

Standard Lens Specifications

N series lens options are designed specifically for Norxe P-Series projectors.

Lens options comprise all glass, aspherical, no doublet optical elements & include 'lens lock' technology. The 'lens lock' feature allows the end user to physically lock the lens to the projector body, lock the lens adjustment rings into position and lock the lens body to 3rd party supporting clamps for additional rigidity in extreme circumstances.

Scheimpflug adjustment is a standard feature on all P-Series projectors.

Lens Name, Description & Throw Ratio:

Projector Type	Lens Name	Lens Description	Lens Throw Ratio
P-Series	N1	Extra Wide Zoom Lens	0.80 - 1.25:1 @ WQXGA/4K n-shift 0.70 - 1.09:1 @ 4K Native/6K n-shift/8K n-shift
	N2	Wide Zoom Lens	1.20 - 1.60:1 @ WQXGA/4K n-shift/ 1.05 - 1.40:1 @ 4K Native/6K n-shift/8K n-shift
	N3	Super Wide Lens	0.63:1 @ WQXGA/4K n-shift 0.55:1 @ 4K Native/6K n-shift/8K n-shift
	N4	Standard Zoom Lens	1.55 - 2.60:1 @ WQXGA/4K n-shift 1.35 - 2.27:1 @ 4K Native/6K n-shift/8K n-shift
	N5	Extra Wide XS Zoom Lens	0.80 - 1.25:1 @ WQXGA/4K n-shift 0.70 - 1.09:1 @ 4K Native/6K n-shift/8K n-shift
	N6	Ultra Wide Lens	0.58:1 @ WQXGA/4K n-shift 0.50:1 @ 4K Native/6K n-shift/8K n-shift

Lens Shift Parameters:

Resolution / Axis	N1	N2	N3	N4	N5	N6
WQXGA	± 68%	± 120.5%	± 95%	± 115%	± 84%	± 95%
4K Native	± 53%	± 116%	± 87%	± 110	± 74%	± 87%
Horizontal						

Lens Shift values provided assume 50% is on axis, that 100% Lens Shift equals half of image height / width.

'Product Support - Norxe Lens Shift Explained' documentation is available separately.

Lens Length & Weight:

Parameter	N1	N2	N3	N4	N5	N6
Lens Length	218.50 mm 8.61 inches	250.49 mm 9.87 inches	315.1 mm 12.41 inches	283.50 mm 11.16 inches	232.51 mm 9.15 inches	333.20 mm 13.12 inches
Lens Weight	2.20 kg/4.85 lbs	2.90 kg/6.40 lbs	5.52 kg/12.20 lbs	3.80 kg/8.40 lbs	2.4 kg/ 5.30 lbs	7.1 kg/ 15.66 lbs

Standard Lens Specifications

Lens Optical Performance Characteristics:

Parameter	N1	N2
Working F#	2.2 - 2.55	2.2 - 2.43
Iris Iris F#	Yes 2.2 - 8.0	Yes 2.2 - 8.0
Focal Length	15.85 - 24.70 mm	23.85 - 31.75 mm
Focus Range	Optical: 1.5 - 8.0 M Mechanical: 1.0 - 18.0 M	Optical: 1.5 - 15.0 M Mechanical: 1.0 - 20.0 M
MTF	Centre: 60% @ 66 lp/mm Corners: 50% @ 66 lp/mm	Centre: 60% @ 66 lp/mm Corners: 50% @ 66 lp/mm
Lateral Color	Wide Tele @2.5 M 660-550 nm: <4.4µm <2.7µm 660-440 nm: <4.4µm <3.1µm 630-550 nm: <2.9µm <1.6µm 630-440 nm: <2.9µm <2.2µm 550-440 nm: <2.7µm <2.2µm	Wide Tele @3.0 M 660-550 nm: <3.5µm <1.9µm 660-440 nm: <3.5µm <3.1µm 630-550 nm: <2.3µm <1.0µm 630-440 nm: <2.3µm <2.8µm 550-440 nm: <1.8µm <2.8µm
Optical Distortion (nominal projection distance)	Wide Tele @2.5 M - 0.16% - 0.10%	Wide Tele @3.0 M - 0.15% - 0.15%

Parameter	N3	N4
Working F#	2.2	2.2 - 2.48
Iris Iris F#	Yes 2.2 - 8.0	Yes 2.2 - 8.0
Focal Length	12.78 mm	30.70 - 51.45 mm
Focus Range	Optical: 0.7 - 3.0 M Mechanical: 0.4 - 6.0 M	Optical: 1.5 - 15.0 M Mechanical: 1.0 - 30.0 M
MTF	Centre: 86.7% @ 66 lp/mm Corners: 75.4% @ 66 lp/mm	Centre: 65% @ 66 lp/mm Corners: 60% @ 66 lp/mm
Lateral Color	@1.4 M 660-550 nm: <3.6µm 660-440 nm: <3.6µm 630-550 nm: <2.4µm 630-440 nm: <2.8µm 550-440 nm: <2.8µm	Wide Tele @4.0 M 660-550 nm: <3.2µm <4.1µm 660-440 nm: <3.2µm <5.4µm 630-550 nm: <2.2µm <2.7µm 630-440 nm: <2.8µm <4.0µm 550-440 nm: <2.8µm <2.4µm
Optical Distortion (nominal projection distance)	@1.4 M - 0.46%	Wide Tele @4.0 M - 0.55% - 0.03%

Standard Lens Specifications

Parameter	N5	N6
Working F#	2.2 - 2.6	2.8
Iris Iris F#	Yes 2.2 - 8.0	Yes 2.8 - 8.0
Focal Length	15.85 – 24.70 mm	11.6 mm
Focus Range	Optical: 1.5 - 8.0 M Mechanical: 1.0 - 18.0 M	Optical: 0.7 - 3.0 M Mechanical: 0.4 - 6.0 M
MTF	Centre: 65% @ 92 lp/mm Corners: 60% @ 92 lp/mm	Centre: 86.7% @ 66 lp/mm Corners: 75.4% @ 66 lp/mm
Lateral Color	Wide Tele @4.0 M 660-550 nm: <3.8µm <3.3µm 660-440 nm: <4.5µm <3.6µm 630-550 nm: <2.3µm <1.9µm 630-440 nm: <3.0µm <2.2µm 550-440 nm: <1.8µm <1.5µm	@1.4 M 660-550 nm: <5.1µm 660-440 nm: <5.1µm 630-550 nm: <3.5µm 630-440 nm: <4.2µm 550-440 nm: <4.2µm
Optical Distortion (nominal projection distance)	Wide Tele @2.0 M - 0.18% - 0.50%	@3.0 M - 1.98%

Projection Lens Motors:

Focus, zoom (where applicable) & Iris on all projection lens options is motorized. Stepper motors are used throughout to ensure high degree positional accuracy.

Projection Point:

‘Product Support - N Series Lens Projection Point’ documentation containing additional information & illustrations is available separately.

Depth of Focus:

‘Product Support - Depth of Focus’ documentation containing additional information & illustrations is available separately.

Lens Support:

Norxe recommends that lenses are supported when used in extreme circumstances (i.e. in conjunction with motion systems). The fixed lens flange features 4 x M4 threaded inserts at 90° intervals about its circumference in order that 3rd party lens clamps can be interfaced for this purpose.

Disclaimer

Specifications subject to change without prior notice. Always check www.norxe.com for the latest information.

Optical tolerances are +/- 5%.