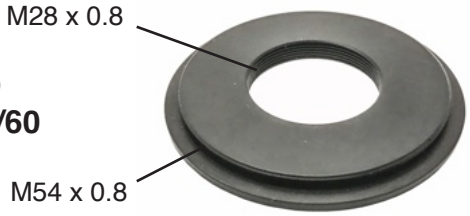
You could build microscope tubes for inspection by simply adding a few components together (below), or even add a microscope turret. Table top support for this would be mounting column 25-350. It would allow the microscope to be secured on top of focusing stages, etc.



20-130 BCX f = 200, mount 25

Plano Convex f = 200 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

Step Up Ring 30/60



60-442

Plano Concave

20-202 PCC f = -10, mount 25

Plano Convex f = -10 mm
Clear Aperture = 9 mm
BK7

20-204 PCC f = -30, mount 25

Double Convex f = -30 mm
Clear Aperture = 22.4 mm
BK7

20-206 PCC f = -40, mount 25

Double Convex f = -40 mm
Clear Aperture = 22.4 mm
BK7

20-208 PCC f = -50, mount 25

Double Convex f = 30 mm
Clear Aperture = 21.4 mm
BK7

20-210 PCC f = -100, mount 25

Double Convex f = 40 m
Clear Aperture = 21.4 mm
BK7

20-212 PCC f = -150, mount 25

Double Convex f = 150 mm
Clear Aperture = 21.4 mm
BK7

Biconcave

20-232 BCC f = -20, mount 25

Double Convex f = -20 mm
Clear Aperture = 21.4 mm
BK7

20-234 BCC f = -30, mount 25

Double Convex f = -30 mm
Clear Aperture = 21.4 mm
BK7

20-236 BCC f = -40, mount 25

Double Convex f = -40 mm
Clear Aperture = 21.4 mm
BK7

20-238 BCC f = -50, mount 25

Double Convex f = -50 mm
Clear Aperture = 21.4 mm
BK7

20-240 BCC f = -100, mount 25

Double Convex f = 100 mm
Clear Aperture = 21.4 mm
BK7

20-130 BCC f = 150, mount 25

Plano Convex f = -150 mm
Clear Aperture = 21.4 mm
BK7

Condenser Lenses

20-250 Asph f = 18, mount 25

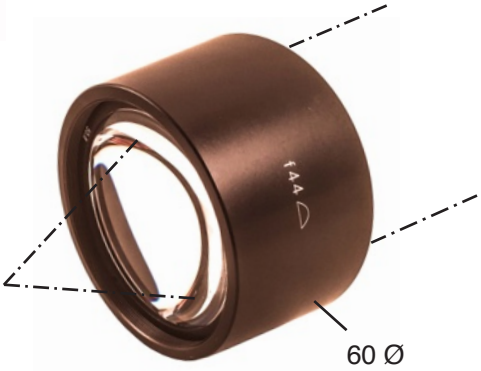
Double Convex f = 18 mm
Clear Aperture = 22.4 mm
Single Retaining Ring
Pyrex

20-252 Asph f = 25, mount 30

Double Convex f = 25 mm
Clear Aperture = 24 mm
Single Retaining Ring
Pyrex

20-254 Asph f = 44, mount 60

Double Convex f = 44 mm
Clear Aperture = 48 mm
Double Retaining Ring provides space for adding aditional elements or diffusion plates via retaining rings 60-422/ -426/ -428.
Pyrex



Cylindrical Lenses

20-288 CYL f = 1.2, mount 25

Double Convex f = 1.2 mm
Clear Aperture = 1.6 x 10 mm
BK7

20-290 CYL f = 5, mount 25

Double Convex f = 5 mm
Clear Aperture = 5 mm
BK7

20-292 CYL f = 10, mount 25

Double Convex f =10 mm
Clear Aperture = 9.5 mm
BK7

20-296 CYL f = 40, mount 25

Double Convex f = 40 mm
Clear Aperture = 15 mm
BK7

Achromats

20-314 ACH f = 10, mount 25

Achromat f = 10 mm
Clear Aperture = 5 mm
AR Coating: Visible

20-316 ACH f = 16, mount 25

Achromat f = 16 mm
Clear Aperture = 7 mm
AR Coating: Visible

Achromats

20-318 ACH f = 20, mount 25

Achromat f = 20 mm
Clear Aperture = 5 mm
AR Coating: Visible

20-320 ACH f = 25, mount 25

Achromat f = 25 mm
Clear Aperture = 9 mm
AR Coating: Visible

20-322 ACH f = 30, mount 25

Achromat f = 30 mm
Clear Aperture = 11.5 mm
AR Coating: Visible

20-324 ACH f = 35, mount 25

Achromat f = 35 mm
Clear Aperture = 11.5 mm
AR Coating: Visible

20-326 ACH f = 40, mount 25

Achromat f = 40 mm
Clear Aperture = 17 mm
AR Coating: Visible

20-328 ACH f = 50, mount 25

Achromat f = 50 m
Clear Aperture = 17 mm
AR Coating: Visible

20-330 ACH f = 50, mount 25

Achromat f = 50 mm
Clear Aperture = 21.4 mm
AR Coating: Visible

20-332 ACH f = 60, mount 25

Achromat f = 60 mm
Clear Aperture = 17 mm
AR Coating: Visible

20-334 ACH f = 60, mount 25

Achromat f = 60 mm
Clear Aperture = 21.4 mm
AR Coating: Visible

20-336 ACH f = 60, mount 30

Achromat f = 60 mm
Clear Aperture = 24 mm
AR Coating: Visible

20-338 ACH f = 80, mount 25

Achromat f = 80 mm
Clear Aperture = 17 mm
AR Coating: Visible

20-340 ACH f = 80, mount 25

Achromat f = 80 mm
Clear Aperture = 21.4 mm
AR Coating: Visible

Achromats

20-342 ACH f = 80, mount 30

Achromat f = 80 mm
Clear Aperture = 24 mm
AR Coating: Visible

20-346 ACH f = 100, mount 25

Achromat f = 100 mm
Clear Aperture = 17 mm
AR Coating: Visible

20-348 ACH f = 100, mount 25

Achromat f = 100 mm
Clear Aperture = 21.4 mm
AR Coating: Visible

20-350 ACH f = 100, mount 30

Achromat f = 100 mm
Clear Aperture = 24 mm
AR Coating: Visible

20-356 ACH f = 120, mount 25

Achromat f = 120 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

20-358 ACH f = 140, mount 25

Achromat f = 140 mm
Clear Aperture = 21.4 mm
AR Coating: Visible
BK7

20-362 ACH f = 200, mount 25

Achromat f = 200 mm
Clear Aperture = 21.4 mm
AR Coating: Visible

20-366 ACH f = 200, mount 30

Achromat f = 200 mm
Clear Aperture = 24 mm
AR Coating: Visible

20-370 ACH f = 300, mount 30

Achromat f = 300 mm
Clear Aperture = 24 mm
AR Coating: Visible

20-374 ACH f = 500, mount 25

Achromat f = 500 mm
Clear Aperture = 21.4 mm
AR Coating: Visible

25-200 Handling Ring

20-290 Cylindrical Lens

Easier Rotary Adjustments

Left, optics handling ring 25-200 may be added to cylindrical lenses, polarizers, or slits for convenient rotation, and better accessability in tight assemblies.

Color Filters

20-702 UV UG1, mount 25

UV filter
Clear Aperture = 21.4 mm

20-708 Blue BG7, mount 25

Dark Blue filter
Clear Aperture = 21.4 mm

20-710 Blue BG23, mount 25

Medium Blue filter
Clear Aperture = 21.4 mm

20-714 Green BG18, mount 25

Blue-Green filter
Clear Aperture = 21.4 mm

20-716 Green VG9, mount 25

Dark Green filter
Clear Aperture = 21.4 mm

20-718 Yellow GG475, mnt 25

Yellow filter
Clear Aperture = 21.4 mm

20-722 Red OG590, mount 25

Pale Red filter
Clear Aperture = 21.4 mm

20-724 Red RG610, mount 25

Medium Red
Clear Aperture = 21.4 mm

20-728 IR RG780, mount 25

IR 780 nm filter
Clear Aperture = 21.4 mm

20-730 IR RG850, mount 25

IR 850 nm filter
Clear Aperture = 24 mm

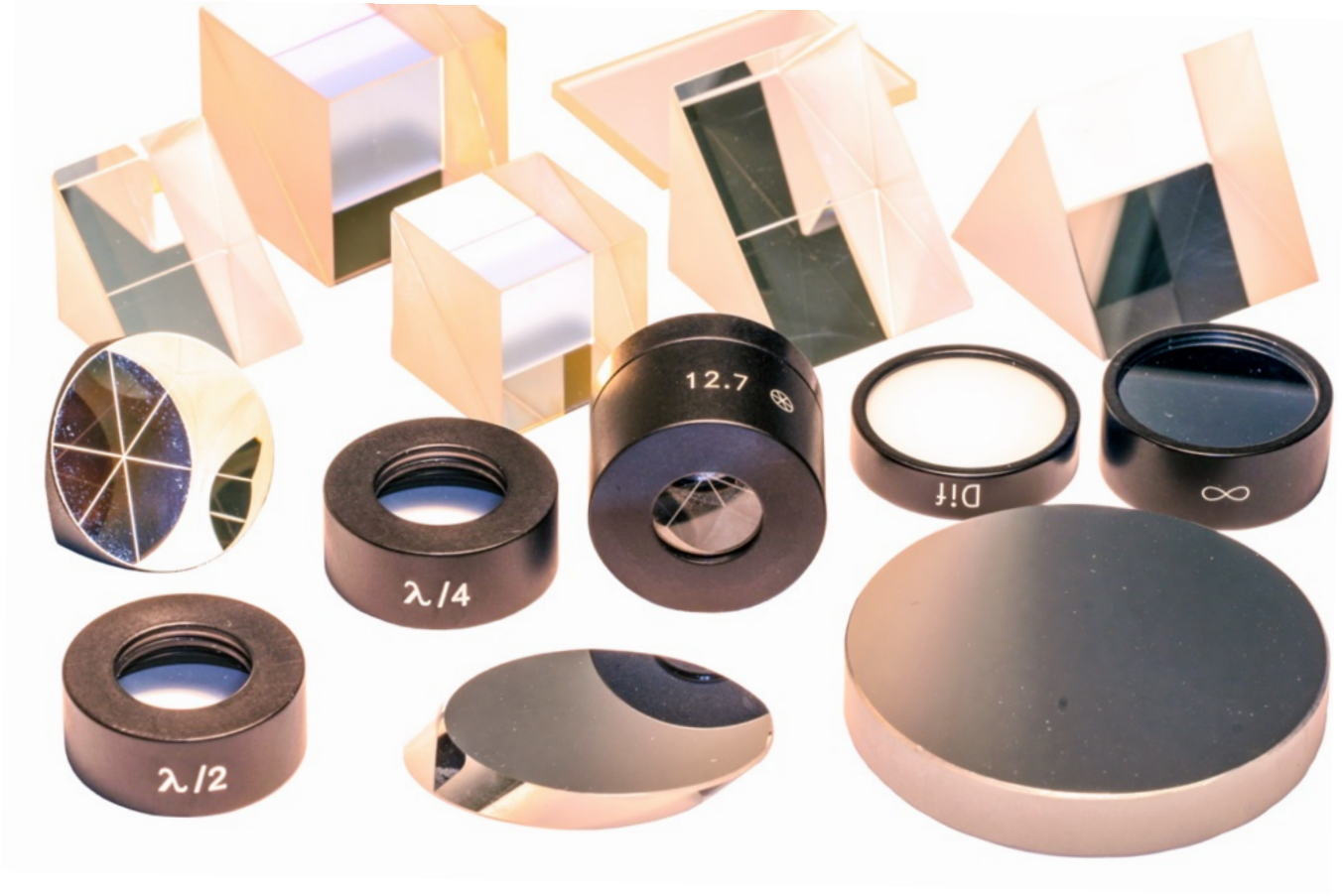
20-640 Heat Abs KG-1, mnt 25

Heat Absorbing FIlter KG-1
Clear Aperture = 21.4 mm
For Halogen Lamp heat absorbtion.

20-642 Heat Abs KG-1, mnt 30

Heat Absorbing FIlter KG-1
Clear Aperture = 24 mm
For Halogen Lamp heat absorbtion.

Prism Work



20-400 Beamsplitter Prism
12.7 x 12.7 x 12.7 mm

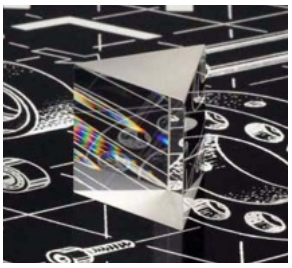
20-402 Beamsplitter Prism
20 x 20 x 20 mm

20-404 Beamsplitter Prism
25 x 25 x 25 mm

20-412 Equilateral Prism
20 x 20 x 20 mm

20-414 Equilateral Prism
25 x 25 x 25 mm

Works with Microptic 50, and Microptic 40,



20-420 Right Angle Prism
20 x 20 mm

20-422 Right Angle Prism
25 x 25 mm

Works with Microptic 50, and Microptic 40.

20-426 Littrow Prism

Littrow Prism
20 x 20 mm
Intended for Microptic 50, and Microptic 40, works with shift corner connector 50-188 to provide 60° Inclined viewing.

20-430 Corner Cube, mount 25

Corner Cube Prism
Clear Aperture = 11.7 mm
AR coating: Visible

Works with Microptic 50, and Microptic 40.

20-432 Corner Cube, mount 30

Corner Cube Prism
Clear Aperture = 24 mm
AR coating: Visible

Works with Microptic 50, and Microptic 40.

Mirrors

20-440 Front Surface Mirror

Protected Aluminum Coating
25 x 38 x 5 mm
For Tilt stage 50-352
Works with Microptic 50, and Microptic 40.

20-442 Front Surface Mirror

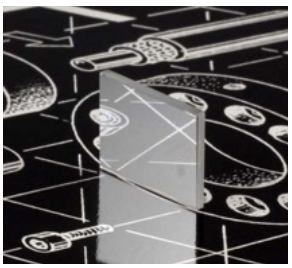
Protected Aluminum Coating
25 x 38 x 2 mm
For Tilt stage 50-352
Works with Microptic 50, and Microptic 40.

20-444 Front Surface Mirror

Protected Aluminum Coating
12.5 x 18 x 5 mm
For Micromax 25/30 System

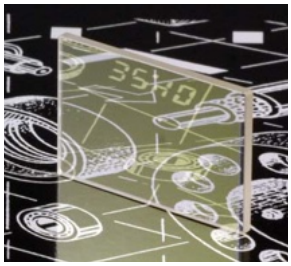
20-446 Front Surface Mirror

Protected Aluminum Coating
12.5 x 18 x 2 mm
For Micromax 25/30 System



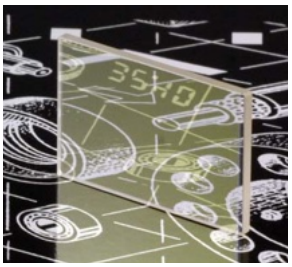
20-450 Beamsplitter Plate

Beamsplitter Mirror 50/50
12.5 x 18 x 2 mm
For Tilt stage 50-352
Works with Microptic 50, and Microptic 40.



20-452 Beamsplitter Plate

Beamsplitter Mirror 50/50
25 x 38 x 2 mm
For Micromax 25 System



20-470 Elliptical Mirror

12.7 x 18 x 3.2
Clear Aperture = 12.7 mm
Protected Aluminum Coating
For Micromax 45 Deg. Mirror Mount 25-337

20-474 Elliptical Mirror

22.4 x 31 x 3.5
Clear Aperture = 22.4
Protected Aluminum Coating
For tiltable mirror mount 50-337
Works with Microptic 50/40.

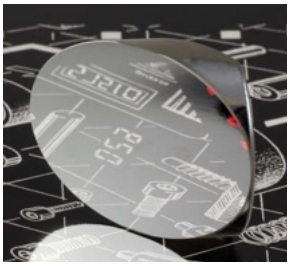
20-478 Elliptical Mirror

47 x 67 x 10 mm
Clear Aperture = 47
Protected Aluminum Coating
For Minioptic 45 Deg. Mirror mount 100-342

20-454 Elliptical Beamsplitter Mirror 50/50 20x28x3.2 mm
BK7, 1/4 Wave

20-456 Elliptical Beamsplitter Mirror 50/50 22.4x31x3.5 mm
BK7, 1/2 Wave

20-458 Elliptical Beamsplitter Mirror 50/50 48x67x10 mm
BK7, 1/2 Wave



20-466 Round Flat Mirror
24 mm Clear Ap, 1/10 Wave
Quartz, 25 Ø x 5 mm, **Mount 30**

20-468 Flat Round Mirror
48 mm Clear Ap, 1/10 Wave
Quartz, 50 Ø x 8 mm, **Mount 60**
Works with Minioptic 100-340

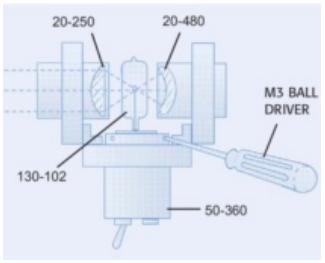
20-462 Flat Mirror **Mount 25**
Clear Ap: 21.4 mm, 1/4 Wave
BK-7, Protected Aluminum

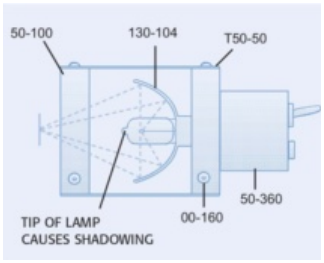
20-464 Flat Mirror **Mount 25**
Clear Ap: 21.4 mm, 1/10 Wave
Quartz, Protected Aluminum
Mirrors are 24.4Ø x 5 mm

20-480 Concave Mirror f = -10
Protected Aluminum, 2 Waves

20-482 Concave Mirror f = -16
Protected Aluminum, 2 Waves

20-490 Concave Mirror f = -50
All in Mount 25, Clear Ap = 21.4

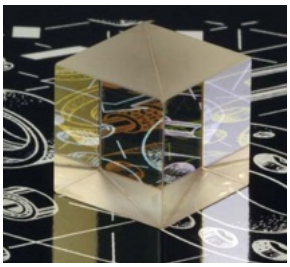




Polarization Optics

20-408 Polarizing Cube Beamsplitter
20 x 20 x 20 mm

20-410 Polarizing Cube Beamsplitter
25 x 25 x 25 mm



20-610 Half Wave Plate

Made of polymer sandwitched between teo glass plates,
Clear Aperture: 11.5 mm
May be utilized with rotary mount 50-172, or handling ring 25-200.

20-612 Quarter Wave Plate

Made of polymer sandwitched between teo glass plates,
Clear Aperture: 11.5 mm
May be utilized with rotary mount 50-172, or handling ring 25-200.

20-600 Glass Polarizer Mnt 25

Glass protected polarizer,
Clearance Aperture: 21.4 mm
May be utilized with rotary mount 50-172, or handling ring 25-200.

20-602 Glass Polarizer Mount 60

Glass protected polarizer,
Clearance Aperture: 48 mm
May be secured to Micromax 60 tubing. The fine thread may be utilized for rotation, with 1 degree resolution. For Mini/Macroptic 100/150 system.

Diffusers

20-620 Glass DIffuser Mnt 25
Clear Aperture: 21.4 mm

20-622 Glass DIffuser Mnt 30
Clear Aperture: 24 mm

20-624 Glass DIffuser 50
Unmounted, 50 Ø x 3 mm

20-430 Opal Diffuser Mnt 25
Clear Aperture: 21.4 mm

20-632 Opal DIffuser 50
Unmounted, 50 Ø x 3 mm

Pinholes / Slits

20-752 Pinhole 10 um
Thin Stainless Steel film
For Spatial Filters

20-756 Pinhole 250 um
Thin Stainless Steel
For Alignment apllications

20-762 Slit 0.2 mm
Thin Steel Sheet
For Spectroscopy experiments
May be combined with handling ring 25-200 for easier usage.

Fiber Optics

20-500 FC Face Plate Mount 25

Tiltable face Plate for connectorized FC- typecables. Includes 0-80 ball driver for tilt alignment.

20-502 ST Face Plate Mount 25

Tiltable face Plate for connectorized ST- type cables. Includes 0-80 ball driver for tilt alignment.

20-504 SMA Face Plate Mount 25

Tiltable face Plate for connectorized SMA- typecables. Includes 0-80 ball driver for tilt alignment.

20-522 FC Bare Fiber Chuck

Has internal micro chuck to secure bare fibers.

20-506 FC Connector with X-Y

Fiber optics XY stage for FC type connectorized fiber cables. Includes 0-80 ball driver for tilt alignment.

20-508 SMA Connector with X-Y

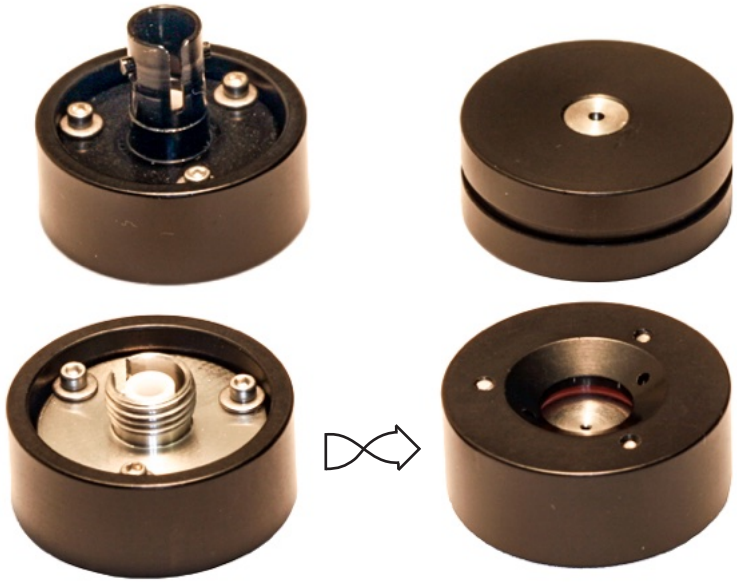
Fiber optics XY stage for ST type connectorized fiber cables. Includes 0-80 ball driver for tilt alignment.

20-510 ST Connector with X-Y

Fiber optics XY stage for SMA type connectorized fiber cables. Includes 0-80 ball driver for tilt alignment.

ST

FC



FC

Applications of Optoform Concept in Biomedical Optics

A point of fixation is constructed with Micromax 25 to assist a physician to main tain the patient's eyesight at the center of field of view of a Photopter. The Photopter adapter 25-320 is designed to fit the front aperture of a standard Phoropter. Beamsplitter holder 25-340 with a relatively wide 18 mm clear aperture helps to maximize the field of view of patient's eyesight. The plano convex lens projects image of the pinhole at infinity. The point source is a batter powered light source with 0.5" mounting diameter. The graduated focusing mount 25-108 allows the necessary adjustments to be made from the light source to patient's eyesight.

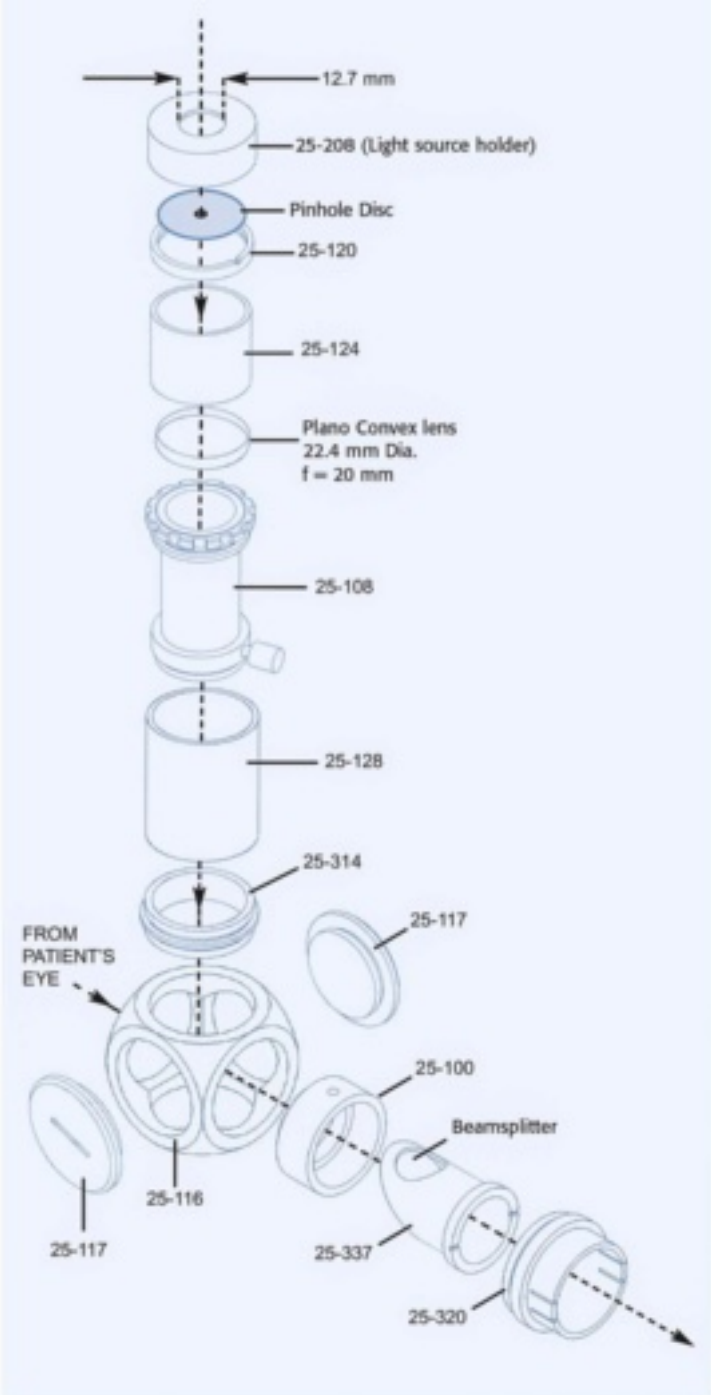
25-116

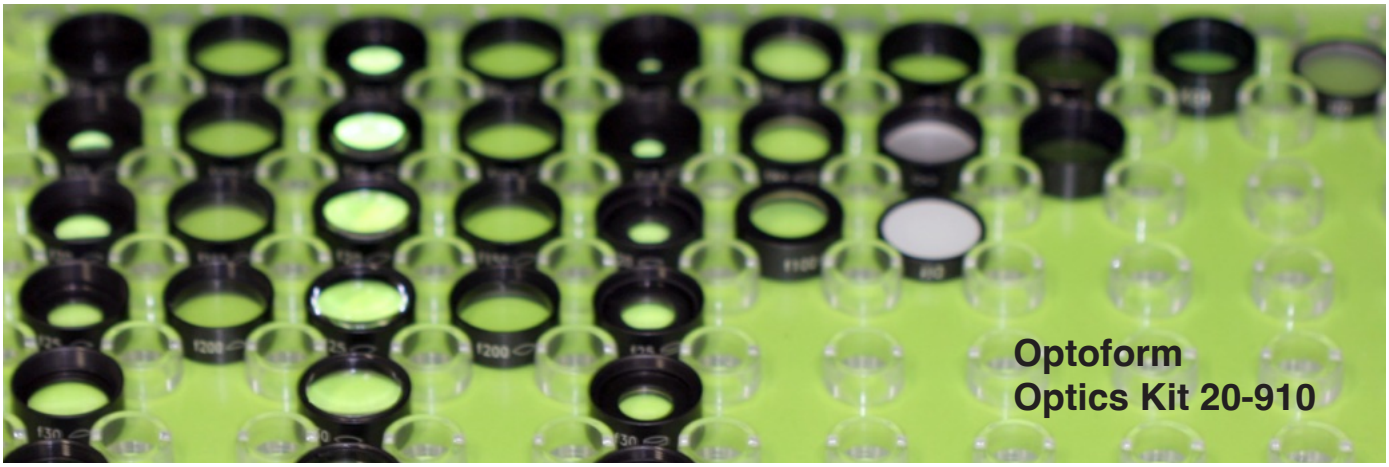
25-320

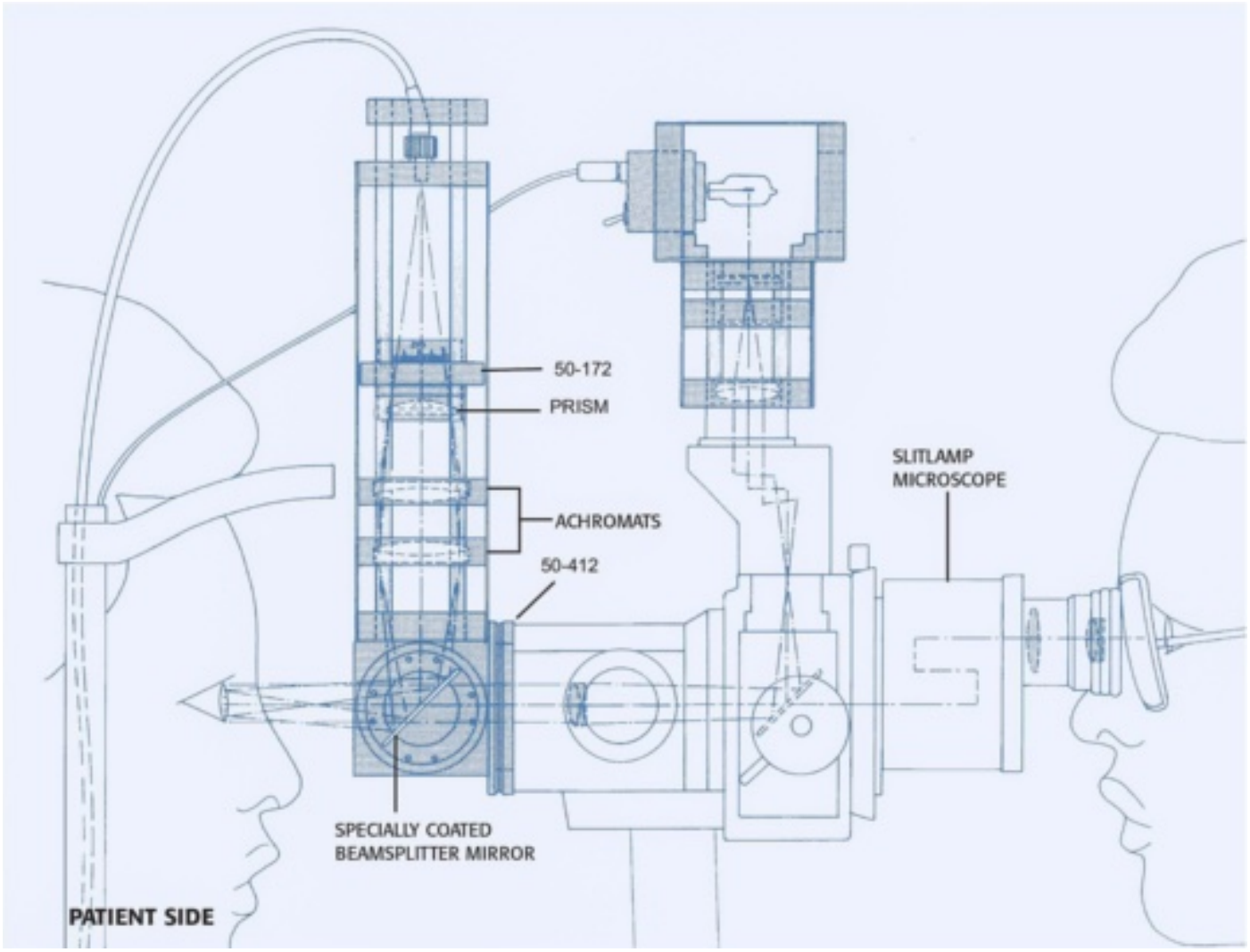
25-100

25-108

25-208







In this laser eye surgery system, a laser beam is first delivered to top of a vertical column via an optical fiber. Inside the column a Mutli-faceted pyramid prism is rotated and translated vertically for beam manipulation.

This arrangement calls for a combination of support rods, and slotted T50 tubing which would allow the user to control both vertical, and position and limited rotation of 50-172 rotary stage from out side of the tubing.

The interface to the slit lamp microscope (in this case, Nikon), was made possible by a custom mount 50-412 which may be ordered for a specific brand.

Mounting Tolerances

While inside optics cells, optical elements are easily identifiable, they are unscratchable, they are easy to use, they are easy to store, and the optics will stay clean because they are not touched by hands. They are also centered inside the mounts with reasonable seating tolerances + / - 0.07 mm. Mounting tolerance of 25 mm lens cells placed inside Optoform mounts is better than + / - 0.05 mm. The centration of Microptic 50 mounts along the rods is better than + / - 0.02.