



Our Focus is in Plastics

Polymer Optics Ltd.

6 Kiln Ride, Wokingham,
Berks., RG40 3JL, England
Tel/Fax: +44 (0) 1189 893341
www.polymer-optics.co.uk

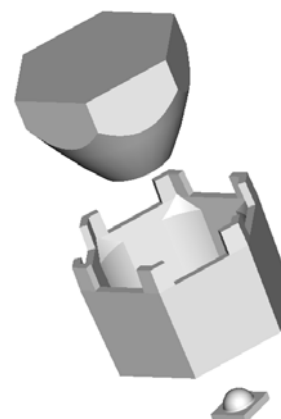
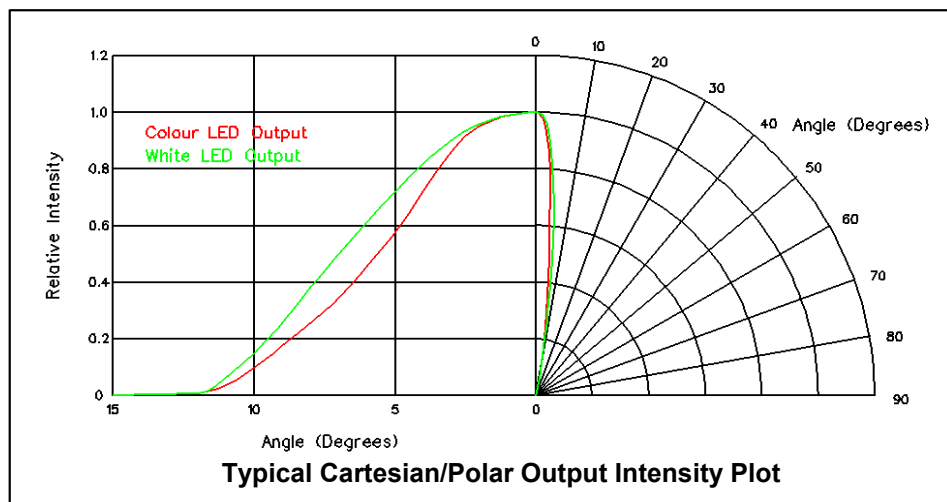
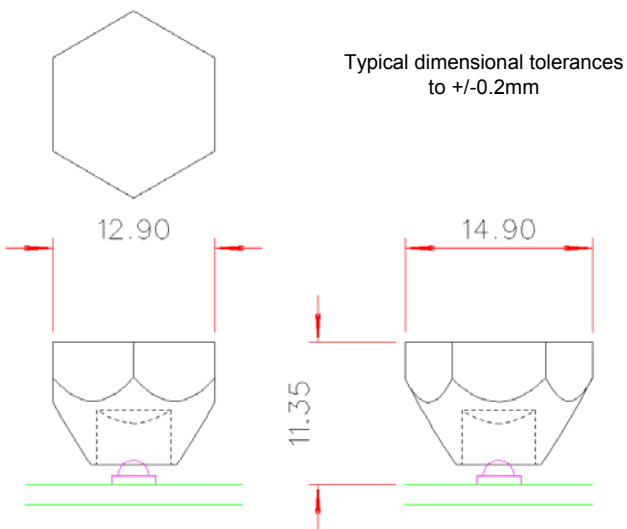
6 Degree LED Collimator Lens - Part No. 120



- Designed to operate with Cree XP-E High Power LED's
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"[®] range

Polymer Optics "Modular LED Optics"[®] design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 223) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



Due to continuous product improvement, POL reserve the right to change specifications without notice.

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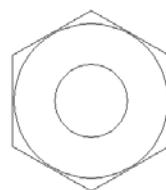
25 Degree LED Collimator Lens - Part No. 124



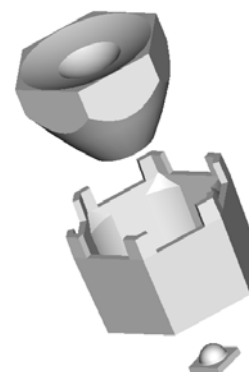
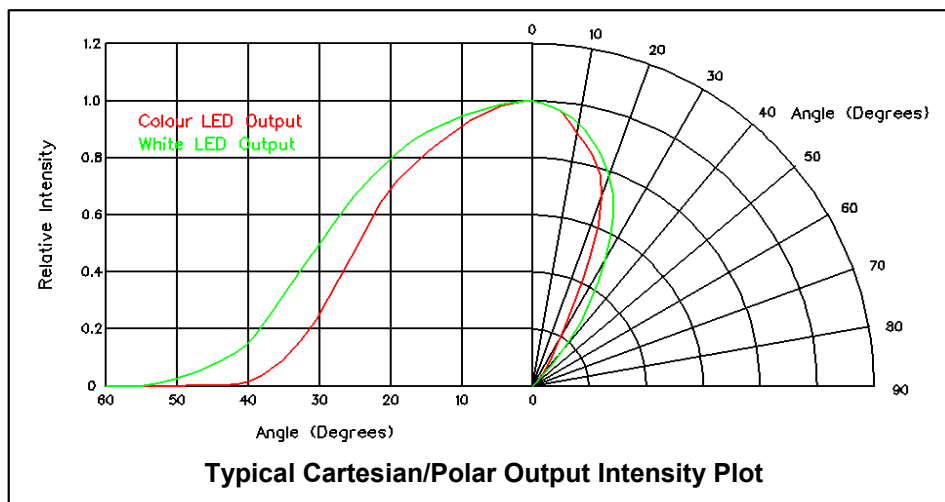
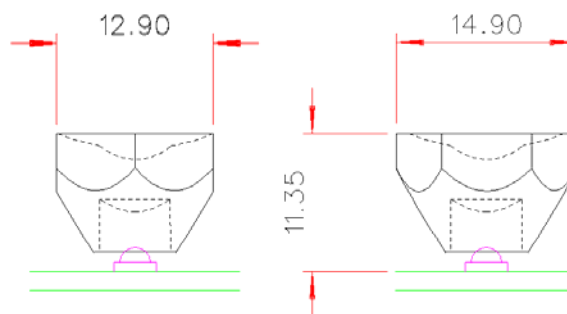
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- High light collection efficiency of >85%
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- Part of the Polymer Optics "Modular LED Optics"[®] range

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Typical dimensional tolerances
to +/-0.2mm



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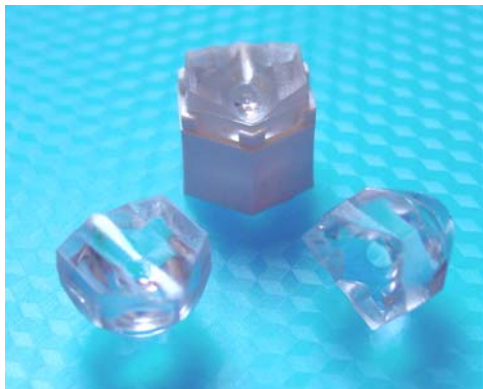


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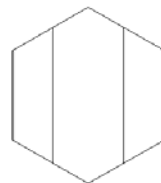
6x25 Degree LED Line Lens - Part No. 126



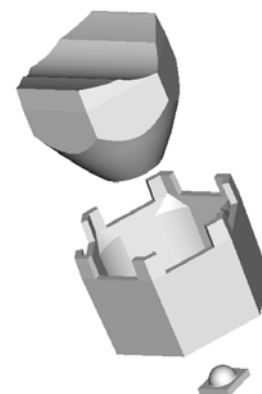
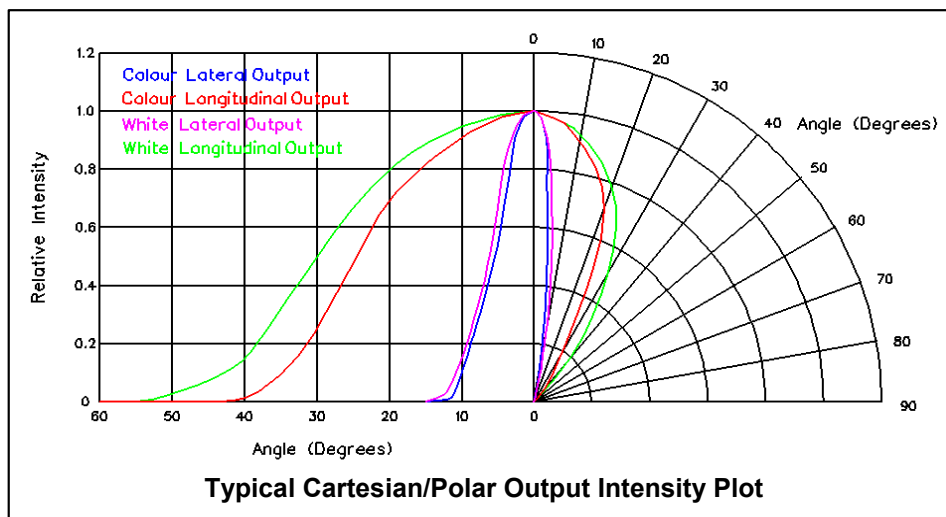
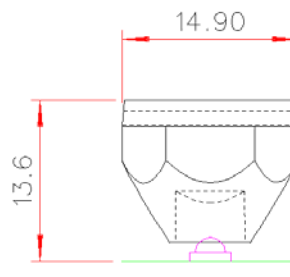
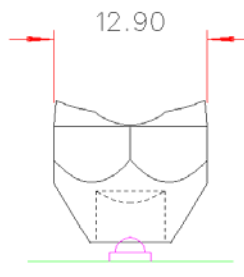
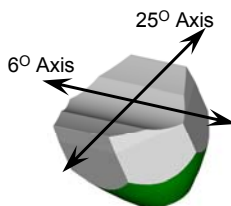
- Designed to operate with Cree XP-E High Power LED's
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"[®] range

Polymer Optics "Modular LED Optics"[®] design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 223) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



Typical dimensional tolerances
to +/-0.2mm



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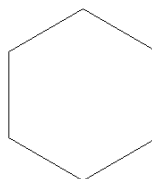
Single Cell LED Concentrator Lens - Part No. 141



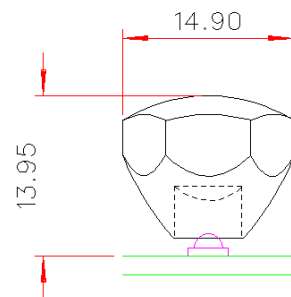
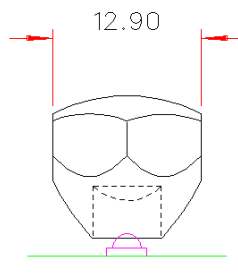
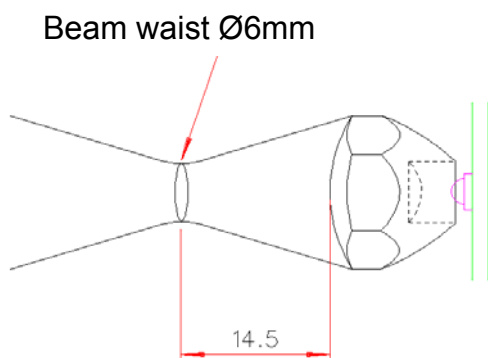
- Designed to operate with Cree XP-E High Power LED's
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range

Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 223) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



Typical dimensional tolerances
to +/-0.2mm



Typical Applications:

- Beam insertion into optical fibre bundles
- Beam insertion into edge of lightguides
- High intensity illumination of small objects for inspection and microscopy



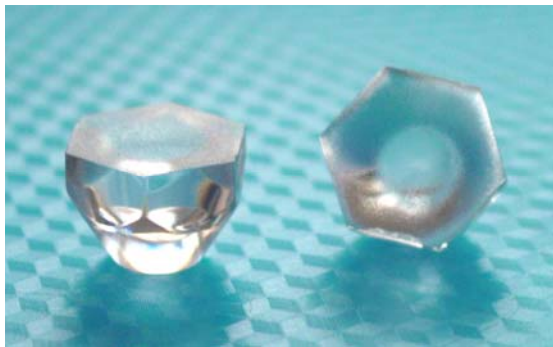


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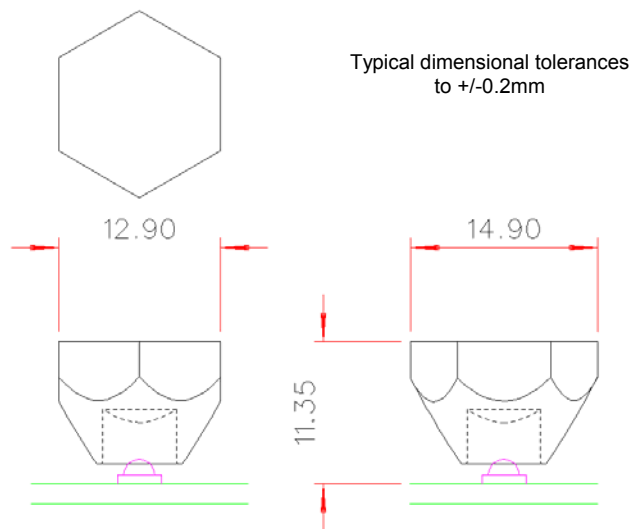
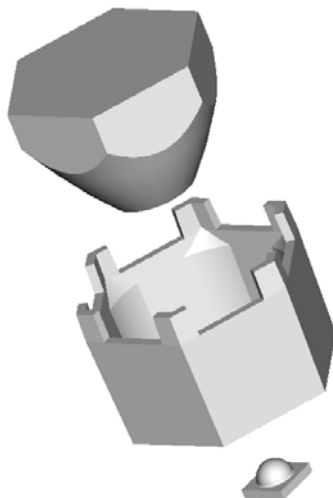
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6 Degree Diffuse LED Collimator Lens - Part No. 185



- Designed to operate with Cree XP-E High Power LED's
- High light collection efficiency of >85%
- Diffuse output surface for improved beam uniformity
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range



Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 223) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



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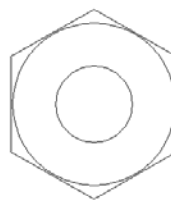
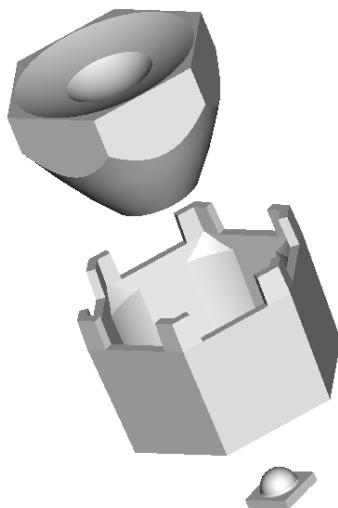
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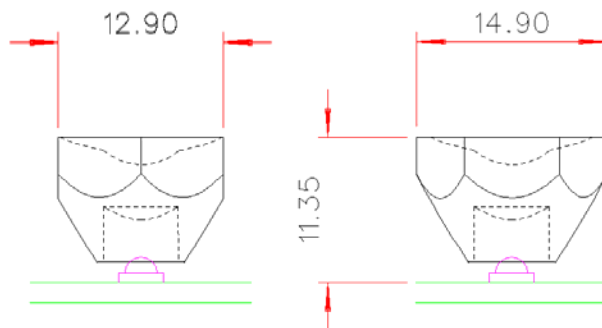
15 Degree LED Collimator Lens - Part No. 201



- Designed to operate with Cree XP-E High Power LED's
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range



Typical dimensional tolerances
to +/-0.2mm



Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 223) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment

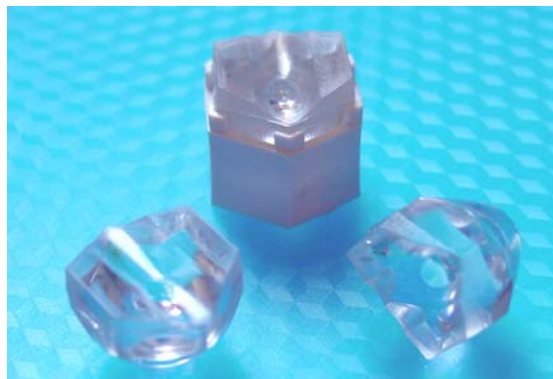


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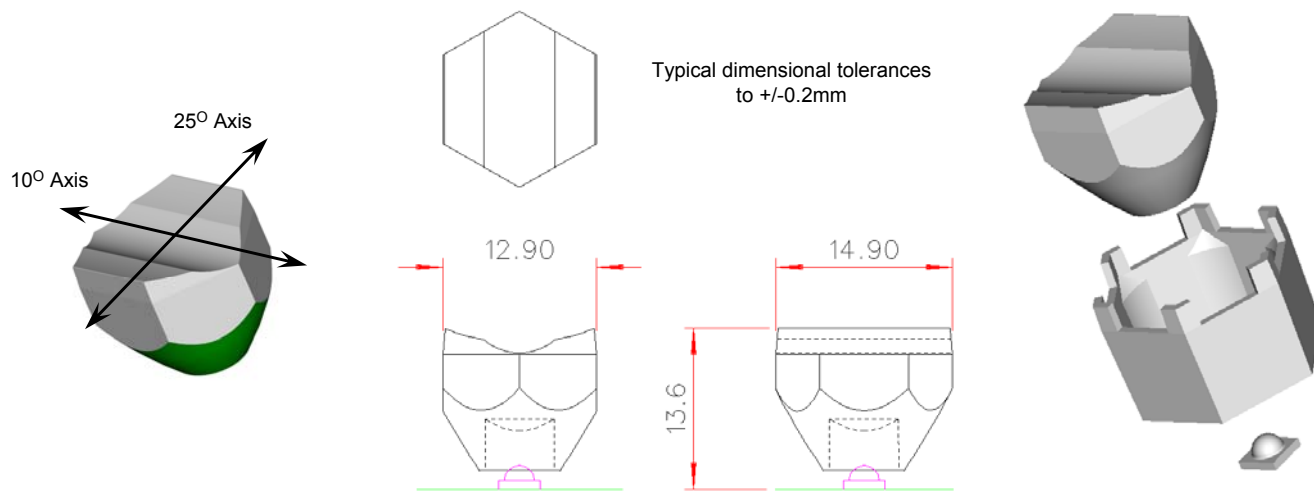
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Diffuse 6x25 Degree LED Collimator Lens - Part No. 216



- Designed to operate with Cree XP-E High Power LED's
- High light collection efficiency of >85%
- Diffuse output surface for improved beam uniformity
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range



Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 223) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



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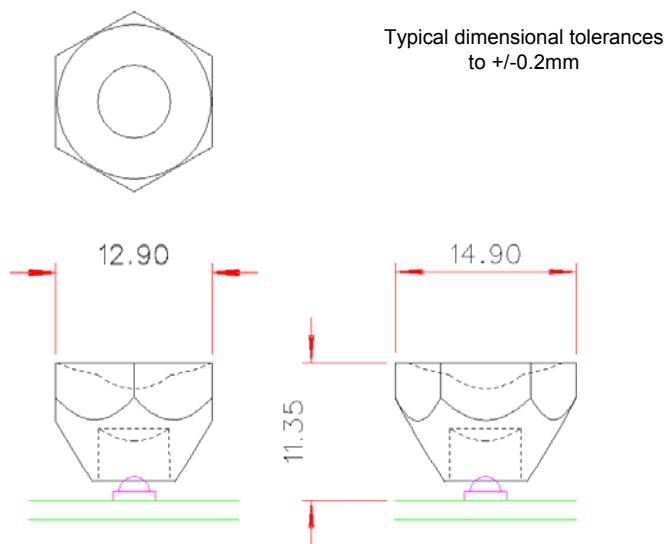
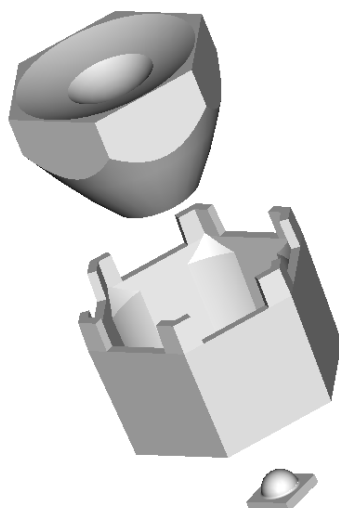
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Diffuse 25 Degree LED Collimator Lens - Part No. 217



- Designed to operate with Cree XP-E High Power LED's
- High light collection efficiency of >85%
- Diffuse output surface for improved beam uniformity
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range



Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 223) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment

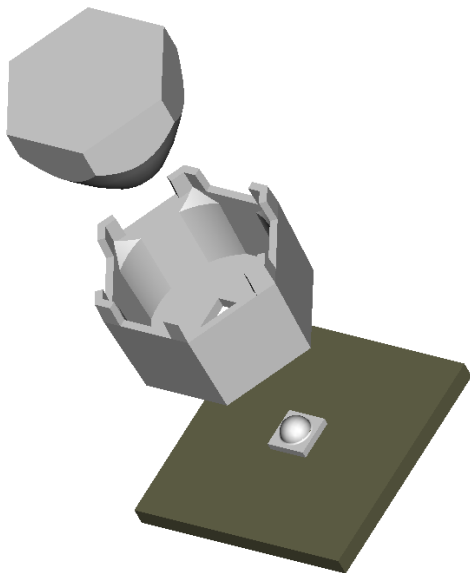


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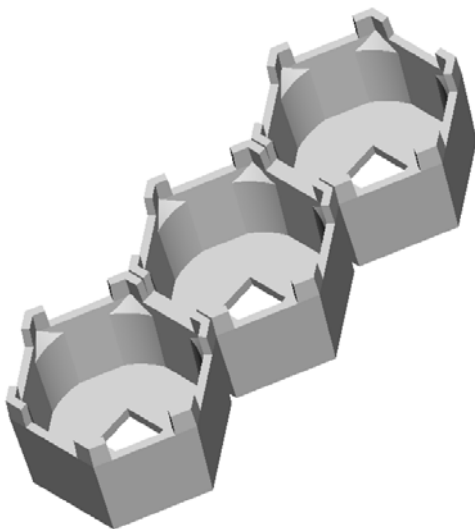
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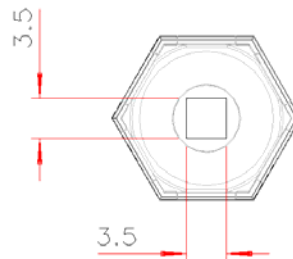
Cree LED Lens Holder - Part No. 223



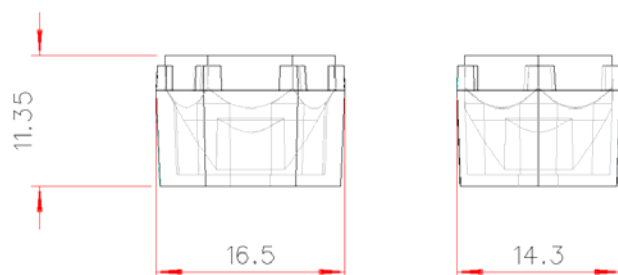
Polymer Optics “Modular LED Optics”[®] design, based on a hexagonal format, allows maximum packing density and assembly flexibility



- Designed for use with Polymer Optics “Modular LED Optics”[®] and custom Polymer Optics designs
- Designed to operate with Cree XP-E High Power LEDs
- Simply mounts onto PCB and self-aligns to LED
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics “Modular LED Optics”[®] range



Typical dimensional tolerances to $\pm 0.2\text{mm}$



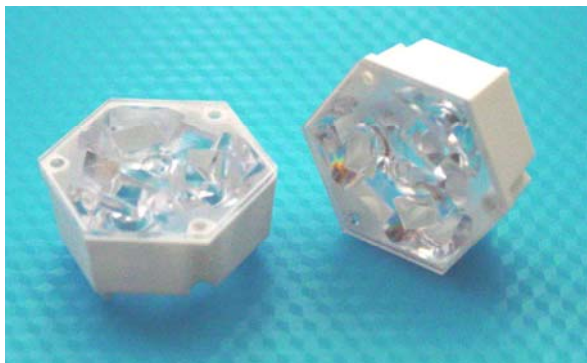


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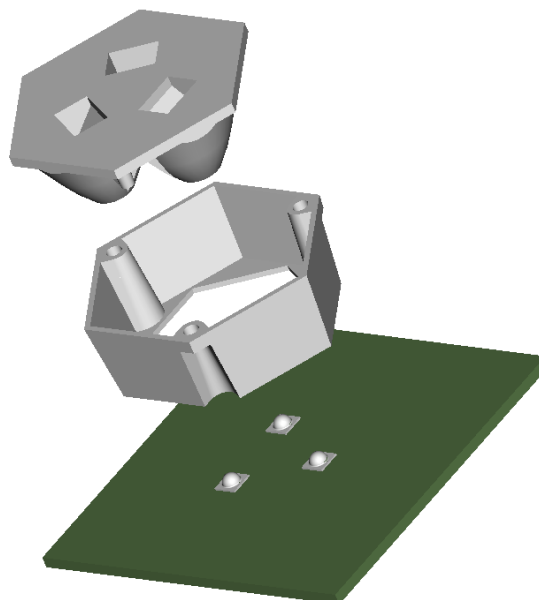
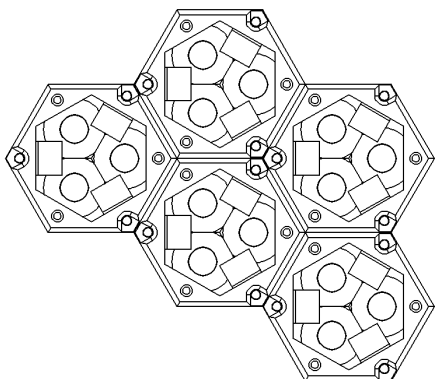
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Narrow Angle Colour Mixer Assembly for Cree XP-E LED - Part No. 181



- Designed to operate with Cree XP-E High Power LEDs
- High collection efficiency and narrow angle beam output
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics “Modular LED Optics”® range

- Excellent colour mixing performance with single colour LED's even over short distances
- Narrow angle basic beam angle which can be converted to wider beam angles or elliptical profiles with POL converter optics and filters
- Can also be used with White LED's to improve bin mixing and reduce colour temperature variations
- POL's novel hexagonal design allows the optics to be clustered together to make larger narrow angle colour mixing arrays



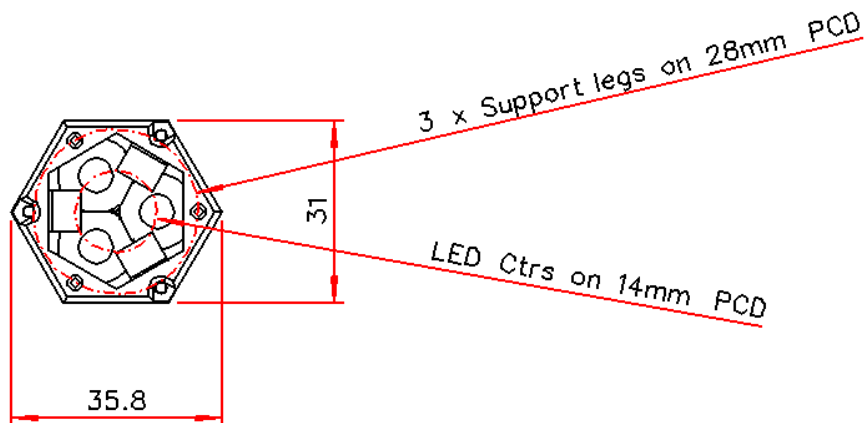


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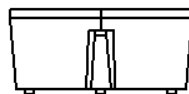
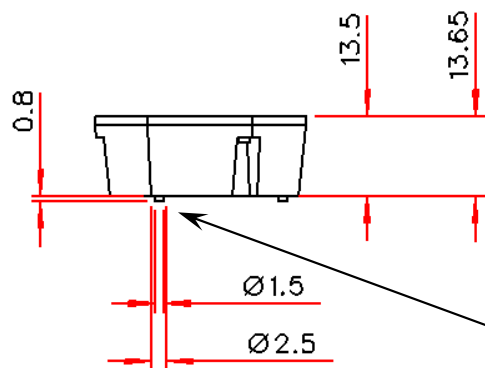
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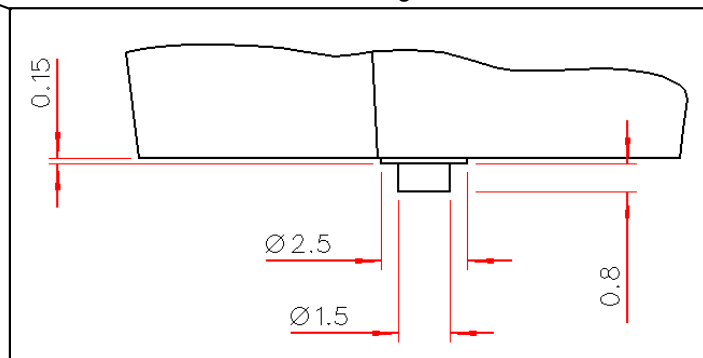
Narrow Angle Colour Mixer Assembly for Cree XP-E LED - Part No. 181



Typical dimensional tolerances
to +/-0.2mm



Part view of leg detail





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Narrow Angle Colour Mixer Assembly for Cree XP-E LED - Part No. 181



Red



Green



Blue



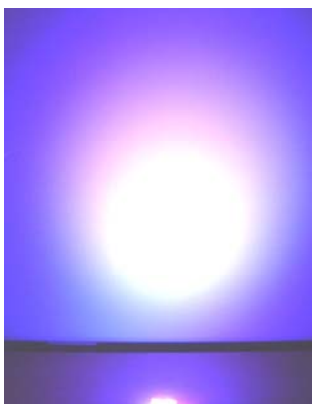
Red/Blue



Green/Blue



Red/Green



Red/Green/Blue

- Excellent colour mixing performance with single colour LED's even over short distances
- Narrow angle basic beam angle which can be converted to wider beam angles or elliptical profiles with POL converter optics and filters
- Can also be used with White LED's to improve bin mixing and reduce colour temperature variations

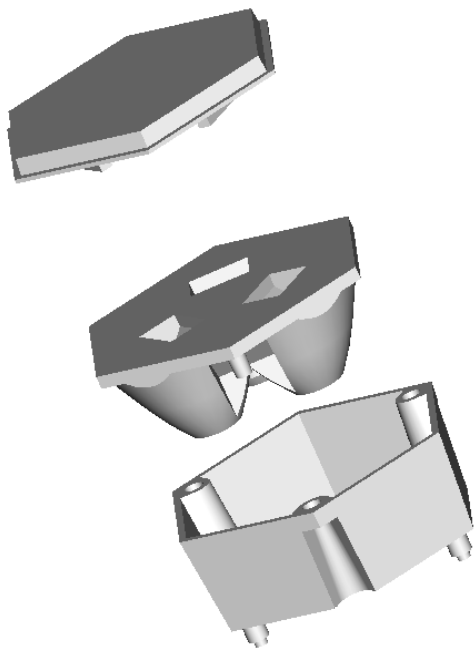


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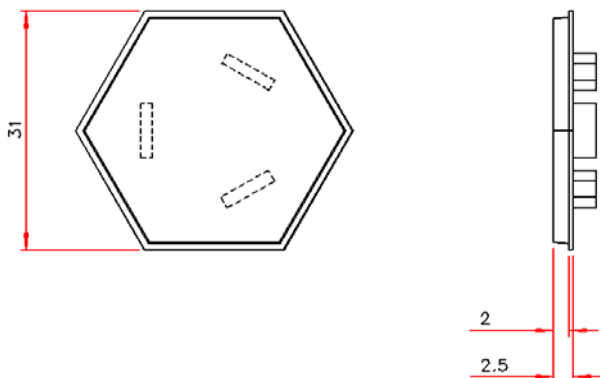
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Converter Optics for Narrow Angle LED Colour Mixer Assembly



- Beam Converter Optics simply interference push fit onto the front of the 181 - Colour Mixer Optic.
- Precision moulded in optical grade PMMA acrylic for improved scratch resistance on the outside of the assembly.
- The Beam Converter Optics fit within the area of the 181- Colour Mixer Optic so the assemblies can still be arranged in close packed arrays.
- Flanged edge of the Beam Converter Optics allows bezels and cover plates to be located to the optical assembly for aesthetic product finishing.
- Part of the Polymer Optics "Modular LED Optics"® range



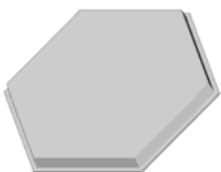


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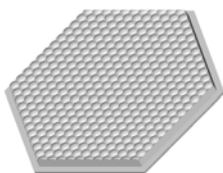
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Converter Optics for Narrow Angle LED Colour Mixer Assembly

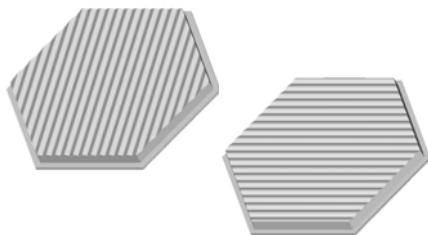


Plain Filter Holder - 160

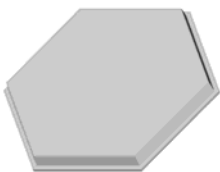
- 160 - Plain Filter Holder can be used with Luminitt Light Shaping Diffuser films to produce a wide range of beam profiles, available from POL or direct from www.luminittco.com.
- Other custom beam angles can be produced cost effectively from POL's modular production tooling. Please enquire for details



25 Deg Diffuser - 161



6 x 25 Deg Line Diffusers – 162 & 162B



Soft Beam Diffuser - 163



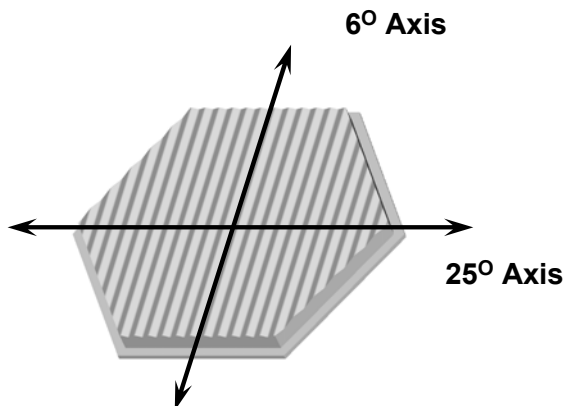


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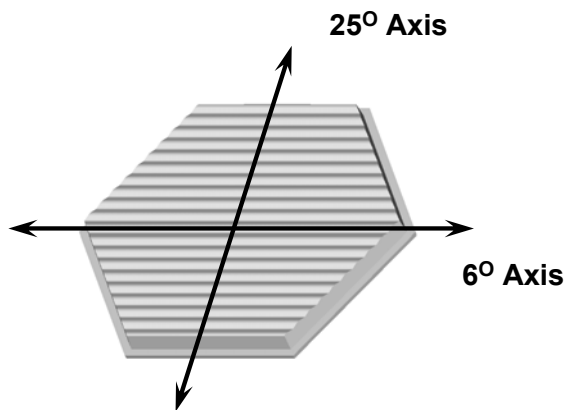
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Converter Optics for Narrow Angle LED Colour Mixer Assembly



6 x 25 Deg Line Diffusers – 162



6 x 25 Deg Line Diffusers – 162B

6 x 25 Deg Line Diffusers is available in two versions, the 162 and the 162B

These diffusers have the same optical function, but allow the beam to be spread in either orthogonal direction.

The 162 version can be used where multiple rows of optics are used and a close packed narrow array is required, along the axis of the linear beam output.

The 162B version can be used where single row linear fittings are required with the optics close packed together with the hexagonal flats placed side by side.

These 6 x 25 Deg Line Diffusers can also be mixed in optical arrays to produce other overall beam effects.



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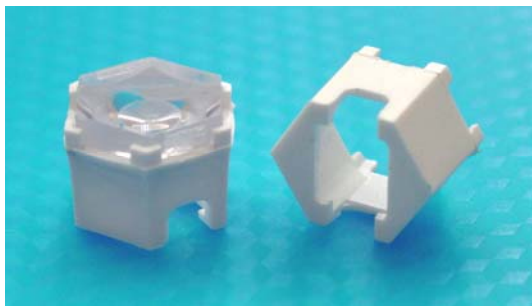
6 Degree XR-E Collimator Lens - Part No. 170



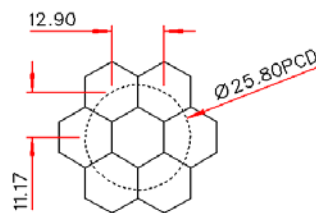
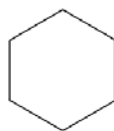
- Specifically designed for Cree XR-E and XR-C High Power LEDs
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range

Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

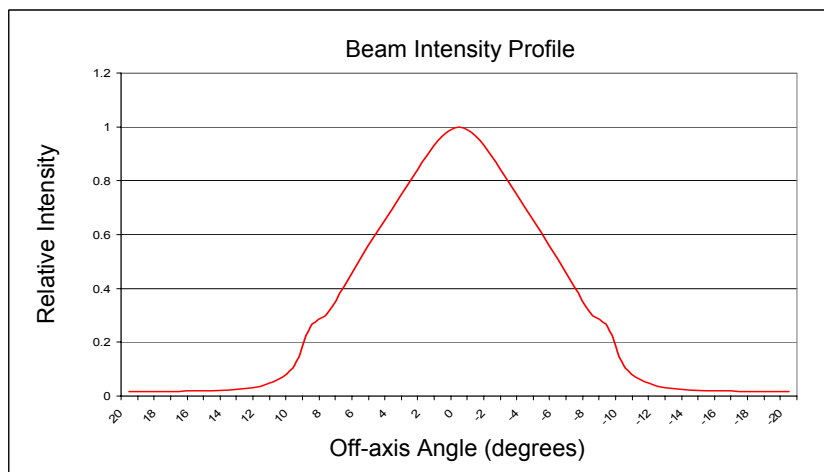
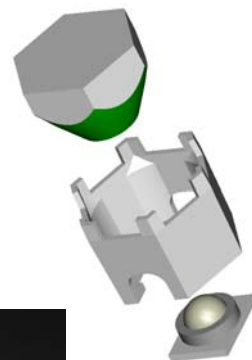
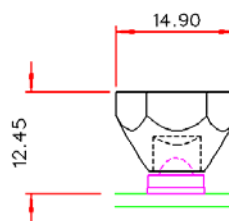
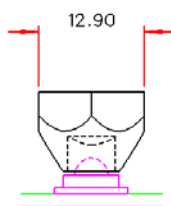
Supplied with Holder (Part No. 147) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



Typical dimensional tolerances to $\pm 0.2\text{mm}$



NESTED COMPONENTS ON 25,8MM PCD



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6 Degree Diffuse XR-E Collimator Lens - Part No. 186

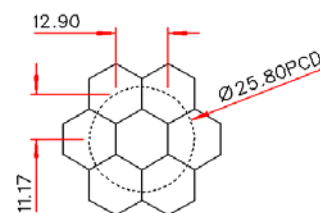
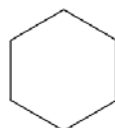


- Specifically designed for Cree XR-E and XR-C High Power LEDs
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range

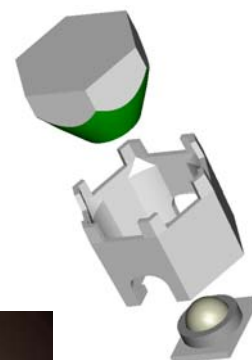
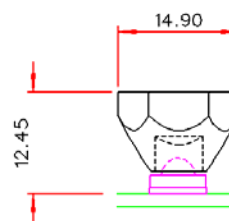
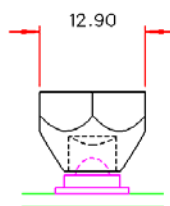
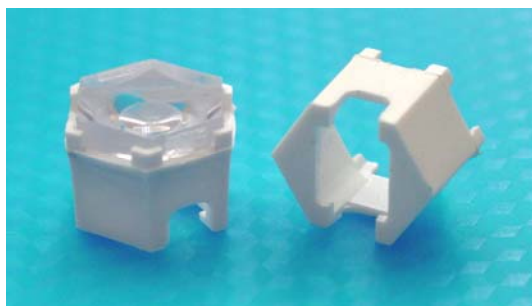
Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 147) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment

Typical dimensional tolerances to $\pm 0.2\text{mm}$



NESTED COMPONENTS ON 25,8MM PCD



The latest Cree XR-E die technology, in some applications, produces a slightly square beam profile. This is due to the precise optical handling characteristics of the POL LED optics range.



To remove this potential issue, POL have introduced the new 186 optic which diffuses the square die form of the LED into a more uniform round beam with minimal increase in the collimation divergence angle

The rest of the POL range of LED optics which provide wider angles, beam concentration or other beam profile functions all provide similar beam averaging within the optic itself.



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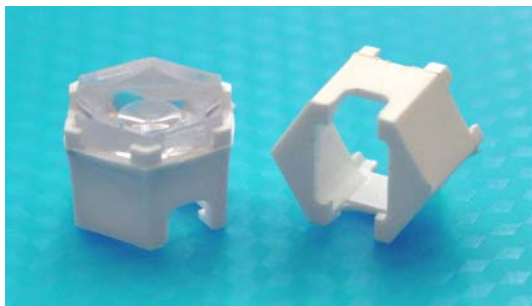
25 Degree XR-E Collimator Lens - Part No. 171



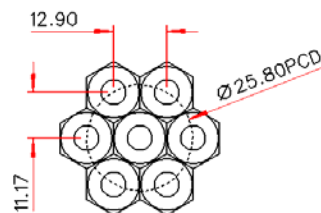
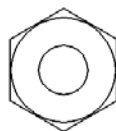
- Specifically designed for Cree XR-E and XR-C High Power LEDs
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range

Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

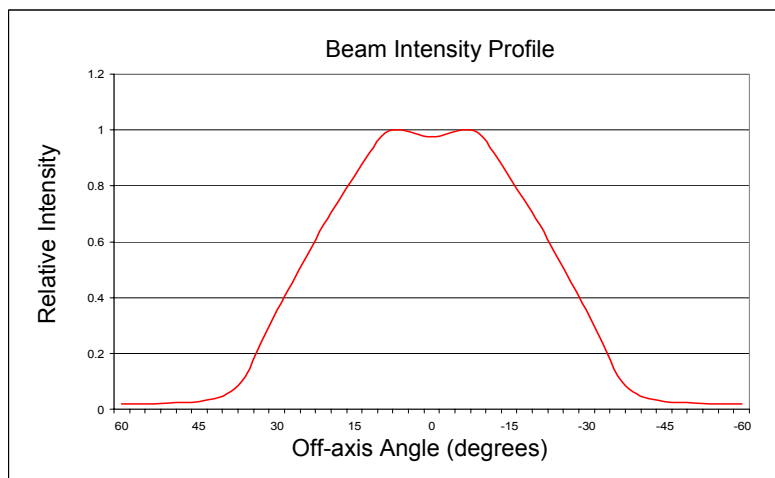
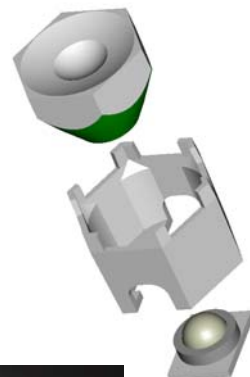
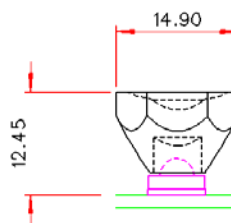
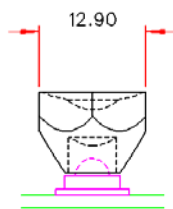
Supplied with Holder (Part No. 147) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



Typical dimensional tolerances
to +/-0.2mm



NESTED COMPONENTS ON 25,8MM PCD



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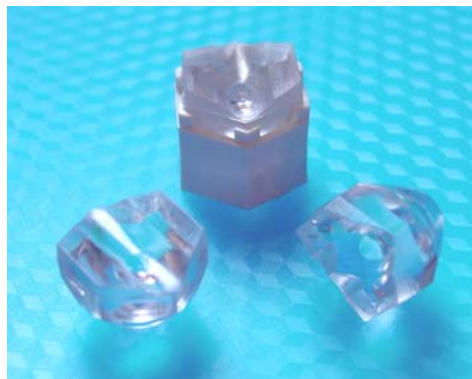


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6x25 Degree XR-E Line Lens - Part No. 172

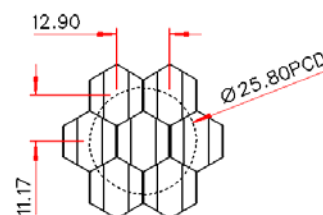
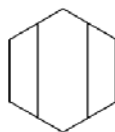


- Specifically designed for Cree XR-E and XR-C High Power LEDs
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range

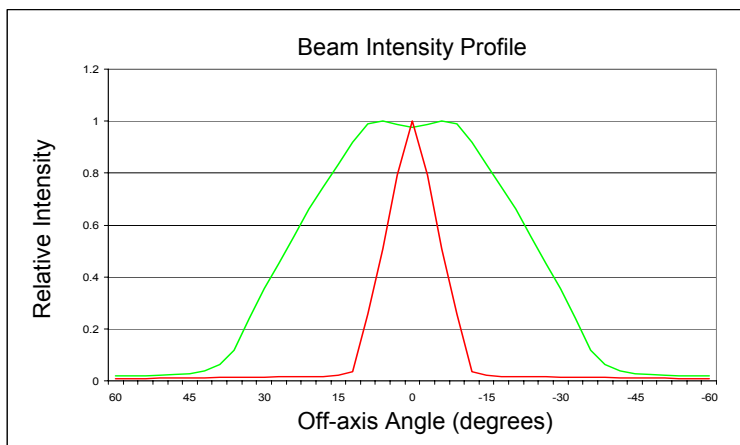
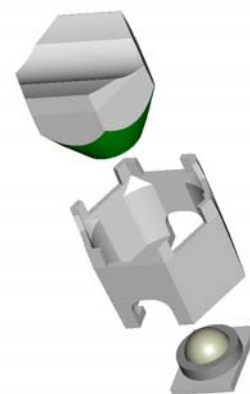
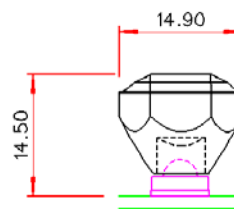
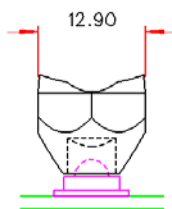
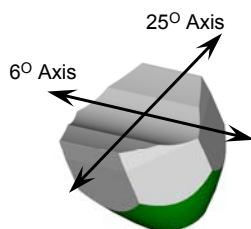
Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 147) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment

Typical dimensional tolerances to $\pm 0.2\text{mm}$



NESTED COMPONENTS ON 25,8MM PCD



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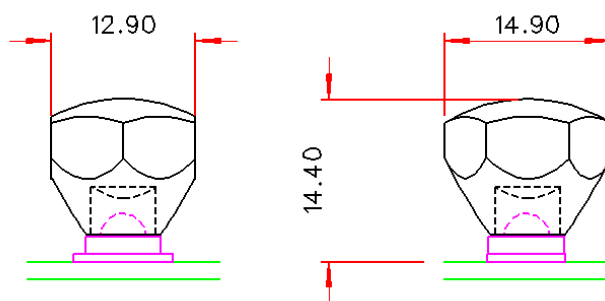
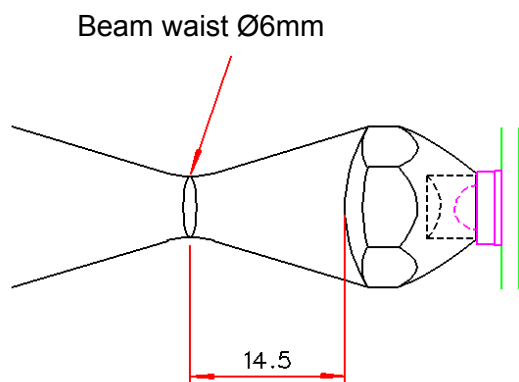
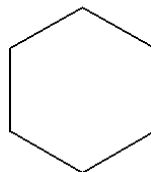
Single Cell XR-E Concentrator Lens - Part No. 173



- Specifically designed for Cree XR-E and XR-C High Power LEDs
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range

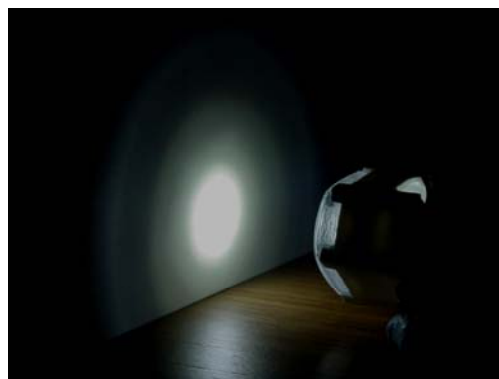
Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 147) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



Typical Applications:

- Beam insertion into optical fibre bundles
- Beam insertion into edge of lightguides
- High intensity illumination of small objects for inspection and microscopy





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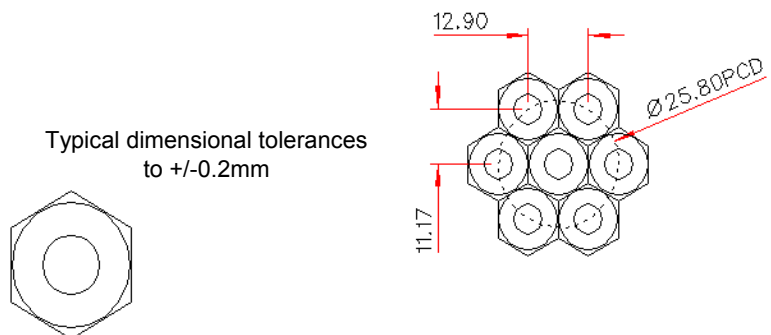
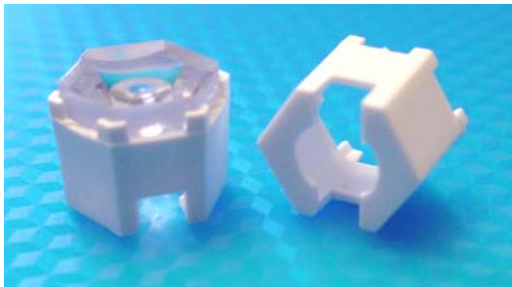
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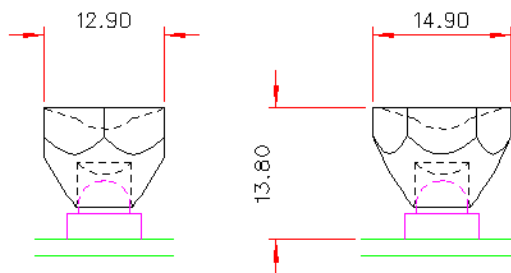
15 Degree XR-E Collimator Lens - Part No. 198



- Specifically designed for Cree XR-E and XR-C High Power LEDs
- High light collection efficiency of >85%
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics “Modular LED Optics”® range



Typical dimensional tolerances
to +/-0.2mm



Polymer Optics “Modular LED Optics”® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 147) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment

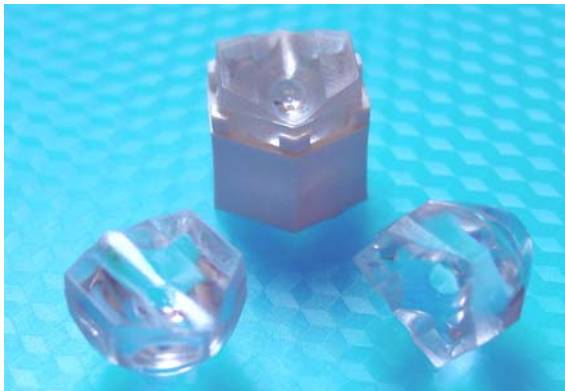


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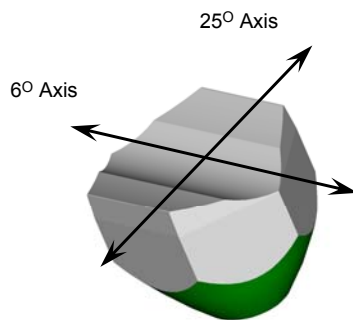
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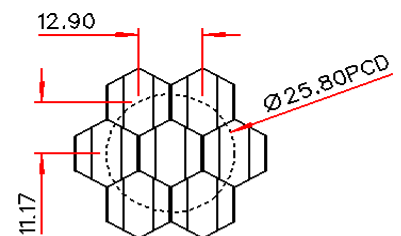
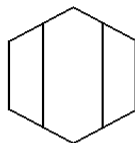
Diffuse 6x25 Degree XR-E Collimator Lens - Part No. 218



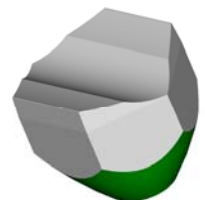
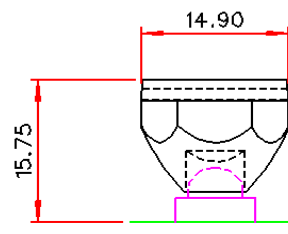
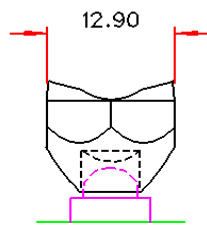
- Specifically designed for Cree XR-E and XR-C High Power LEDs
- High light collection efficiency of >85%
- Diffuse output surface for improved beam uniformity
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics "Modular LED Optics"® range



Typical dimensional tolerances
to +/-0.2mm



NESTED COMPONENTS ON 25,8MM PCD



Polymer Optics "Modular LED Optics"® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 147) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment



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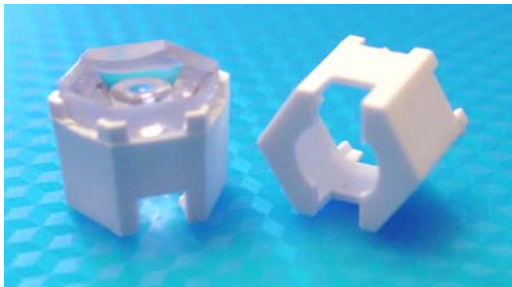
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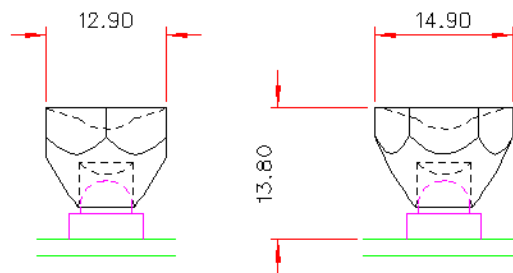
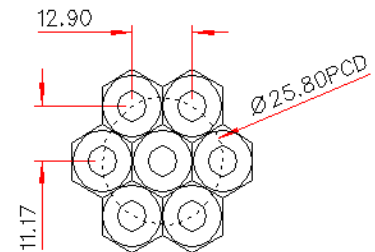
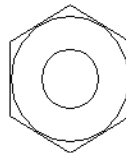
Diffuse 25 Degree XR-E Collimator Lens - Part No. 219



- Specifically designed for Cree XR-E and XR-C High Power LEDs
- High light collection efficiency of >85%
- Diffuse output surface for improved beam uniformity
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics “Modular LED Optics”® range



Typical dimensional tolerances
to +/-0.2mm



Polymer Optics “Modular LED Optics”® design, based on a hexagonal format, allows maximum packing density and assembly flexibility

Supplied with Holder (Part No. 147) to mount optics directly on to PCB's. Holder locates on LED package to ensure correct alignment

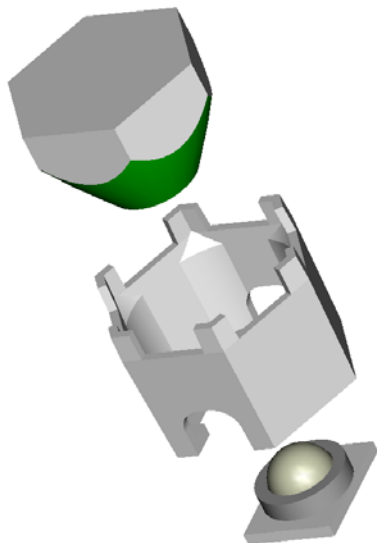


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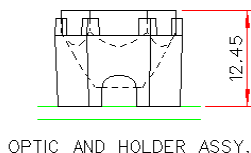
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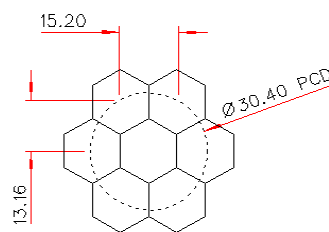
Cree XLamp LED Lens Holder - Part No. 147



- Designed for use with Polymer Optics “Modular LED Optics”[®] and custom Polymer Optics designs
- Designed to operate with Cree XR-E High Power LEDs
- Simply mounts onto PCB and self-aligns to LED
- Precision moulded in optical grade Polycarbonate for thermal stability and system durability
- Part of the Polymer Optics “Modular LED Optics”[®] range

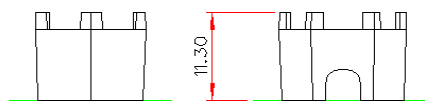
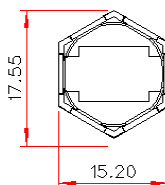


OPTIC AND HOLDER ASSY.



NESTED COMPONENTS ON 30.4MM PCD

Typical dimensional tolerances
to +/-0.2mm



Polymer Optics “Modular LED Optics”[®] design, based on a hexagonal format, allows maximum packing density and assembly flexibility

