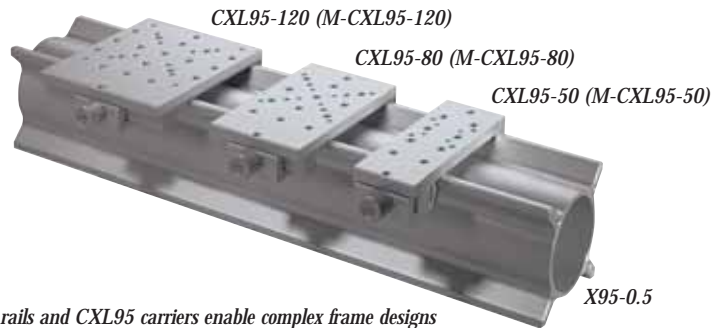


X95 Structural Rails and Carriers



X95 rails and CXL95 carriers enable complex frame designs

- Ideal for constructing large-scale, linear optical devices
- Rigid yet lightweight rail design
- Easy-on/Easy-off dovetail mounting
- Rail lengths of up to 20 ft (6.4 m)

The X95 Rail and Carrier System is a rigid and lightweight support for large-scale, linear optical and instrumentation setups.

X95 Rails are cylindrical aluminum extrusions with four longitudinal reinforcing ribs. The 10 mm thick ribs provide four symmetrical dovetail clamping surfaces for carriers and significantly increase the longitudinal and torsional rigidity of the rail. X95 rails are available in standard lengths of up to 2.5 m. On request, lengths of up to 20 ft (6 m) may be special-ordered. Rail end faces are tapped with four M6 holes in a 63 mm square pattern.

Rigid support structures can be easily constructed using CX95A/CX95AS right angle joints and CX100 structural cubes. Large structures can be stiffened by AX94 or AX95 guy stiffens in a tension arrangement. Newport has adaptor plates to attach X95 components to pneumatic Stable Level Mounts, elastomeric dampers or rubber bumpers. Casters and leveling feet are also available. These options allow flexible sized workstation frames for breadboards, granite tables or small optical tables.

Components can be quickly mounted to or removed from rails via CXL95 carriages. CXL95-50, CXL95-80 and CXL95-120 carriages are designed to support positioners with 50, 80 and 120 module sizes on the X95 Rail. English or metric mounting holes allow direct mounting of a wide selection of linear stages, rotation stages and optical mounts.

For easy assembly and disassembly, carriers can be removed or installed at any point on the rail by loosening the thumbscrew and tipping the carrier. A unique clamp design eliminates contact between the screw shaft and rail for easier sliding, more stable positioning and prevention of possible rail damage from over tightening. Strong, secure dovetail mounting design allows carriers to be mounted vertically on the sides of the rail, or even suspended upside-down from the bottom of the rail.



M-PBN16 allows X95 bridges to be mounted to any Newport breadboard



An ultra-sound non-destructive testing system built with X95 rails and Newport positioning equipment



X95 rail can be used for platform support frames and bridges

Specifications

Cross-sectional Area (cm ²)	20
Moment of Inertia about X Axis (cm ⁴)	220
Moment of Inertia about Δ Axis (cm ⁴)	220
Moment of Inertia about 0 Axis (cm ⁴)	440
Bending Tolerance (mm/m)	0.8
Twisting Tolerance	0.75 °/m
Weight [lb/ft (kg/m)]	3.7 (5.5)



CX95A right angle joint connects the bottom of X95 rail to the side of X95 rail

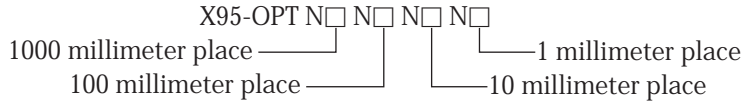


X95 rail with CXL95 carriers with BEX95 Series end supports and BCX95 Series span supports

Ordering Information

Model	Rail Length (m)
X95-0.5	0.5
X95-0.64	0.64
X95-0.75	0.75
X95-1	1.0
X95-1.5	1.5
X95-2	2.0
X95-2.5	2.5

Ordering Procedure for Special Lengths



Examples:

For X95 with length of 2873 mm order X95-OPTN2N8N7N3.

For X95 with length of 450 mm order X95-OPTN0N4N5N0.

Rail Carriers for X95

Model (Metric)	Description
CXL95-50 (M-CXL95-50)	50 mm Rail Carriage
CXL95-80 (M-CXL95-80)	80 mm Rail Carriage
CXL95-120 (M-CXL95-120)	120 mm Rail Carriage

Construction Hardware

Model	Description
CX95A	Right Angle Joint—thru holes
CX95AS	Right Angle Joint—tapped holes
CX100	Structural Corner Cube
AX95	Guy Pivot Support
AX94	Steel rod Guy (needs 2 CX95A carriers for attachment to X95 rail)
BEX95S	Single Bench Leg (end); max. load: 240 lb (110 kg)
BEX95D	Double Bench Leg (end); max. load: 240 lb (110 kg)
BCX95S	Single Bench Leg (side); max. load: 240 lb (110 kg)
BCX95D	Double Bench Leg (side); max. load: 240 lb (110 kg)
X95-T	T-stand; max. load: 240 lb (110 kg)
X95-LF	Leveling feet (centered); max. load: 240 lb (110 kg)
VS95	Leveling foot (side mounted); max. load: 240 lb (110 kg)
CAST95	Caster; max. load: 275 lb (125 kg)
M-PBN16	Base plate for vertical mounting of X95 rails to optical tables
X95-AP1	Mounting plate for SLM-1A and RB135
X95-AP3	Mounting plate for SLM-3A and RB335
X95-EP	Plastic end plate
RB135	Rubber bumper; max. load: 135 lb (60 kg)
RB335	Rubber bumper; max. load: 335 lb (150 kg)
SLM-1A	Stabl-Levl Mount (see page 1132)
SLM-3A	Stabl-Levl Mount (see page 1132)
ND40-A (M-ND40-A)	NewDamp Elastomeric Mount (see page 1135)
ND41-A (M-ND41-A)	NewDamp Elastomeric Mount (see page 1135)



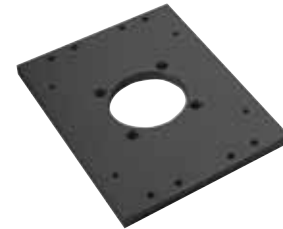
Angled joint with AX95 guy pivot and CX95AS right angle joint



X95-LF leveling foot



M-PBN16 base plate supporting vertical X95 leg



M-PBN16 base plate for vertical mounting to optical tables



AX95 guy pivot enables angular structures and gussets

TECHNICAL REFERENCE

OPTICAL TABLES

BREADBOARDS AND GRID PLATFORMS

HONEYCOMB, GRANITE AND RIGID STRUCTURES

ISOLATORS

WORKSTATIONS AND ISOLATED PLATFORMS

STRUCTURAL RAILS AND CARRIERS

TESTING, ANALYSIS AND DESIGN



CX100 structural cube with CAST95 casters and VS95 leveling foot



BEX95S single bench leg—end support



BCX95D double bench leg—span support



AX95 guy pivot support enables angled structures



BEX95D double bench leg—end support



BCX95S single bench leg—span support



CX95AS right angle joint with tapped holes



X95-LF leveling foot



X95-T stand

X95 Frame Designs



X95 cross coupling with CX95A and CX95AS right angle joints



Three legged X95 stand with BEX95S bench legs and RB335 rubber bumpers



CX95A right angle joints and CX100 structural cubes enable versatile structures



X95 workstation frame with RB335 rubber bumpers



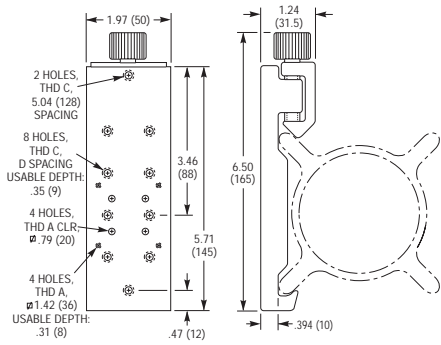
Narrow workstation built with X95T stands



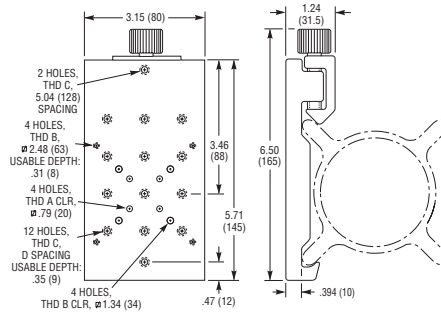
X95 workstation with granite top and leg casters

Dimensions

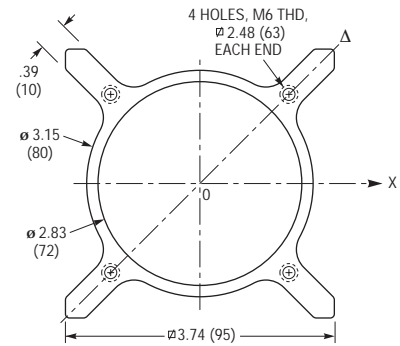
Model CXL95-50



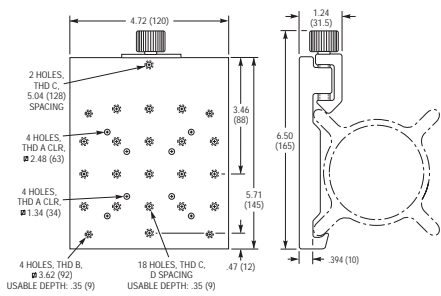
Model CXL95-80



Model X95

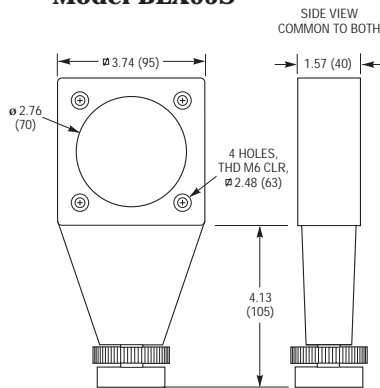


Model CXL95-120

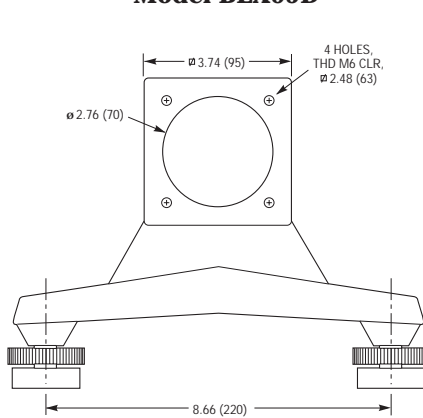


Model (Metric)	Thread			Dimensions [in. (mm)]
	A	B	C	D
CXL95-50 (M-CXL95-50)	4-40 (M3)		1/4-20 (M6)	1.000 (25.0)
CXL95-80 (M-CXL95-80)	4-40 (M3)	8-32 (M4)	1/4-20 (M6)	1.000 (25.0)
CXL95-120 (M-CXL95-120)	8-32 (M4)	10-24 (M5)	1/4-20 (M6)	1.000 (25.0)

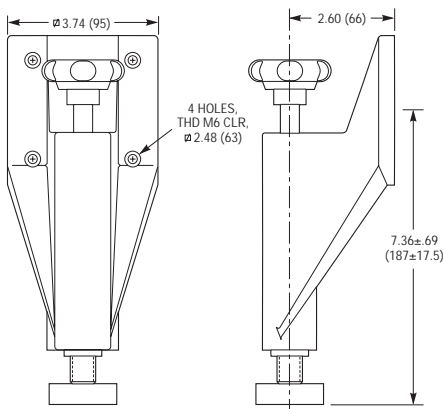
Model BEX95S



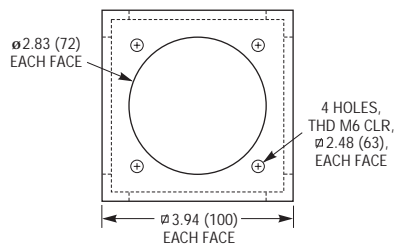
Model BEX95D



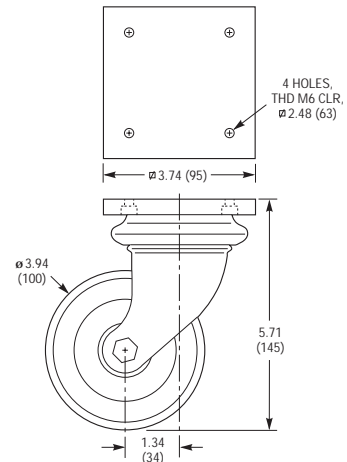
Model VS95



Model CX100



CAST95



TECHNICAL REFERENCE
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WORKSTATIONS AND ISOLATED PLATFORMS
STRUCTURAL RAILS AND CARRIERS
TESTING, ANALYSIS AND DESIGN

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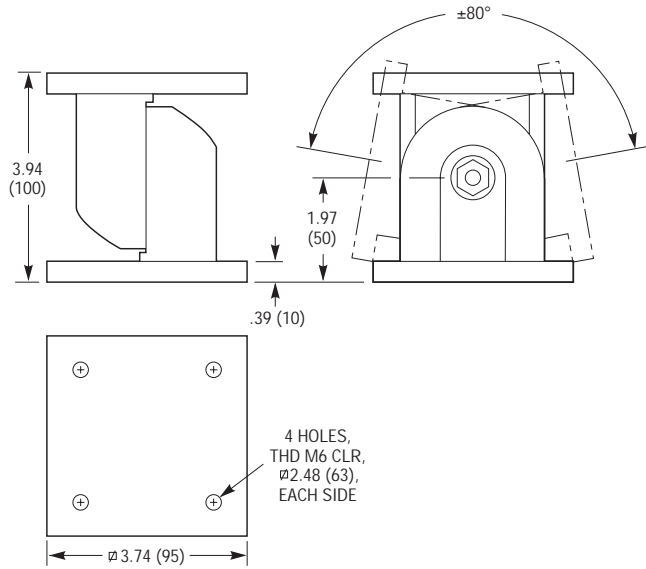
WORKSTATIONS AND ISOLATED PLATFORMS

STRUCTURAL RAILS AND CARRIERS

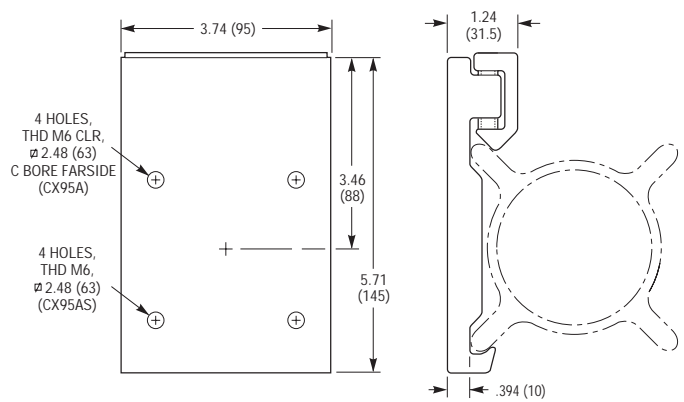
TESTING, ANALYSIS AND DESIGN

Dimensions

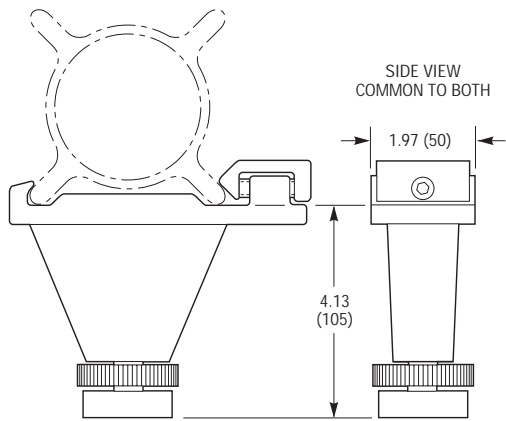
Model AX95



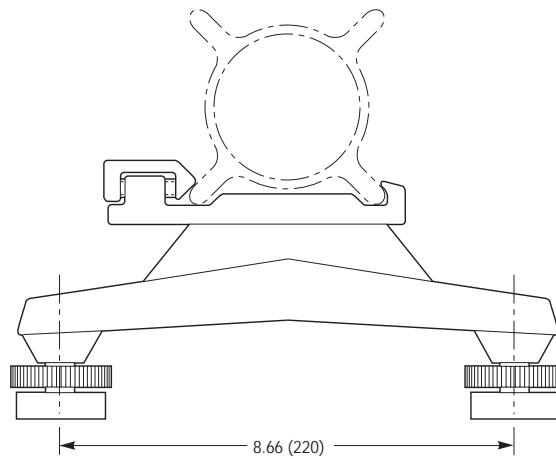
Model CX95AS or CX95A/CX95AS



Model BCX95S



Model BCX95D



Model M-PBN16

