

High Performance Diffusers

For LED and Fluorescent Luminaires



Infinite Possibilities Through Microstructures

Bright View Technologies' high performance diffusers are based on a proprietary technology platform that combines advanced microstructures with versatile substrate options and form factors. Bright View diffusers provide industry-leading performance in terms of angle control, efficiency, source hiding, and aesthetics.

Efficiency

Bright View diffusers enable high efficiency extraction of light from a luminaire without sacrificing performance. Transmission well in excess of 90% is typical, and luminaire dependent efficiency can be even higher.



Bulb Hiding & Homogenization

Bright View diffusers offer outstanding hiding of LED and fluorescent light sources, with excellent color mixing. Bright View diffusers solve the most difficult LED-hiding problems while maintaining industry-leading efficiency.



Light Management

Bright View provides a full range of diffusion strengths (i.e. beam angles) for management of luminaire light distributions and glare control. This includes flat-field ("batwing"), symmetric, asymmetric, and elliptical light distributions.



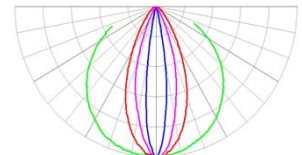
Narrow Mixing

Standard

Bilateral (flat-field)

Elliptical

Angle Bend



Wide range of available angles

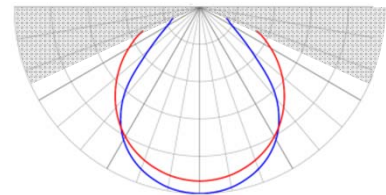
Aesthetics

Bright View P-Series patterned diffusers offer groundbreaking aesthetics without sacrificing exceptional light management performance and provide limitless customized solutions for luminaire designers.



New Glare Control Diffusers

Bright View Technologies announces patent-pending glare control diffusers that combine strong suppression of light above 65° from vertical with a smooth cutoff and an unprecedented level of diffusion. By combining glare control, diffusion, high efficiency, suppressed color fringing, and aesthetics, the new Bright View G-Series Glare Control diffusers offer unique advantages for high-performance luminaires.



Product Overview

Bright View High Performance Diffusers



Infinite Possibilities Through Microstructures

Products

Product Line	Description	Diffuser Strength <i>(higher numbers are more diffusive)</i>	Efficiency in typical luminaire	Comment
C-Series	General-purpose (symmetric) diffusers	15 - 85	87 - 96%	General purpose for smoothing, lamp hiding, and color mixing on downlights, troffers, linear, specialty
NEW E-Series	Elliptical diffusers	60 x 10 60 x 20	91 - 95%	Spreads light elliptically. Mixes lines of LEDs, and homogenizes fluorescent lamps. Also excellent for wall wash, cove, linear, specialty
NEW G-Series	Glare control	65° cutoff	89 - 93%	Suppresses light above 65 degrees to reduce glare
NEW M-Series	Narrow-angle diffusers	5 - 15	91 - 95%	Beam Mixing for narrow PAR, spot, flood, and downlights
A-Series	Angle bending	20 x 60	88 - 92%	Up to 20 degrees bend with crosswise spreading for wall wash, cove, specialty
P-Series	Patterned diffusers	Patterns may be combined with C-Series, E-Series, G-Series, etc. to create a unique aesthetic look while maintaining optical performance of the base diffuser		

Bright View Technologies maintains a pipeline of new product offerings and provides custom design services upon request

Material and Thickness Options

Bright View diffusers are offered on a variety of materials and thicknesses. Unlike volumetric (hazy plastic) diffusers, Bright View diffusers maintain their high performance regardless of material or thickness.

Material		Std. Thickness		Thermal Stability	UV Resistance	Description
		Inch	mm			
Film	PET	0.007	0.175	80°C	N/A	Excellent for indoor LED applications
	UV-PET	0.005	0.125	80°C	Excellent	UV resistant for LED or Fluorescent
	PMMA (Acrylic)	0.010	0.250	70°C (fixtured)	Excellent	UV resistant for LED or Fluorescent
NEW Semi-rigid	Polycarbonate	0.030	0.765	80°C	N/A	Semi-rigid. Low cost solution for downlights, panels, etc. Formable for 2x2 and 2x4 troffers
Custom		A wide variety of custom materials are available upon request				

Other material substrates such as rigid panels or flame retardant may be available upon request

Applications Engineering

Bright View is an agile company with a commitment to rapid prototyping and fast turnaround on standard or custom parts. Application engineers are available to help select the right diffuser solution including material choice, optical performance, environmental requirements, and aesthetics to enable optimum performance and appearance for luminaire designers. Please contact sales@brightviewtech.com for information

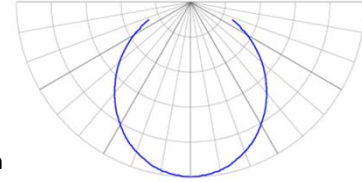
Optical Data

Bright View High Performance Diffusers



Infinite Possibilities Through Microstructures

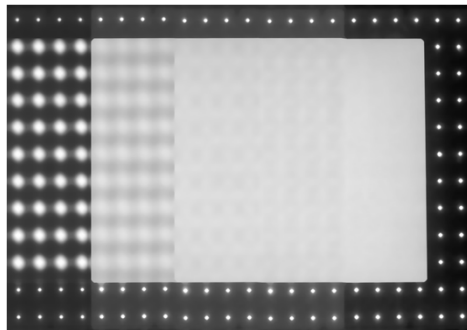
C-Series *General purpose symmetric diffusers for lamp hiding and angle management*



C-Series diffusers efficiently hide lamps and provide smooth illumination in both LED and fluorescent applications. They provide excellent depixelation and color mixing. An applications engineer will be happy to help select the correct product for your application. Please contact sales@brightviewtech.com.

Higher Efficiency ↑
More Hiding ↓

	Hides lamps at distance of	Typical angle Downlight <i>(microstructure facing away from lamps)</i>	Typical angle Downlight <i>(microstructure facing toward lamps)</i>	ASTM D1003 Transmission	Efficiency in typical LED luminaire	Comments
C - HE15	1 : 4	92°	91°	> 92%	93 - 96 %	Highest efficiency, some lamp hiding
C - HE30	1 : 2.5	80°	90°	> 96%	90 - 95 %	Excellent efficiency, good lamp hiding
C - HE55	1 : 2	75°	106°	> 96%	89 - 93 %	High efficiency, increased lamp hiding
C - HE80	1 : 1.5	70°	115°	> 96%	88 - 92 %	High efficiency, excellent lamp hiding
C - HH80	1 : 1	77°	111°	> 88%	87 - 90 %	High-Hiding: strongest lamp hiding available



Usage Notes:

- Choose the highest-efficiency diffuser that meets your lamp-hiding goals
- C-Series diffusers are directional and are generally used with the microstructures facing away from the LEDs or lamps; please try both orientations
- Angles for “microstructure facing toward lamps” are listed in gray above because C-Series diffusers are not typically used in this orientation.
- Angles and efficiencies are typical; they vary greatly depending on luminaire design
- ASTM D1003 transmissions are provided for reference, and are listed in gray above. Although widely quoted in lighting, this measurement uses a collimated beam (atypical) and fails to account for recirculation of reflected light inside luminaires
- Bright View applications engineers can assist with product choices and help your design achieve peak performance

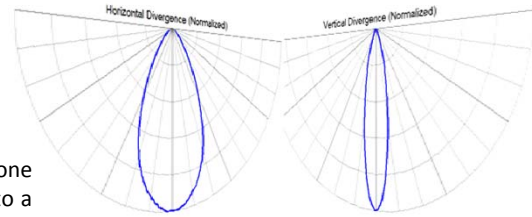
Optical Data

Bright View High Performance Diffusers



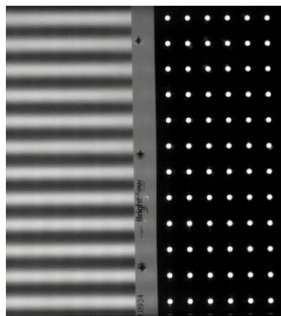
Infinite Possibilities Through Microstructures

E-Series Elliptical (asymmetric) diffusers

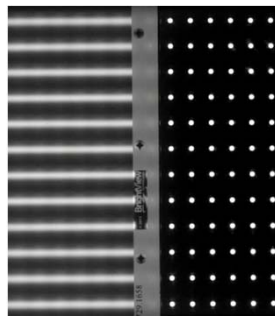


E-Series elliptical diffusers spread asymmetrically – more strongly in one direction than the other. They are used to diffuse a line of LEDs into a smooth line, or to blend adjacent fluorescent lamps. They are also used to provide optimum spreading in wall-wash and cove applications. Because diffusion is only applied along one direction, efficiency is even higher than C-Series diffusers. Bright View’s unique design causes less scalloping than competitive approaches, giving a smoother visual result.

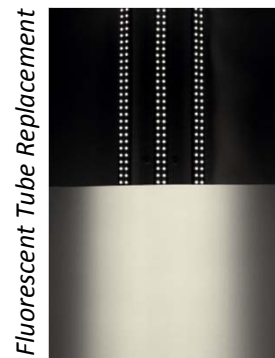
Product	Hides LEDs at distance of	Diffuser Strength <i>(higher numbers are more diffusive)</i>	ASTM D1003 Transmission	Efficiency in typical LED luminaire	Comments
E-6010	1 : 1	60 x 10	> 96 %	91 - 95 %	Mixes lines of LEDs, and homogenizes fluorescent lamps. Also excellent for wall wash, cove, specialty
E-6020	1 : 1	60 x 20	> 96 %	90 - 94 %	
<i>Others coming soon</i>					



60 x 20



60 x 10



Fluorescent Tube Replacement

Usage Notes:

- Choose the highest-efficiency diffuser that meets your lamp-hiding goals
- For lamp hiding as pictured above, E-Series diffusers are directional and are generally used with the microstructures facing *away from* the LEDs or lamps; please try both orientations
- For light spreading in wall-wash and cove applications, E-Series diffusers are generally used with the microstructures facing *toward* the LEDs or lamps; please try both orientations
- Angles and efficiencies are typical; they vary greatly depending on luminaire design
- Bright View applications engineers can assist with product choices and help your design achieve peak performance

Optical Data

Bright View High Performance Diffusers

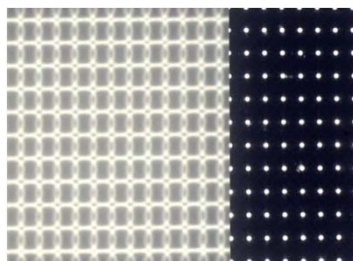
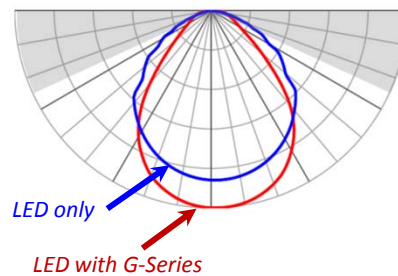
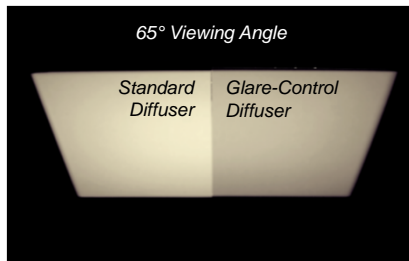


Infinite Possibilities Through Microstructures

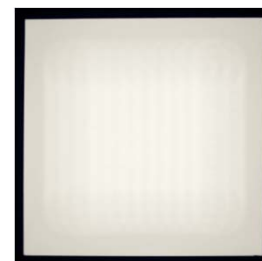
G-Series Glare Control Diffusers

G-Series diffusers suppress high-angle light above 65 degrees to reduce visual glare, while increasing on-axis light. This helps luminaires comply with IESNA RP1-04 and EN12464 glare specifications. This diffuser, unlike microlens sheets, has a soft cutoff with no color separation, increasing visual appeal and LED hiding ability.

Product	Hides LEDs at distance of	Typical Luminaire FWHM Angle	ASTM D1003 Transmission	Efficiency in typical LED luminaire	Comments
G-Series	see above	84°	> 96 %	89 – 93 %	Suppresses light above 65 degrees
Patterned G-Series	Please contact your sales representative				



G-Series diffusers close to LEDs will create pleasing concentric rings



G-Series diffusers farther from LEDs will create a smoother look.

Usage Notes:

- G-Series diffusers must be flat to achieve glare control; they can not be formed in curves around lamps
- G-Series diffusers must be used with the microstructure facing away from the LED or lamp
- At close spacing to LEDs they will create concentric rings; farther away they will create a smooth look
- Helps luminaires meet ANSI/IESNA RP-1-04 and EN12464 glare standards for office/indoor lighting
- Suppression of glare and efficiencies are typical; they vary greatly depending on luminaire design
- Bright View applications engineers can assist with product choices and help your design achieve peak performance

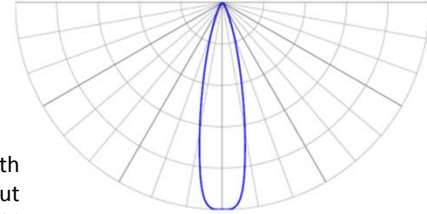
Optical Data

Bright View High Performance Diffusers



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M-Series *Beam-Mixing diffusers for narrow angle applications*

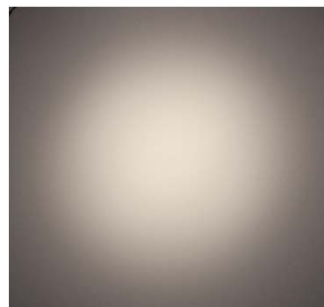


M-Series diffusers are used in spot and narrow flood lighting to smooth beam artifacts caused by parabolic or TIR lens collimators without significant broadening. Their unique design provides superior far-field smoothing and color mixing with high on-axis brightness. Unlike traditional diffusers, there is minimal decrease in central intensity, and minimal increase in off-task "field light."

Product	Typical Transmission <i>(narrow collimated light)</i>	Use for lights with angles in the range of	Comments
<i>Coming soon</i>		8° – 20°	Provides smooth spot on work surface with minimal widening and minimal brightness penalty.
M-PR10	91 – 95 %	15° – 30°	
<i>Coming soon</i>		25° – 45°	



Spot From
Collimated Light
(no diffuser)



Collimated Light with
M-Series Mixing Diffuser



Usage Notes:

- M-Series diffusers may be used in either orientation. Bright View recommends using the microstructures facing toward the LEDs or lamps
- Choose the minimum-strength M-Series diffuser that provides the needed smoothing
- Bright View applications engineers can assist with product choices and help your design achieve peak performance

Optical Data

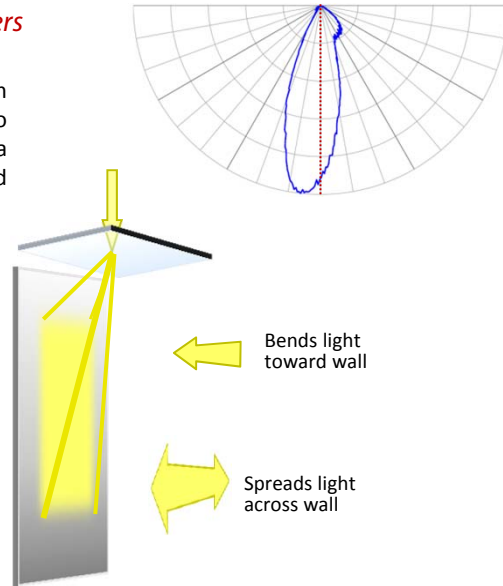
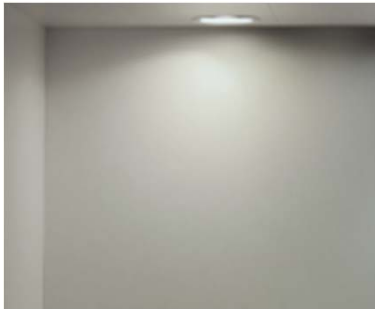
Bright View High Performance Diffusers



Infinite Possibilities Through Microstructures

A-Series Angle Bending (Direction Turning) Diffusers

A-Series diffusers provide an elegant solution for wall-wash, sign illumination, and specialty applications, providing an angle bend to direct the light toward a wall or surface, combined with a simultaneous cross-wall diffusion, to wash out scalloping and provide uniformity.



Usage Notes:

- A-Series diffusers are generally used with the microstructures facing *toward* the LEDs or lamps
- They have highest performance when used with collimated or narrow (up to 30 degrees) input beams, such as an LED with TIR lens or parabolic reflector
- The diffuser may be tilted relative to the input beam to fine tune the angle and light profile
- Other angles and spreads are available on a custom basis
- Bright View applications engineers can assist with product choices and help your design achieve peak performance

Optical Data

Bright View High Performance Diffusers

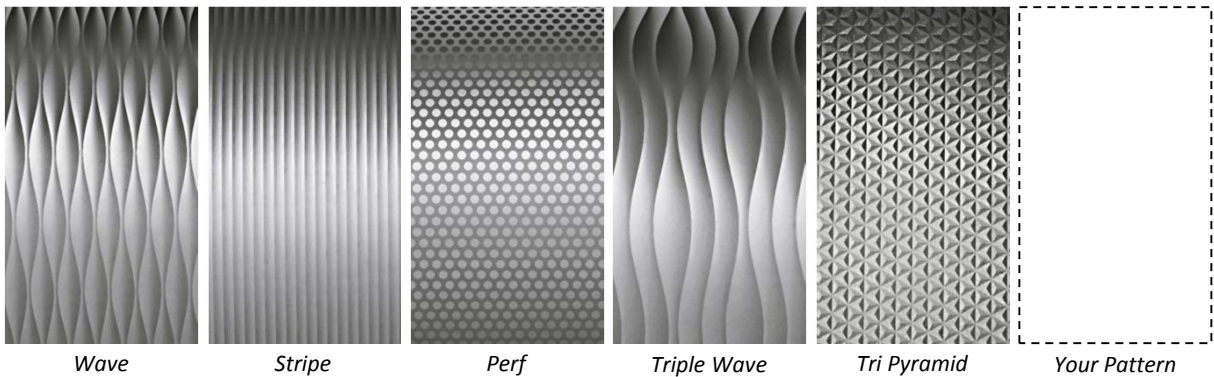


Infinite Possibilities Through Microstructures

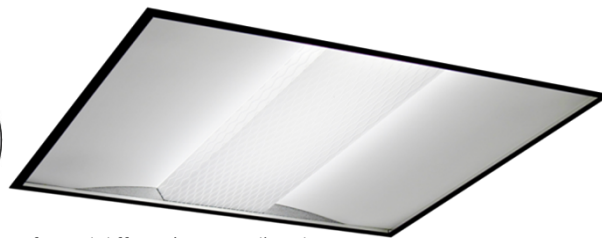
P-Series Patterned diffusers

P-Series diffusers offer unprecedented visual and aesthetic appeal with the same high performance as other Bright View products. Patterns can be applied to most Bright View products including general-purpose diffusers, ellipticals, anti-glare diffusers, and bilaterals. They are frequently used in architectural, office, hospitality, and decorative applications. Numerous patterns are in stock, plus quick turn-around of custom, unique patterns is available upon request.

Stock Patterns



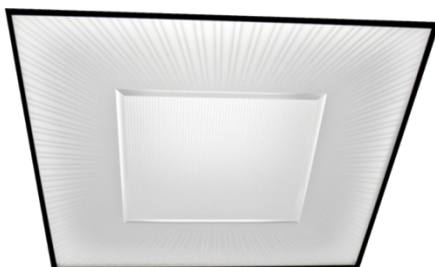
Custom Patterns



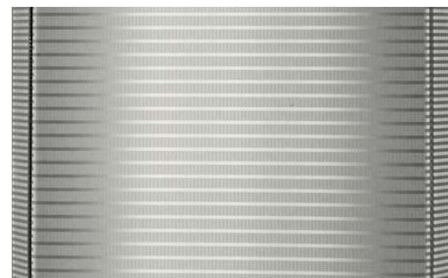
Single-piece formed diffuser (semi-rigid) with patterned center and gradient-diffusion edges



Bonsai sconce



Single diffuser with multiple patterned zones



Custom striped diffuser

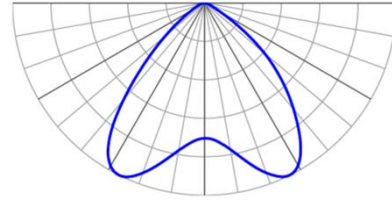
Optical Data

Bright View High Performance Diffusers



Infinite Possibilities Through Microstructures

B-Series (coming soon) Bilateral Diffusers



Bright View Bilateral diffusers provide a “batwing” distribution to help luminaires achieve a flat-field beam profile, uniformly illuminating a floor or work surface without a central hot-spot.

Product	Function	Bilateral flat-field direction	Comments
<i>Coming soon</i>	Bilateral for uncollimated linears, including recessed / troffers	Flat-field in the cross-light direction	Provide flat-field illumination on floor or work surface with no central hot-spot
<i>Coming soon</i>	Bilateral for parabolic-reflector collimated linears	Flat-field in the cross-light direction	
<i>Coming soon</i>	Bilateral for uncollimated downlights	Flat-field in all directions	
<i>Coming soon</i>	Bilateral for collimated downlights (PAR or TIR lens)	Flat-field in all directions	



Usage Notes:

- B-Series diffusers are generally used with the light entering the microstructured side
- B-Series diffusers combine the function of micro-linear prisms and diffusers in a single product
- There is a strong interaction between the bilateral diffuser and the design of the luminaire; a range of bilateral diffusers will be available to optimize performance
- Other angles and degrees of nadir suppression are available on a custom basis
- Bright View applications engineers can assist with product choices and help your design achieve peak performance

Materials Data

Bright View High Performance Diffusers



Infinite Possibilities Through Microstructures

Bright View diffusers are available on a variety of materials, including semi-rigid, to meet most lighting needs. Optical performance is nearly identical for the various materials.

	PET (standard)	UV PET	Acrylic (PMMA)	Polycarbonate (PC)
Usage	Excellent for indoor LED applications	UV resistant for LED or Fluorescent	UV resistant for LED or Fluorescent	Low cost solution for downlights, PAR, panels, etc.
Form	Film	Film	Film	Semi-rigid
Thickness	.007 in	.005 in	.010 in	.030 in
	.175 mm	.125 mm	.250 mm	.765 mm
Adhesion	ASTM D3359	ASTM D3359	Center	ASTM D3359
Bend Radius	0.5 in	0.5 in	0.5 in	1.5 in
UV Resistance color change UVA (2400KJ/m ²)	$\Delta a^* = -1.64$	$\Delta a^* = -0.46$	$\Delta a^* = -0.05$	$\Delta a^* = -4.04$
	$\Delta b^* = 4.14$	$\Delta b^* = 1.6$	$\Delta b^* = 0.4$	$\Delta b^* = 21.4$
Temperature	80°C	80°C	70°C (fixtured)	80°C
UL 94 Rating of substrate material *	VTM-2	VTM-2	Rating Not Available	V-2

* UL Rating is for substrate material as provided by substrate vendor. Yellow cards for these substrates are available. Bright View diffusers have not been tested or rated by UL. Bright View applies a thin (approx. 50 micron) coating to these substrate materials. Please call a Bright View applications engineer to discuss your material needs.

Additional materials, including flame-retardant, may be available on a custom basis.