Standard Lens Specifications

N series lens options are designed specifically for the P1, P1+ and P2 projectors.

Lens Part Number, Description & Throw Ratio: -
Focus, zoom (where applicable) & Iris on all lens options is motorized. Stepper motors are used throughout to ensure high degree positional accuracy.

Projector Model	Lens Part Number	Lens Description	Lens Additional Description
P1 / P1+ / P2	N1	Extra Wide Zoom Lens	0.80 - 1.25:1 @ 4K UHD / WQXGA 0.74 - 1.16:1 @ WUXGA
	N2	Wide Zoom Lens	1.20 - 1.60:1 @ 4K UHD / WQXGA 1.12 - 1.50:1 @ WUXGA
	N3	SuperWide Lens	0.63:1 @ 4K UHD / WQXGA 0.59:1 @ WUXGA

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

Resolution / Axis	N1	N2	N3
4K UHD / WQXGA **Vertical** **Horizontal**	 ± 68% ± 57.5%	 ± 120.5% ± 85%	 ± 95% ± 71%
WUXGA **Vertical** **Horizontal**	 ± 56.5% ± 52.5%	 ± 109% ± 78.5%	 ± 84% ± 65%

Lens Optical Performance Characteristics: -

Parameter	N1	N2	N3
Working F#	2.2 - 2.55	2.2 - 2.43	2.2
Iris **Iris F#**	Yes 2.2 - 8.0	Yes 2.2 - 8.0	Yes 2.2 – 8.0
Focal Length	15.85 - 24.70 mm	23.85 - 31.75 mm	12.78 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	Optical: 0.7 - 3.0 M Mechanical: 0.4 - 6.0 M
MTF	Centre: 60% @ 66 lp/mm Corners: 50% @ 66 lp/mm	Centre: 60% @ 66 lp/mm Corners: 50% @ 66 lp/mm	Centre: 86.7% @ 66 lp/mm Corners: 75.4% @ 66 lp/mm
Lateral Color	660-550 nm: <4.3µm 660-440 nm: <4.3µm 630-550 nm: <3.0µm 630-440 nm: <3.0µm 550-440 nm: <3.0µm	660-550 nm: <3.6µm 660-440 nm: <3.6µm 630-550 nm: <2.4µm 630-440 nm: <3.0µm 550-440 nm: <3.0µm	660-550 nm: <3.5µm 660-440 nm: <2.4µm 630-550 nm: <2.5µm 630-440 nm: <2.5µm 550-440 nm: <2.4µm
Optical Distortion	0.32%	0.54%	0.46%

Standard Lens Specifications

Projection Point: -
The Projection Point denotes the origin of a projected image within the projection lens. It should not be confused with Throw Distance.

Parameter	N1	N2	N3
Theoretical Projection Point	Wide 51 mm / Tele 49 mm Distance measured from last optical element back towards the DMD.	Wide 78 mm / Tele 75 mm Distance measured from last optical element back towards the DMD.	71.00 mm Distance measured from last optical element back towards the DMD.

Product Support - N Series Lens Projection Point information is available separately upon request.

Lens Length & Weight: -

Parameter	N1	N2	N3
Lens Length	218.50 mm / 8.61 inches	250.49 mm / 9.87 inches	315.1 mm / 12.41 inches
Lens Weight	2.2 kg / 4.85 lbs	2.9 kg / 6.40 lbs	5.52 kg / 12.17 lbs

Additional Information: -
Lens options are future proofed. Each has been designed to resolve 5.4-micron pixel pitch to ensure compatibility with the next generation native resolution 4K DLP Chip.

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.