



Painting with light

DecoFlood HID floodlight series DFS, specification architectural lighting solutions to bring your design ideas to life





Full range of products for almost any application

The DecoFlood family of products provides you with design tools to tackle any design application no matter how big or small. Five distinctive and fresh new housing designs that complement each other with family styling allowing you to mix and match products to address all of your project's requirements. A myriad of optical, lamp, lens, shielding and mounting options provide unparalleled flexibility and precision optical control.

Buildings, monuments, bridges, signage, interiors, and more are brought to life at night without compromise to daytime aesthetic as no other family of products can. Clean lines, simplistic styling and compact flat panel forms with a touch of elegance allows DecoFlood to complement the architecture, instead of dominating the visual experience.





Create dramatic designs with a wide variety of optical choices

Our greatest artists rely on having an infinite palette of colors and textures to bring their masterpieces to life. Instead of canvas and paint, you work with structures and light as your medium of choice.

With a full range of DecoFlood products, optics, and design accessories at your fingertips; you now have one of the widest range of precision lighting tools to design your very own masterpiece with light.

Choose from hundreds of lamp and reflector combinations, including CosmoPolis and MasterColor Elite, the latest in next generation HID lamp technology from Philips. Still want more flexibility? Utilize multiple shielding accessories, colored and spread lenses, and warming and cooling filters to help fine tune your design.

The DecoFlood family of luminaires is all about flexibility and simplicity. Use your tools to create dramatic visual effects or subtle and inspiring highlights. Ideally suited for both indoor and outdoor use, no application is too big or too small. Painting with light has never been easier.



DFS3 with beam softener & lens holder



CosmoPolis and MasterColor Elite technology available in DecoFlood

The innovative DecoFlood range is fitted with the latest in ceramic metal halide technology, including the Philips CosmoPolis and MasterColor Elite systems to help bring your designs to life while maximizing energy savings upwards of 50%.

CosmoPolis and MasterColor Elite systems combine ceramic metal halide lamps and an optimized electronic ballast to maximize performance and energy savings over the life of the entire system. Both systems offer improved efficiencies over traditional HID systems with lamp efficacies up to 120 lumens per watt, while providing superior lumen maintenance (90% lumen output @ 10K hours compared to 80% for traditional HID systems) and extended lamp life (up to 30K hours compared to 20K for traditional HID systems). Ceramic metal halide lamps also help to improve visibility and color accuracy with excellent coloring rendering characteristics. CosmoPolis lamps offer a Color Rendering Index (CRI) rating of 70, while MasterColor Elite lamps offer an amazing CRI of 90.

CosmoPolis Lamp Specifications

	Power (W)	Light output (Lm)	Luminous efficacy (Lm/W)	Operating position	Average lifetime (Hrs)	Color rendering (CRI)	Color temperature (K)
CPO-TW 60W/728 White	60	6,900	115	Horizontal ¹	30,000 ¹	70	2,800
CPO-TW 90W/728 White	90	10,450	116	Horizontal ¹	30,000 ¹	70	2,800
CPO-TW 140W/728 White	140	16,500	118	Horizontal ¹	30,000 ¹	70	2,800

¹. CosmoPolis lamps are designed for use in the horizontal burning position. Use in a vertical orientation is subject to a decrease in the lamp's rated lamp life (see current lamp specification sheets for details).

MasterColor Elite Lamp Specifications

	Power (W)	Light output (Lm)	Luminous efficacy (Lm/W)	Operating position	Average lifetime (Hrs)	Color rendering (CRI)	Color temperature (K)
CDM Elite39/T6/930	39	3,500	90	Universal	12,000	90	3,000
CDM Elite70/T6/930	70	7,300	104	Universal	12,000	90	3,000
CDM Elite100/T6/930	100	11,000	110	Universal	15,000	90	3,000
CDM Elite150/T6/930	150	15,000	100	Universal	12,000	90	3,000
CDM Elite MW 210W/T9/930	210	24,200	115	Universal	30,000	90	3,000
CDM Elite MW 210W/T9/942	210	23,100	110	Universal	30,000	90	4,200
CDM Elite MW 315W/T9/930	315	37,800	120	Universal	30,000	90	3,000
CDM Elite MW 315W/T9/942	315	36,200	115	Universal	30,000	90	4,200

Philips reserves the right to change specifications and dimensions without notice.
Lamp and electrical specifications / availability subject to change by manufacturer without notice.
Please refer to detailed lamp specification sheets for additional information and spec details.





Sculpting with light

Looking for that special effect to set your space apart from the rest? Infinite possibilities are at your fingertips with our gobo and framing projector cannon, available with our DFS3G. Creativity can go as far as your imagination will take you with precision image projection and light framing.



DFS3G



Basic framing shutters

Gobo and framing projector makes creating dramatic effects simple and cost effective

Projection of text, logos, patterns and other images has never been easier using standard or custom gobos. Avoid the cost of expensive theatrical luminaires and design your vision with our gobo and framing projector cannon.

Design your own gobo or choose from many standard, off-the-shelf, Size-A gobos to create a special visual effect. Ideally suited for atriums, courtyards, walkways, facades, or anywhere you want to grab some attention. Field adjustable shutters enable accurate geometric framing of monochrome or colored beams through the use of color filters. The gobo projector is designed specifically for the CDM-T 150W short arc tube T6 ceramic metal halide lamp for maximum performance and control, or standard 70W T6 ceramic metal halide lamp when less punch is required. Creating an eye-catching and dramatic visual experience has never been more simple and fun.





Yoke Mount



Swivel Mount

Do not be constrained by a single mounting configuration

Unlike most products, DecoFlood is available with a swivel tenon mount or yoke mount to provide you with the design flexibility you need.

Swivel Mount

DecoFlood maintains clean styling as the swivel is designed to mount to a 2" (2-3/8" O.D.) pipe tenon or rigid conduit. Power can be directly run into the luminaire, eliminating the need for exposed power cords and additional mounting hardware. Swivel mount includes an integral splice compartment for ease of wiring.

Yoke Mount

Some fixture locations just don't allow for tenon style mounting, or sometimes the need to mount a floodlight is an after thought. In those instances it can be easier to just bolt the product in place. Having a durable and flexible yoke mount system allows you to do just that, by mounting the product in place using 1/2" or 3/4" thru bolts.

Swivel mount allows for simple installation and cost savings

Saving time helps to save dollars when it comes to installing luminaires, our swivel mount allows you to do both.

Mounts Directly to any 2" Pipe Tenon

DecoFlood's swivel mount can easily mount to any 2" (2-3/8" O.D.) pipe tenon or rigid conduit mount that can feed power directly into the product. Simply place, orient and tighten two set screws to lock the fixture in place.

Integral Splice Compartment

Splice connections can be made inside the swivel's dedicated UL recognized splice compartment. Simply remove the access cover and make all of your wiring connections directly within the swivel. Thus eliminating the need for an additional junction box to help reduce installation time and save money.



Integral UL recognized splice compartment

Double wall housing design feature allows for IP65 rating

Philips Gardco products not only look good, they also take an innovative mechanical approach to ensure years of durable and reliable performance.

Outer Housing

The outer housing works as a barrier and watershed to protect the optical assembly from the intrusion of contaminants like bugs, dirt and water. It protects the separate IP compartment from direct exposure to the exterior elements compared to traditional products whose housing is the IP compartment, while allowing water to freely pass between housings. This protects the product from the harshest of outdoor elements, regardless of aiming or orientation.

Inner Housing & IP Compartment

By sealing to the internal housing, we create a separate dedicated internal IP compartment that is able to carry an IP65 rating. This innovative approach helps to ensure the performance and reliability of the DecoFlood range by not allowing external contaminants such as dirt to enter the optic chamber, in turn effecting photometric performance. A dedicated breather designed specifically for DecoFlood has been integrated to help prevent condensation from forming on the glass due to the changes in temperature and outside moisture.

Door & Lens Frame Assembly

The door and lens frame assembly is designed to allow water to shed between the gasketed lens and outer housing when aimed in the up position to help eliminate the pooling of water.





Tool-Less entry for easy lamp access, maintenance and installation

Time is money, especially when it comes to installation and routine maintenance. DecoFlood includes an innovative latching system for tool-less access to help save time and money.

Easy Tool-Less Access

The square and round DecoFlood products use a simple and easy finger latching system to access the lamp compartment. This feature is extremely helpful when products are installed in difficult to reach areas. The latch can be locked into place with a single fastener (including tamper proof) for additional security. The products are delivered without the fastener installed to help minimize installation time.



Shown with tamper proof screw

Adjustable optical system for added design flexibility

Simple and useful features like adjustable optics allow you to simply and easily fine tune a design after installation.

Single Turn Adjustment

The small and medium round DecoFlood products are available with fixed beam and adjustable beam optics. The adjustable optics allow you to easily adjust the beam in the field to create the desired effect. Simply turn the adjustment dial located on the side of the housing to change the lamp's focal position with the optic until the desired beam is achieved.





Adjust the lamp's axial position with a simple turn to shape the beam in the field to create the custom tuned result.

Some designs cannot be pinpointed using computer software and are better suited to be visually adjusted. Landscaping, monuments, and columns are just a few examples. Instead of swapping optics in the field, DecoFlood's DFS2 and DFS3 adjustable optics provide additional design flexibility. Easily add lensing and shielding options to fine tune even further to create the desired effect.





A simple design element for the eco-conscious designer with style

Integrated louvers within the DFS1 Mini-Spot not only look better, they simplify and reduce installation time and help to eliminate environmental waste.

Integrated Louver Systems

The DFS1 Mini-Spot luminaire is a dynamic designer flood with a small compact and clean design. The round louvers are integrated within the design of DFS1 versus external shielding. Not only does it help to maintain the simple lines of the product visually, but we are able to eliminate waste. Wasted time needed to install secondary shielding in the field. Wasted shipping costs of having to ship multiple items. And most importantly we eliminate, you guessed it...waste itself. Less cartons and packing materials equals less materials in our landfills.

Products designed for you that help to provide peace of mind

Product aiming is not always treated as an exact science, but now you can simply do better than just close enough.

Memory Aiming Ring*

In a lot of applications, you will have multiple products that require the exact same aiming angle. When dealing with precision optical systems, being just a little off can create some undesired effects. A lot of care and time is spent during initial installation to get everything just right.

If you have to loosen the aiming screw to do routine maintenance, you can easily forget how to re-aim the product. Since this is typically done during the day, visual re-aiming is just not practical. DecoFlood's memory aiming ring helps you to not forget. Simply loosen the outer screw and align the raised mark to align with an internal mark. Remember this internal mark and simply align the two marks when done to assure the aimed position is properly returned.



*Not available with DFS1 and DFS4/5 swivel mount products.





DFS1 Mini-Spot



DFS1-SV



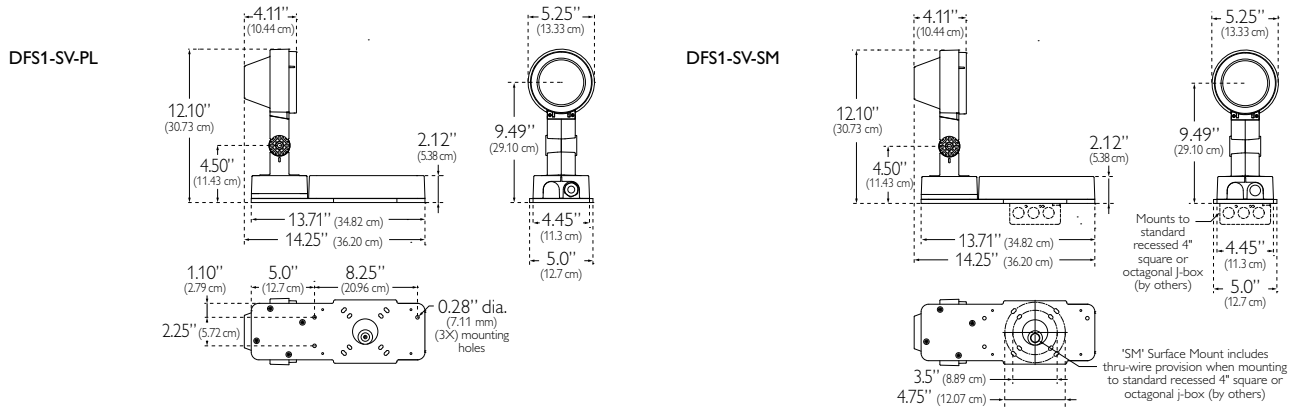
DFS1-SVRB



DFS1 Ordering Matrix



Dimensions



Ordering Information (lamps are not included and must be ordered separately, contact factory for assistance if required)

Series/Source-Wattage	Distribution	Ballast	Voltage	Style	Mounting	Options	Lens Options	Finish	Accessories
Mini MasterColor (CMH Pulse Start) DFS1P-22 DFS1P-39	NB MB WB	E	120	SV SVRB	PL SM	Internal Shielding HRL RL	Spread Lenses ¹ BSO HLBSP VLBSP Color Lenses ¹ SGFBL SGFGN SGFLB SGFMG SGFYE Color Temp Lenses ¹ WAF1 COF2 WAF2 COF3 WAF3 COF4	TWO TBK TDB TSA TWHT TGN TGR TPG RAL(*)	GS-DFS1

Series	Distribution	Ballast	Voltage	Style	Mounting	Options
Mini MasterColor <input type="checkbox"/> DFS1P-22 <input type="checkbox"/> DFS1P-39	<input type="checkbox"/> NB Narrow Beam <input type="checkbox"/> MB Medium Beam <input type="checkbox"/> WB Wide Beam <small>See optical data tables for specific beam and candela information.</small>	<input checked="" type="checkbox"/> E Electronic	<input checked="" type="checkbox"/> 120	<input type="checkbox"/> SV <input type="checkbox"/> SVRB	<input type="checkbox"/> PL Plate Mount (anchors by others) <input type="checkbox"/> SM Surface Mount (to 4" J-Box by others) (anchors by others)	Internal Shielding (pre-installed) <input type="checkbox"/> HRL Half Round Louver <input type="checkbox"/> RL Full Round Louver

Notes: 1. Lens options include lens holder that can hold up to two lenses. Lens holder comes pre-attached to the fixture. Photometry for the 'BSO' lens should be used for reference only. Lens performance can vary slightly due to manufacturing tolerances.

Lens Options (includes lens holder, holds up to two lenses)

<input type="checkbox"/> BSO Beam Softener	<input type="checkbox"/> WAF1 Warm n°1 Solgel Filter
<input type="checkbox"/> HLBSP Beam Spreader Horizontal	<input type="checkbox"/> WAF2 Warm n°2 Solgel Filter
<input type="checkbox"/> VLBSP Beam Spreader Vertical	<input type="checkbox"/> WAF3 Warm n°3 Solgel Filter
<input type="checkbox"/> SGFBL Solgel Blue Filter	<input type="checkbox"/> COF2 Cool n°2 Solgel Filter
<input type="checkbox"/> SGFLB Solgel Light Blue Filter	<input type="checkbox"/> COF3 Cool n°3 Solgel Filter
<input type="checkbox"/> SGFYE Solgel Yellow Filter	<input type="checkbox"/> COF4 Cool n°4 Solgel Filter
<input type="checkbox"/> SGFGN Solgel Green Filter	<small>Please refer to product specification sheets for details on Solgel Color Temp Lenses.</small>
<input type="checkbox"/> SGFMG Solgel Magenta Filter	

Finish

<input type="checkbox"/> TWO Two-Tone (dark, gray, silver)
<input type="checkbox"/> TBK Textured Black
<input type="checkbox"/> TDB Textured Dark Bronze
<input type="checkbox"/> TSA Textured Satin Aluminum
<input type="checkbox"/> TWHT Textured White
<input type="checkbox"/> TGN Textured Green
<input type="checkbox"/> TGR Textured Gray
<input type="checkbox"/> TPG Textured Philips Gray
<input type="checkbox"/> RAL(*) Specify Custom RAL color number

Accessories (must be ordered separately)

External Shielding (shielding is black unless otherwise specified)
<input type="checkbox"/> GS-DFS1 Glare Shield (visor)

DFS2 Small Round



DFS2-SV



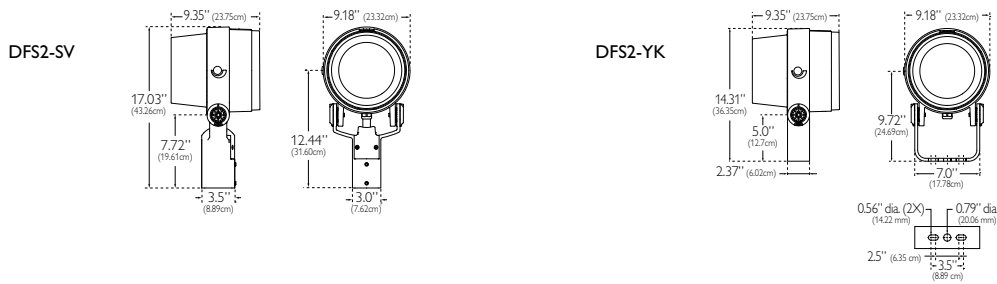
DFS2-YK



DFS2 Ordering Matrix



Dimensions



Ordering Information (lamps are not included and must be ordered separately, contact factory for assistance if required)

Series/Source-Wattage	Distribution	Ballast	Voltage	Style	Options	Lens Options	Finish	Accessories
<input type="checkbox"/> DFS2PT-39 <input type="checkbox"/> DFS2PT-70	Fixed Beam NBF WBF	E	120 208 240 277	SV YK	F1 F2 F3 BD	Spread Lenses ¹ BSO HLBSP VLBSP Color Lenses ¹ SGFBL SGFGN SGFLB SGFMG SGFYE Color Temp Lenses ¹ WAF1 COF2 WAF2 COF3 WAF3 COF4	TWO TBK TDB TSA TWHT TGN TGR RAL(*)	External Shielding BD-DFS2 GS-DFS2 CN-DFS2 HRL-DFS2 RL-DFS2 Swivel Mount WMB-16.5-(F) SMT-2-(F) JB-VMT-(F) SM-18-(F) PTA-2180-16.5-(F) PTA-2090-16.5-(F) PTA-3090-16.5-(F) PTA-4090-16.5-(F) Yoke Mount MF4-(F) BP-(F) JB-BP-(F)
MasterColor Elite (CMH Pulse Start) DFS2E-39 DFS2E-70 DFS2E-100	Adjustable Beam MBA WBA							

Series	Distribution	Ballast	Voltage	Style	Options
T6 Ceramic Metal Halide <input type="checkbox"/> DFS2PT-39 <input type="checkbox"/> DFS2PT-70	Fixed Beam <input type="checkbox"/> NBF Narrow Beam <input type="checkbox"/> WBF Wide Beam	<input checked="" type="checkbox"/> E Electronic	<input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277	<input type="checkbox"/> SV Swivel <input type="checkbox"/> YK Yoke <small>Standard cord length is 3 ft.</small>	<input type="checkbox"/> F1 Single Fuse (120/277/347V) <input type="checkbox"/> F2 Double Fuse (208/240V) <input type="checkbox"/> F3 Double Fuse (208/240V) (Canadian double pull) <input type="checkbox"/> BD Barn Doors Available February 1, 2012
MasterColor Elite <input type="checkbox"/> DFS2E-39 <input type="checkbox"/> DFS2E-70 <input type="checkbox"/> DFS2E-100	Adjustable Beam <input type="checkbox"/> MBA Medium Beam <input type="checkbox"/> WBA Wide Beam <small>See optical data tables for specific beam and candela information.</small>		<input type="checkbox"/> 347		

Notes: 1. Lens options include lens holder that can hold up to two lenses. Lens holder comes pre-attached to the fixture. Photometry for the 'BSO' lens should be used for reference only. Lens performance can vary slightly due to manufacturing tolerances.

Lens Options <small>(includes lens holder; holds up to two lenses)</small>		Finish	
Spread Lenses ¹ <input type="checkbox"/> BSO Beam Softener <input type="checkbox"/> HLBSP Beam Spreader Horizontal <input type="checkbox"/> VLBSP Beam Spreader Vertical	Color Temp Lenses ¹ <input type="checkbox"/> WAF1 Warm n°1 Solgel Filter <input type="checkbox"/> WAF2 Warm n°2 Solgel Filter <input type="checkbox"/> WAF3 Warm n°3 Solgel Filter <input type="checkbox"/> COF2 Cool n°2 Solgel Filter <input type="checkbox"/> COF3 Cool n°3 Solgel Filter <input type="checkbox"/> COF4 Cool n°4 Solgel Filter <small>Please refer to product specification sheets for details on Solgel Color Temp Lenses.</small>	<input type="checkbox"/> TWO Two-Tone (dark gray, silver) <input type="checkbox"/> TBK Textured Black <input type="checkbox"/> TDB Textured Dark Bronze <input type="checkbox"/> TSA Textured Satin Aluminum <input type="checkbox"/> TWHT Textured White <input type="checkbox"/> TGN Textured Green <input type="checkbox"/> TGR Textured Gray <input type="checkbox"/> TPG Textured Philips Gray <input type="checkbox"/> RAL(*) Specify Custom RAL color number	

Accessories <small>(must be ordered separately)</small>	
External Shielding Accessories <small>(black unless otherwise specified)</small> <input type="checkbox"/> BD-DFS2 Barn Doors <input type="checkbox"/> GS-DFS2 Glare Shield (visor) <input type="checkbox"/> CN-DFS2 Cannon (full snoot) <input type="checkbox"/> HRL-DFS2 Half Round Louver <input type="checkbox"/> RL-DFS2 Full Round Louver	Swivel Mount Accessories <input type="checkbox"/> WMB-16.5-(F) Wall Mounting Bracket <input type="checkbox"/> SMT-2-(F) Surface Mounted Tenon <input type="checkbox"/> JB-VMT-(F) Junction Box with SMT-2 <input type="checkbox"/> SM-18-(F) 18" Stanchion Mount <input type="checkbox"/> PTA-2180-16.5-(F) Pole Top Adaptor 2@180 <input type="checkbox"/> PTA-2090-16.5-(F) Pole Top Adaptor 2@90 <input type="checkbox"/> PTA-3090-16.5-(F) Pole Top Adaptor 3@90 <input type="checkbox"/> PTA-4090-16.5-(F) Pole Top Adaptor 4@90
Yoke Mount Accessories <input type="checkbox"/> MF4-(F) Slip Fitter (fits 2-3/8" O.D. tenon) <input type="checkbox"/> BP-(F) Surface Mount Base Plate <input type="checkbox"/> JB-BP-(F) Junction Box with BP <small>(F = specify finish)</small>	

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DFS3 Medium Round



DFS3-SV

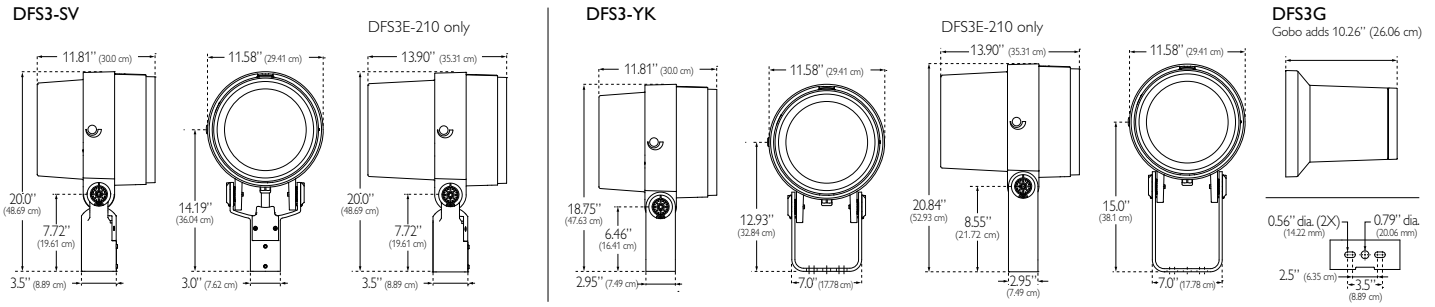


DFS3-YK

DFS3 Ordering Matrix



Dimensions



Ordering Information (lamps are not included and must be ordered separately, except for the DFS3G, contact factory for assistance if required)

Series/Source-Wattage	Distribution	Ballast	Voltage	Style	Options	Lens Options	Finish	Accessories	
T6 Ceramic Metal Halide (Pulse Start) DFS3PT-39 ^{1,7} DFS3PT-70 ¹ DFS3PT-150 ¹	Fixed Beam NBF MBF WBF1	E ² C ^{4,7}	120 ³ 208 ⁷ 240 ⁷	SV YK	F1 F2 F3	Spread Lenses ^{5,6} BSO HLBSP VLBSP	TWO TBK TDB TSA	External Shielding ⁵ BD-DFS3 GS-DFS3 CN-DFS3 HRL-DFS3 RL-DFS3	Swivel Mount WMB-16.5-(F) SMT-2-(F) JB-VMT-(F) SM-18-(F)
MasterColor Elite (CMH Pulse Start) DFS3E-100 ^{1,2} DFS3E-150 ^{1,2} DFS3E-210 ^{2,3}	WBF2 WBF3		277 347 ^{3,7} 480 ^{2,5}		External Shielding ⁵ BD	Color Lenses ^{5,6} SGFBL SGFGN SGFLB SGFMG SGFYE	TWHT TGN TGR TPG	PTA-2180-16.5-(F) PTA-2090-16.5-(F) PTA-3090-16.5-(F) PTA-4090-16.5-(F)	
Pulse Start Metal Halide DFS3P-70 DFS3P-100 DFS3P-150	Adjustable Beam MBA ¹ WBA ¹					Color Temp Lenses ^{5,6} WAF1 COF2 WAF2 COF3 WAF3 COF4	RAL(*)	Yoke Mount MF4-(F) BP-(F) JB-BP-(F)	
High Pressure Sodium DFS3S-70 ⁴ DFS3S-100 ⁴ DFS3S-150 ⁴	Gobo Projector NBG ⁵								
T6 CMH Gobo Projector DFS3G-70 ⁵ DFS3G-150 ⁵									

Series	Distribution	Ballast	Voltage	Style	Options
T6 Ceramic Metal Halide <input type="checkbox"/> DFS3PT-39 ^{1,7} <input type="checkbox"/> DFS3PT-70 ¹ <input type="checkbox"/> DFS3PT-150 ¹	Fixed Beam <input type="checkbox"/> NBF Narrow Beam <input type="checkbox"/> MBF Medium Beam <input type="checkbox"/> WBF1 Wide Beam 1 <input type="checkbox"/> WBF2 Wide Beam 2 <input type="checkbox"/> WBF3 Wide Beam 3	<input type="checkbox"/> E ² Electronic <input type="checkbox"/> C ^{4,7} Core & Coil	<input type="checkbox"/> 120 ³ <input type="checkbox"/> 208 ⁷ <input type="checkbox"/> 240 ⁷ <input type="checkbox"/> 277 <input type="checkbox"/> 347 ^{3,7} <input type="checkbox"/> 480 ^{2,3,7}	<input type="checkbox"/> SV Swivel <input type="checkbox"/> YK Yoke Standard cord length is 3 ft.	<input type="checkbox"/> F1 Single Fuse (120/277/347V) <input type="checkbox"/> F2 Double Fuse (208/240/480V) <input type="checkbox"/> F3 Double Fuse (208/240/480V) (Canadian double pull)
MasterColor Elite <input type="checkbox"/> DFS3E-100 ^{1,2} <input type="checkbox"/> DFS3E-150 ^{1,2} <input type="checkbox"/> DFS3E-210 ^{2,3}	Adjustable Beam <input type="checkbox"/> MBA ¹ Medium Beam <input type="checkbox"/> WBA ¹ Wide Beam				External Shielding ⁵ (pre-attached) <input type="checkbox"/> BD Barn Doors Available February 1, 2012.
Pulse Start Metal Halide <input type="checkbox"/> DFS3P-70 <input type="checkbox"/> DFS3P-100 <input type="checkbox"/> DFS3P-150	Gobo Projector <input type="checkbox"/> NBG ⁵ Narrow Beam Gobo				
High Pressure Sodium <input type="checkbox"/> DFS3S-70 ⁴ <input type="checkbox"/> DFS3S-100 ⁴ <input type="checkbox"/> DFS3S-150 ⁴	See optical data tables for specific beam and candela information.				
T6 CMH Gobo Projector <input type="checkbox"/> DFS3G-70 ⁵ <input type="checkbox"/> DFS3G-150 ⁵					

Accessories (must be ordered separately)

External Shielding Accessories⁵ (black unless otherwise specified)

- BD-DFS3** Barn Doors
- GS-DFS3** Glare Shield (visor)
- CN-DFS3** Cannon (full snout)
- HRL-DFS3** Half Round Louver
- RL-DFS3** Full Round Louver

Swivel Mount Accessories

- WMB-16.5-(F)** Wall Mounting Bracket
- SMT-2-(F)** Surface Mounted Tenon
- JB-VMT-(F)** Junction Box with SMT-2
- SM-18-(F)** 18" Stanchion Mount
- PTA-2180-16.5-(F)** Pole Top Adaptor 2@180
- PTA-2090-16.5-(F)** Pole Top Adaptor 2@90
- PTA-3090-16.5-(F)** Pole Top Adaptor 3@90
- PTA-4090-16.5-(F)** Pole Top Adaptor 4@90

Yoke Mount Accessories

- MF4-(F)** Slip Fitter (fits 2-3/8" O.D. tenon)
- BP-(F)** Surface Mount Base Plate
- JB-BP-(F)** Junction Box with BP (F = specify finish)

Lens Options (includes lens holder, holds up to two lenses)

Spread Lenses ^{5,6}	Color Temp Lenses ^{5,6}
<input type="checkbox"/> BSO Beam Softener	<input type="checkbox"/> WAF1 Warm n°1 Solgel Filter
<input type="checkbox"/> HLBSP Beam Spreader Horizontal	<input type="checkbox"/> WAF2 Warm n°2 Solgel Filter
<input type="checkbox"/> VLBSP Beam Spreader Vertical	<input type="checkbox"/> WAF3 Warm n°3 Solgel Filter
	<input type="checkbox"/> COF2 Cool n°2 Solgel Filter
	<input type="checkbox"/> COF3 Cool n°3 Solgel Filter
	<input type="checkbox"/> COF4 Cool n°4 Solgel Filter
<input type="checkbox"/> SGFBL Solgel Blue Filter	
<input type="checkbox"/> SGFLB Solgel Light Blue Filter	
<input type="checkbox"/> SGFYE Solgel Yellow Filter	
<input type="checkbox"/> SGFGN Solgel Green Filter	
<input type="checkbox"/> SGFMG Solgel Magenta Filter	

Finish

<input type="checkbox"/> TWO Two-Tone (dark gray, silver)
<input type="checkbox"/> TBK Textured Black
<input type="checkbox"/> TDB Textured Dark Bronze
<input type="checkbox"/> TSA Textured Satin Aluminum
<input type="checkbox"/> TWHT Textured White
<input type="checkbox"/> TGN Textured Green
<input type="checkbox"/> TGR Textured Gray
<input type="checkbox"/> TPG Textured Philips Gray
<input type="checkbox"/> RAL(*) Specify Custom RAL color number

Please refer to product specification sheets for details on Solgel Color Temp Lenses.

DFS4 Medium Square



DFS4-SV

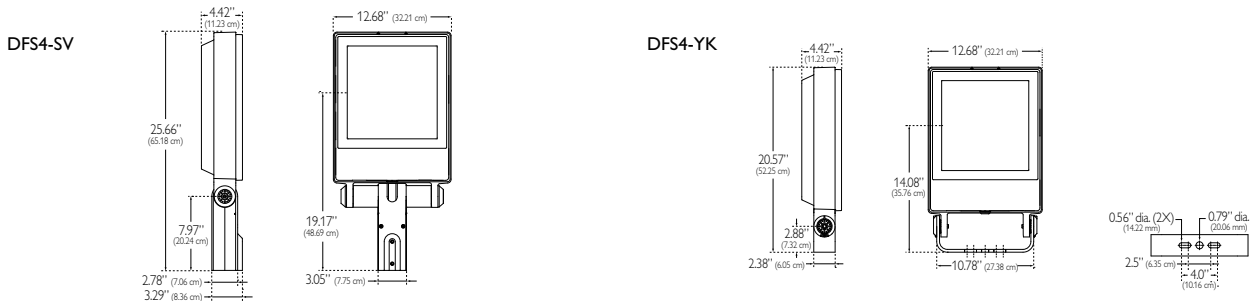


DFS4-YK

DFS4 Ordering Matrix



Dimensions



Ordering Information (lamps are not included and must be ordered separately, contact factory for assistance if required)

Series/Source-Wattage	Distribution	Ballast	Voltage	Style	Options	Lens Options	Finish	Accessories
T6 Ceramic Metal Halide (Pulse Start)						Spread Lenses ⁸		External Shielding
DFS4PT-39⁹	SP⁵	E¹	120²	SV	F1⁶	BSO	TWO	BD-DFS4 Swivel Mount
DFS4PT-70	NB	C^{4,9}	208⁹	YK	F2⁶	HLBSP	TBK	TS-DFS4 SMT-2-(F)
DFS4PT-150	MB		240⁹		F3⁶	VLBSP	TDB	4S-DFS4 JB-VMT-(F)
CosmoPolis (CMH Pulse Start)						Color Lenses ⁹		3S-DFS4 SM-18-(F)
DFS4C-60^{1,2,3,7}	WB		277		PCB¹	SGFBL SGFGN	TWHT	HL-DFS4 PTA-2180-16.5-(F)
DFS4C-90^{1,2,3,7}	A45		347⁹		CSR^{3,5,6}	SGFLB SGFMG	TGN	VL-DFS4 PTA-2090-16.5-(F)
DFS4C-140^{1,2,3,7}	A60		480^{1,2,9}		LQ^{3,5,6}	SGFYE	TGR	EC-DFS4 PTA-3090-16.5-(F)
MasterColor Elite (CMH Pulse Start)						Color Temp Lenses ⁸		PTA-4090-16.5-(F)
DFS4E-39^{1,2,3}					LQ1^{3,5,6}	WAF1 COF2	TPG	Yoke Mount
DFS4E-70^{1,2,3}					LS6⁷	WAF2 COF3	RAL(*)	MF4-(F)
DFS4E-100^{1,2,3}					LS7	WAF3 COF4		BP-(F)
DFS4E-150^{1,2,3}					LS10⁷			JB-BP-(F)
Pulse Start Metal Halide					External Shielding			
DFS4P-70					BD			
DFS4P-100								
DFS4P-150								
High Pressure Sodium								
DFS4S-70⁴								
DFS4S-100⁴								
DFS4S-150⁴								

Series Distribution Ballast Voltage Style Options

T6 Ceramic Metal Halide	<input type="checkbox"/> SP⁵ Spot Beam	<input type="checkbox"/> E¹ Electronic	<input type="checkbox"/> 120²	<input type="checkbox"/> SV Swivel	<input type="checkbox"/> F1⁶ Single Fuse (120/277/347V)
	<input type="checkbox"/> NB Narrow Beam	<input type="checkbox"/> C^{4,9} Core & Coil	<input type="checkbox"/> 208⁹	<input type="checkbox"/> YK Yoke	<input type="checkbox"/> F2⁶ Double Fuse (208/240/480V)
	<input type="checkbox"/> MB Medium Beam		<input type="checkbox"/> 240⁹		<input type="checkbox"/> F3⁶ Double Fuse (208/240/480V) (Canadian double pull)
	<input type="checkbox"/> WB Wide Beam		<input type="checkbox"/> 277		<input type="checkbox"/> PCB¹ Photocell Button (120-347V)
	<input type="checkbox"/> A45 Asymmetric 1		<input type="checkbox"/> 347⁹		<input type="checkbox"/> CSR^{3,5,6} Hot Quartz Restrike (no time delay)
	<input type="checkbox"/> A60 Asymmetric 2		<input type="checkbox"/> 480^{1,9}		<input type="checkbox"/> LQ^{3,5,6} Litematic Hot/Cold Quartz Restrike
CosmoPolis					<input type="checkbox"/> LQ1^{3,5,6} Litematic Hot/Cold Quartz Restrike (separately wired)
					<input type="checkbox"/> LS6⁷ LumiStep 6 Dimming (Cosmo only)
					<input type="checkbox"/> LS8⁷ LumiStep 8 Dimming (Cosmo only)
					<input type="checkbox"/> LS10⁷ LumiStep 10 Dimming (Cosmo only)
MasterColor Elite					External Shielding (pre-attached)
					<input type="checkbox"/> BD Barn Doors Available Q1 - 2012

Notes:
 1. CosmoPolis & MasterColor Elite lamps are only available with electronic ballast option 'E'. Electronic ballasts are available in 120-347V, not available in 480V. (See 90 & 140W CosmoPolis exception in note #2)
 PCB¹ is not available in 480V.
 2. 90 & 140W CosmoPolis not available in 120V (available in 208-347V only)
 3. Quartz restrike options ('CSR', 'LQ', 'LQ1') not available with Electronic Ballast ('E') option.
 4. High Pressure Sodium is only available with core & coil option 'C'. Core & coil ballasts available in 120-480V.
 5. 'SP' optics not available with any restrike options ('CSR', 'LQ', 'LQ1').
 6. All restrike options are 100W quartz max. and are not to exceed HID wattage.
 7. Fusing is not available with any restrike options ('CSR', 'LQ', 'LQ1').
 8. LumStep dimming is only available with CosmoPolis lamp options.
 9. Lens options include lens holder that can hold up to two lenses. Lens holder comes pre-attached to the fixture. Photometry for the BSO lens is for reference only. Performance can vary slightly due to manufacturing tolerances.
 9. 39 W T6 Ceramic Metal Halide not available in 208, 240, 347 or 480V with 'C' core & coil ballasts.

Lens Options (includes lens holder, holds up to two lenses)

Spread Lenses ⁸	Color Temp Lenses ⁸	
<input type="checkbox"/> BSO Beam Softener	<input type="checkbox"/> WAF1 Warm n°1 Solgel Filter	
<input type="checkbox"/> HLBSP Beam Spreader Horizontal	<input type="checkbox"/> WAF2 Warm n°2 Solgel Filter	
<input type="checkbox"/> VLBSP Beam Spreader Vertical	<input type="checkbox"/> WAF3 Warm n°3 Solgel Filter	
Color Lenses ⁹	<input type="checkbox"/> COF2 Cool n°2 Solgel Filter	
<input type="checkbox"/> SGFBL Solgel Blue Filter	<input type="checkbox"/> COF3 Cool n°3 Solgel Filter	
<input type="checkbox"/> SGFLB Solgel Light Blue Filter	<input type="checkbox"/> COF4 Cool n°4 Solgel Filter	
<input type="checkbox"/> SGFYE Solgel Yellow Filter		
<input type="checkbox"/> SGFGN Solgel Green Filter		
<input type="checkbox"/> SGFMG Solgel Magenta Filter		

Please refer to product specification sheets for details on Solgel Color-Temp Lenses.

Finish

<input type="checkbox"/> TWO Two-Tone (dark gray, silver)
<input type="checkbox"/> TBK Textured Black
<input type="checkbox"/> TDB Textured Dark Bronze
<input type="checkbox"/> TS Textured Satin Aluminum
<input type="checkbox"/> TWHT Textured White
<input type="checkbox"/> TGN Textured Green
<input type="checkbox"/> TGR Textured Gray
<input type="checkbox"/> TPG Textured Philips Gray
<input type="checkbox"/> RAL(*) Specify Custom RAL color number

Accessories (must be ordered separately)

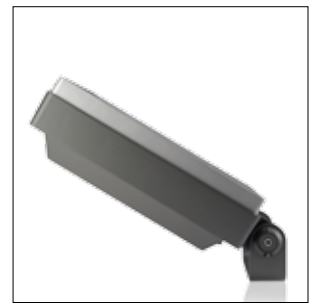
External Shielding Accessories (black unless otherwise specified)	Swivel Mount Accessories
<input type="checkbox"/> BD-DFS4 Barn Doors	<input type="checkbox"/> WMB-16.5-(F) Wall Mounting Bracket
<input type="checkbox"/> TS-DFS4 Top Shield (visor)	<input type="checkbox"/> SMT-2-(F) Surface Mounted Tenon
<input type="checkbox"/> 4S-DFS4 Four Sided Shield	<input type="checkbox"/> JB-VMT-(F) Junction Box with SMT-2
<input type="checkbox"/> 3S-DFS4 Three Sided Shield	<input type="checkbox"/> SM-18-(F) 18" Stanchion Mount
<input type="checkbox"/> HL-DFS4 Horizontal Louvers	<input type="checkbox"/> PTA-2180-16.5-(F) Pole Top Adaptor 2@180
<input type="checkbox"/> VL-DFS4 Vertical Louvers	<input type="checkbox"/> PTA-2090-16.5-(F) Pole Top Adaptor 3@90
<input type="checkbox"/> EC-DFS4 Eggcrate Louvers	<input type="checkbox"/> PTA-3090-16.5-(F) Pole Top Adaptor 3@90
	<input type="checkbox"/> PTA-4090-16.5-(F) Pole Top Adaptor 4@90

Yoke Mount Accessories
<input type="checkbox"/> MF4-(F) Slip Fitter (fits 2-3/8" O.D. tenon)
<input type="checkbox"/> BP-(F) Surface Mount Base Plate
<input type="checkbox"/> JB-BP-(F) Junction Box with BP

(F = specify finish)

DFS5 Large Square

DFS5-SV



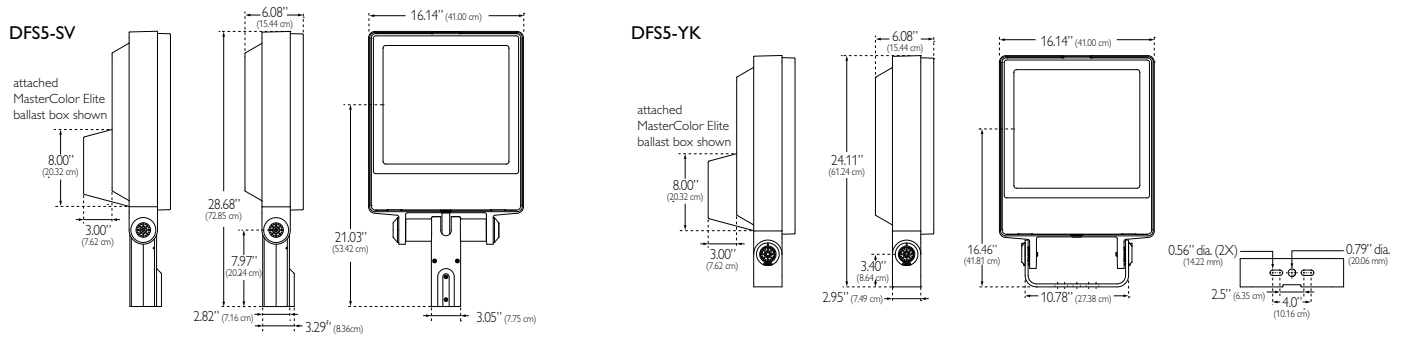
DFS5-YK



DFS5 Ordering Matrix



Dimensions



Ordering Information (lamps are not included and must be ordered separately, contact factory for assistance if required)

Series/Source-Wattage	Distribution	Ballast	Voltage	Style	Options	Lens Options	Finish	Accessories
MasterColor Elite DFS5E-210^{1,4} DFS5E-315^{1,4}	SP³ NB	E¹ C^{2,7}	120 208	SV YK	F1⁵ F2⁵ F3⁵	BSO HLBSP VLBSP	TWO TBK TDB	External Shielding BD-DFS5 TS-DFS5 4S-DFS5 3S-DFS5 HL-DFS5 VL-DFS5 EC-DFS5
Pulse Start Metal Halide DFS5P-200^{1,7} DFS5P-250¹ DFS5P-320¹ DFS5P-350¹ DFS5P-400¹	MB WB A45 A60		240 277 347⁷ 480^{1,2,4}		PCB¹ CSR^{3,5} LQ^{3,5} LQ1^{3,5}	Color Lenses⁶ SGFBL SGFGN SGFLB SGFMG SGFYE	TSA TWHT TGN TGR TPG	Swivel Mount WMB-16.5-(F) SMT-2-(F) JB-VMT-(F) SM-18-(F) PTA-2180-16.5-(F) PTA-2090-16.5-(F) PTA-3090-16.5-(F) PTA-4090-16.5-(F)
High Pressure Sodium DFS5S-250² DFS5S-400²					External Shielding BD	Color Temp Lenses⁶ WAF1 COF2 WAF2 COF3 WAF3 COF4	RAL(*)	Yoke Mount MF4-(F) BP-(F) JB-BP-(F)

Series	Distribution	Ballast	Voltage	Style	Options
MasterColor Elite <input type="checkbox"/> DFS5E-210^{1,4} <input type="checkbox"/> DFS5E-315^{1,4}	<input type="checkbox"/> SP³ Spot Beam <input type="checkbox"/> NB Narrow Beam	<input type="checkbox"/> E¹ Electronic <input type="checkbox"/> C^{2,7} Core & Coil	<input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347⁷ <input type="checkbox"/> 480^{1,2,4}	<input type="checkbox"/> SV Swivel <input type="checkbox"/> YK Yoke Standard cord length is 3 ft.	<input type="checkbox"/> F1⁵ Single Fuse (120/277/347V) <input type="checkbox"/> F2⁵ Double Fuse (208/240/480V) <input type="checkbox"/> F3⁵ Double Fuse (208/240/480V) (Canadian double pull) <input type="checkbox"/> PCB¹ Photocell Button (120-347V) <input type="checkbox"/> CSR^{3,5} Hot Quartz Restrike (no time delay) <input type="checkbox"/> LQ^{3,5} Litematic Hot/Cold Quartz Restrike <input type="checkbox"/> LQ1^{3,5} Litematic Hot/Cold Quartz Restrike (separately wired) <input type="checkbox"/> External Shielding (pre-attached) <input type="checkbox"/> BD Barn Doors (Available Q1-2012)
Pulse Start Metal Halide <input type="checkbox"/> DFS5P-200^{1,7} <input type="checkbox"/> DFS5P-250¹ <input type="checkbox"/> DFS5P-320¹ <input type="checkbox"/> DFS5P-350¹ <input type="checkbox"/> DFS5P-400¹	<input type="checkbox"/> MB Medium Beam <input type="checkbox"/> WB Wide Beam <input type="checkbox"/> A45 Asymmetric 1 <input type="checkbox"/> A60 Asymmetric 2				
High Pressure Sodium <input type="checkbox"/> DFS5S-250² <input type="checkbox"/> DFS5S-400²					

Notes: 1. Electronic ballasts are available in 120-347V, not available in 480V. MasterColor Elite lamps are available with electronic ballast option 'E' only. 'PCB' is not available in 480V.
2. High Pressure Sodium is only available with core & coil option 'C'. Core & coil ballasts are available in 120-480V.
3. 'SP' optics and Electronic Ballast Option ('E') not available with any restrrike options ('CSR', 'LQ', 'LQ1').
4. MasterColor Elite options available in March 2012. MasterColor Elite not available in 480V.
5. Fusing is not available with any restrrike options ('CSR', 'LQ', 'LQ1'). All restrrike options are 150W quartz max.
6. Lens options include lens holder that can hold up to two lenses. Lens holder comes pre-attached to the fixture.
7. DFS5P-200 (200W PSMH) is not available with 'C' core & coil ballast in 347V.

Lens Options <small>(includes lens holder, holds up to two lenses)</small>		Finish	
Spread Lenses⁶ <input type="checkbox"/> BSO Beam Softener <input type="checkbox"/> HLBSP Beam Spreader Horizontal <input type="checkbox"/> VLBSP Beam Spreader Vertical	Color Temp Lenses⁶ <input type="checkbox"/> WAF1 Warm n ¹ Solgel Filter <input type="checkbox"/> WAF2 Warm n ² Solgel Filter <input type="checkbox"/> WAF3 Warm n ³ Solgel Filter <input type="checkbox"/> COF2 Cool n ² Solgel Filter <input type="checkbox"/> COF3 Cool n ³ Solgel Filter <input type="checkbox"/> COF4 Cool n ⁴ Solgel Filter <small>Please refer to product specification sheets for details on Solgel Color-Temp Lenses.</small>	<input type="checkbox"/> TWO Two-Tone (dark gray, silver) <input type="checkbox"/> TBK Textured Black <input type="checkbox"/> TDB Textured Dark Bronze <input type="checkbox"/> TSA Textured Satin Aluminum <input type="checkbox"/> TWHT Textured White <input type="checkbox"/> TGN Textured Green <input type="checkbox"/> TGR Textured Gray <input type="checkbox"/> TPG Textured Philips Gray <input type="checkbox"/> RAL(*) Specify Custom RAL color number	
Color Lenses⁶ <input type="checkbox"/> SGFBL Solgel Blue Filter <input type="checkbox"/> SGFLB Solgel Light Blue Filter <input type="checkbox"/> SGFYE Solgel Yellow Filter <input type="checkbox"/> SGFGN Solgel Green Filter <input type="checkbox"/> SGFMG Solgel Magenta Filter			

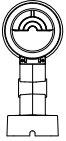
Accessories (must be ordered separately)

- External Shielding Accessories** (black unless otherwise specified)
- BD-DFS5** Barn Doors
 - TS-DFS5** Top Shield (visor)
 - 4S-DFS5** Four Sided Shield
 - 3S-DFS5** Three Sided Shield
 - HL-DFS5** Horizontal Louvers
 - VL-DFS5** Vertical Louvers
 - EC-DFS5** Eggcrate Louvers
- Swivel Mount Accessories**
- WMB-16.5-(F)** Wall Mounting Bracket
 - SMT-2-(F)** Surface Mounted Tenon
 - JB-VMT-(F)** Junction Box with SMT-2
 - SM-18-(F)** 18" Stanchion Mount
 - PTA-2180-16.5-(F)** Pole Top Adaptor 2@180
 - PTA-2090-16.5-(F)** Pole Top Adaptor 2@90
 - PTA-3090-16.5-(F)** Pole Top Adaptor 3@90
 - PTA-4090-16.5-(F)** Pole Top Adaptor 4@90
- Yoke Mount Accessories**
- MF4-(F)** Slip Fitter (fits 2-3/8" O.D. tenon)
 - BP-(F)** Surface Mount Base Plate
 - JB-BP-(F)** Junction Box with BP
- (F = specify finish)

Shield & Lens Accessory Details

DFS1 Shield & Lens Accessory Details (refer to specific DFS1 product spec sheets for additional details)

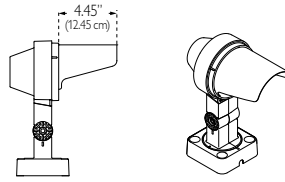
HRL Internal Half Round Louver
(ships installed)



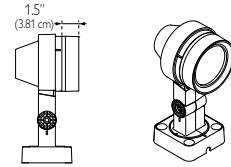
RL Internal Full Round Louver
(ships installed)



GS-DFS1 Glare Shield (visor)
(must be ordered separately)

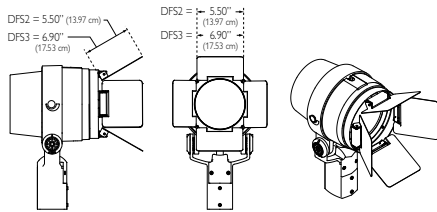


External Lens Holder DFS1
(included with any lens option)
(can hold up to two different lenses at once)
(ships installed)

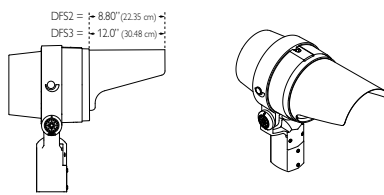


DFS2 & DFS3 Shield & Lens Accessory Details (refer to specific DFS2 or DFS3 product spec sheets for additional details)

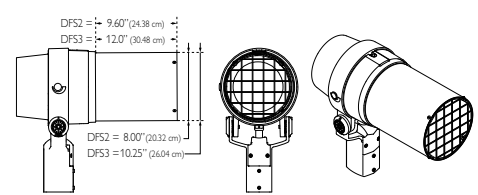
BD-DFS2/3 Barn Doors
(must be ordered separately)



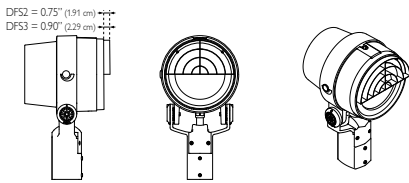
GS-DFS2/3 Glare Shield (visor)
(must be ordered separately)



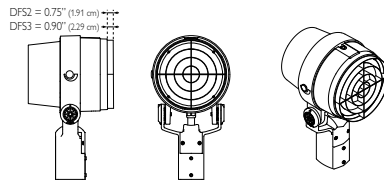
CN-DFS2/3 Cannon (full snoot)
(must be ordered separately)



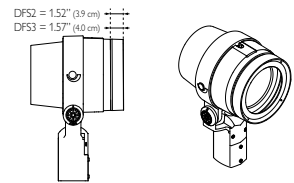
HRL-DFS2/3 Half Round Louver
(must be ordered separately)



RL-DFS2/3 Full Round Louver
(must be ordered separately)

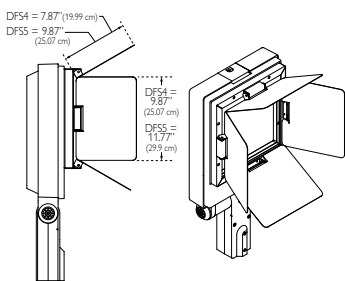


External Lens Holder DFS2/3
(included with any lens option)
(can hold up to two different lenses at once)
(ships installed)

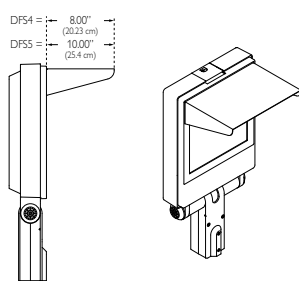


DFS4 & DFS5 Shield & Lens Accessory Details (refer to specific DFS4 or DFS5 product spec sheets for additional details)

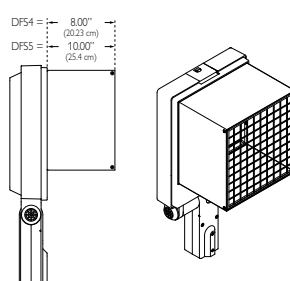
BD-DFS4/5 Barn Doors
(must be ordered separately)



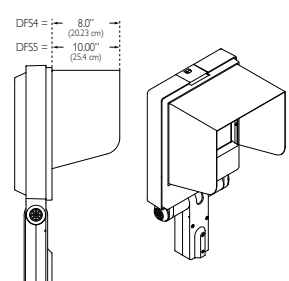
TS-DFS4/5 Top Shield (visor)
(must be ordered separately)



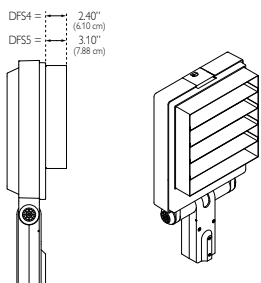
4S-DFS4/5 Four Sided Shield
(must be ordered separately)



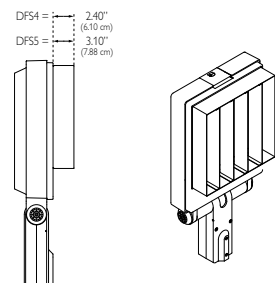
3S-DFS4/5 Three Sided Shield
(must be ordered separately)



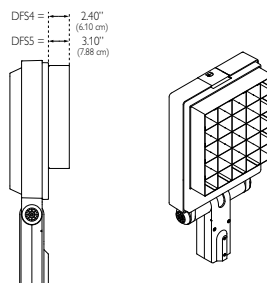
HL-DFS4/5 Horizontal Louvers
(must be ordered separately)



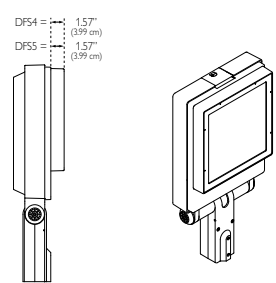
VL-DFS4/5 Vertical Louvers
(must be ordered separately)



EC-DFS4/5 Eggcrate Louvers
(must be ordered separately)



External Lens Holder DFS4/5
(included with any lens option)
(can hold up to two different lenses at once)
(ships installed)



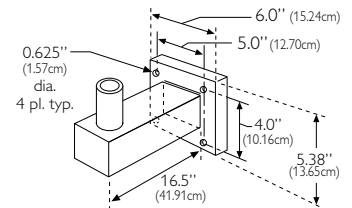
Mounting Accessory Details

Swivel Mount Accessory Details DFS2/3/4/5 (must be ordered separately) (F = specify finish)

WMB-16.5-(F)
Wall Mounting Bracket

2-3/8" O.D. vertical tenon welded to extruded aluminum arm with removable end cap for wiring. Arm is bolted to a cast aluminum plate that has four 5/8" diameter mounting holes.

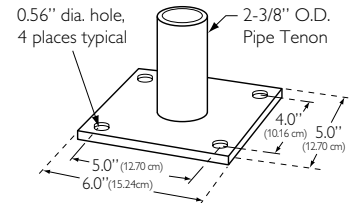
Suitable for mounting single luminaire only.
Mounting hardware by others.



SMT-2-(F)
Surface Mounted Tenon

2-3/8" O.D. aluminum tenon welded to a flat aluminum plate with four 1/2" diameter mounting holes.

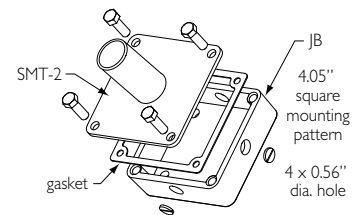
Single floodlight may be pad mounted or wall mounted.
Mounting hardware by others.



JB-VMT-(F)
Junction Box with SMT-2

For mounting to flat surfaces when using surface mount conduit.

Box has four 1/2" pipe entrances.
Mounting hardware by others.

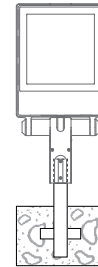


SM-18-(F)
18" Stanchion Mount

Stanchion mounting allows stable positioning of vertical tenon member in aggregate or substrate.

2-3/8" O.D. aluminum tenon welded to a 2-7/8" stanchion.

Standard length: 18"



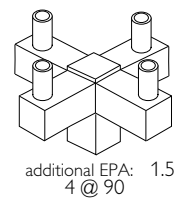
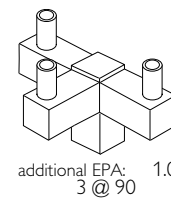
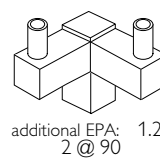
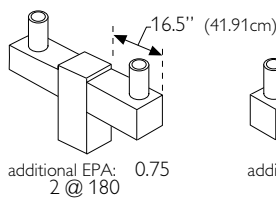
PTA-2180-16.5-(F)
Pole Top Adapter, 2@180

Vertically mounted 2-3/8" O.D. tenons welded to extruded aluminum arms with removable end cap for wiring. Arms bolted to cast aluminum pole top bracket. Fits poles having a 2-3/8" O.D. x 4" vertical tenon.

PTA-2090-16.5-(F)
Pole Top Adapter, 2@90

Components shipped separately. Field assembly required.

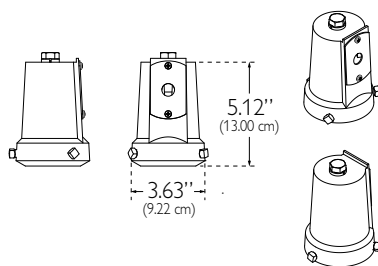
PTA-3090-16.5-(F)
Pole Top Adapter, 3@90



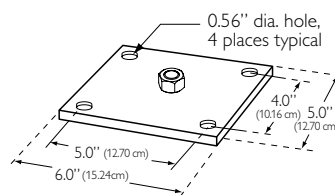
PTA-4090-16.5-(F)
Pole Top Adapter, 4@90

Yoke Mount Accessory Details DFS2/3/4/5 (must be ordered separately) (F = specify finish)

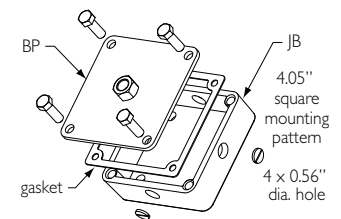
MF4-(F) Slip Fitter
(fits 2-3/8" O.D. tenon)



BP-(F) Surface Mount Base Plate
Flat aluminum plate with four 1/2" diameter mounting holes. Single floodlight may be pad mounted or wall mounted.
Mounting hardware by others.



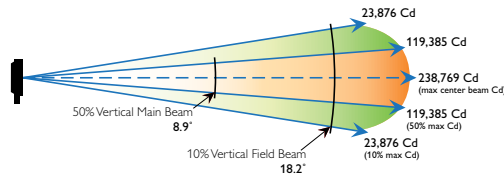
JB-BP-(F) Junction Box with BP
For mounting to flat surfaces when using surface mount conduit.
Box has four 1/2" pipe entrances.
Mounting hardware by others.



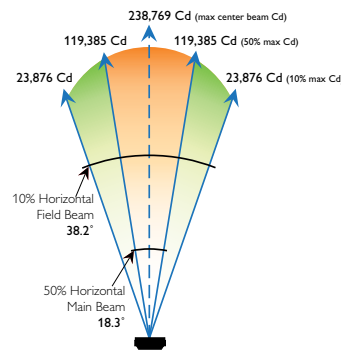
Floodlighting 101, basic design elements

50% Main Beam & 10% Field Beam Explained

Vertical beam spread



Horizontal beam spread



50% Main Beam

The 50% beam is commonly referred to as the optical main beam and is measured in H x V degrees. The main beam is defined by the H x V angles, where 50% of the distribution's maximum candela value (luminous intensity) exits the luminaire.

10% Field Beam

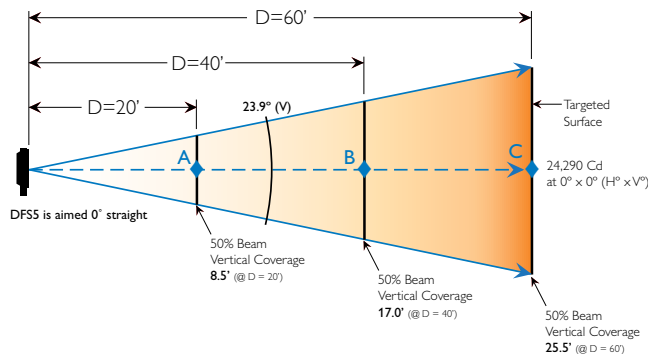
The 10% beam is commonly referred to as the optical field beam and is measured in H x V degrees. The field beam is defined by the H x V angles where 10% of the distribution's maximum candela value (luminous intensity) exits the luminaire.

Example 1

DFS5P-400-SP: Max Candela (I) = 238,769 at 0° x 0° (H° x V°)
 50% Main Beam = 18.3° x 8.9° (H° x V°), 50% of Max Candela (I) = 119,385 Cd
 10% Field Beam = 38.2° x 18.2° (H° x V°), 10% of Max Candela (I) = 23,876 Cd

Inverse Square Law

Floodlighting is a combination of art and science. The science part can be tricky without the use of computer software, but some general rules of thumb can help guide you. With floodlighting, as the distance from the luminaire to the targeted surface increases, the effect of the optical distribution is greatly affected. As the setback distance increases, the width of beam coverage increases while the levels of illumination inside the beam angle decreases.



Inverse Square Law

This is a simple calculation used to determine if an optic and lamp choice can produce the level of illumination you require by simply aiming the fixture directly straight at the targeted surface.

$$F_c = I / D^2$$

F_c is the measured level of illuminance normal (90°) to the targeted surface.

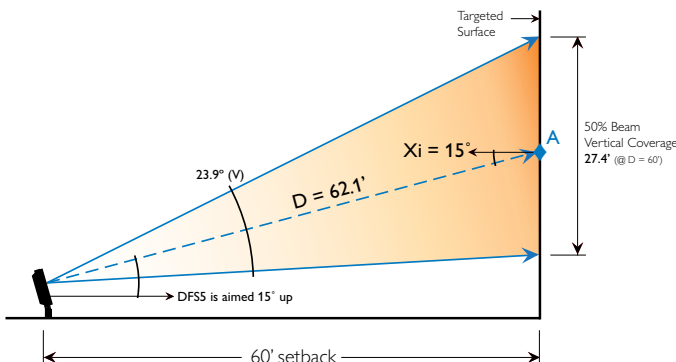
I is the luminous intensity exiting the luminaire measured in Candela.

D is the distance in feet from fixture to the point of illumination to be measured.

Example 2

DFS5E-315-MB: 50% Beam = 83.9° x 23.9° (H° x V°), Candela (I) = 24,290 at 0° x 0° (H° x V°)
F_c (A) = 24,290 / 20² = **60.7 F_c** **F_c (B)** = 24,290 / 40² = **15.2 F_c** **F_c (C)** = 24,290 / 60² = **6.7 F_c**

Inverse Square Cosine Law



Inverse Square Cosine Law

In the real world, most floodlighting applications are not aimed straight at the targeted surface but with some form of fixture tilt or aiming angle. This change in angle in relation to the incident angle of the targeted surface will effect the level of illuminance. This is related directly to the Cosine of the incident angle, and can be evaluated using this simple calculation.

$$F_c = (I / D^2) * \text{Cos} (X_i)$$

F_c is the measured level of illuminance normal (90°) to the targeted surface.

I is the luminous intensity exiting the luminaire measured in Candela.

D is the distance in feet from fixture to the point of illumination to be measured.

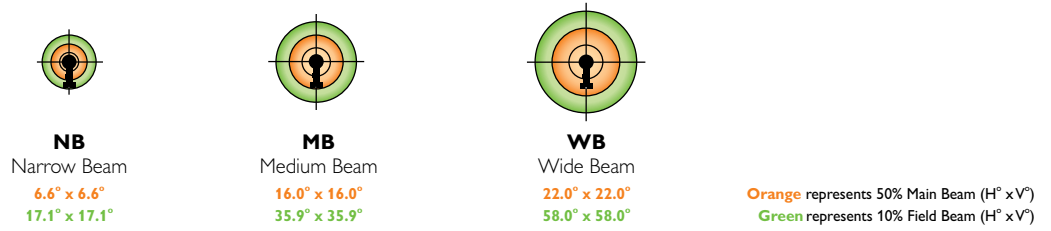
X_i is incident angle from the beam to the point of illumination to be measured.

Example 3

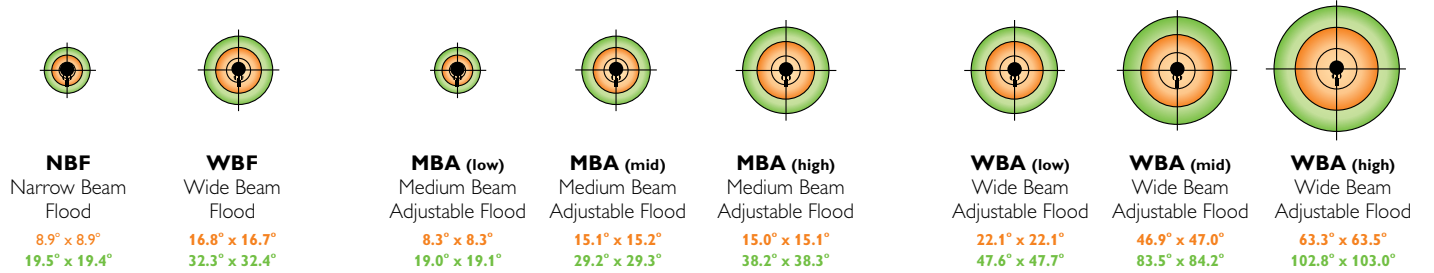
DFS5E-315-MB: 50% Beam = 83.9° x 23.9° (H° x V°), Candela (I) = 24,290 at 0° x 0° (H° x V°)
F_c (A) = (24,290 / 62.1²) * Cos (15°) = **6.1 F_c**

General beam characteristics

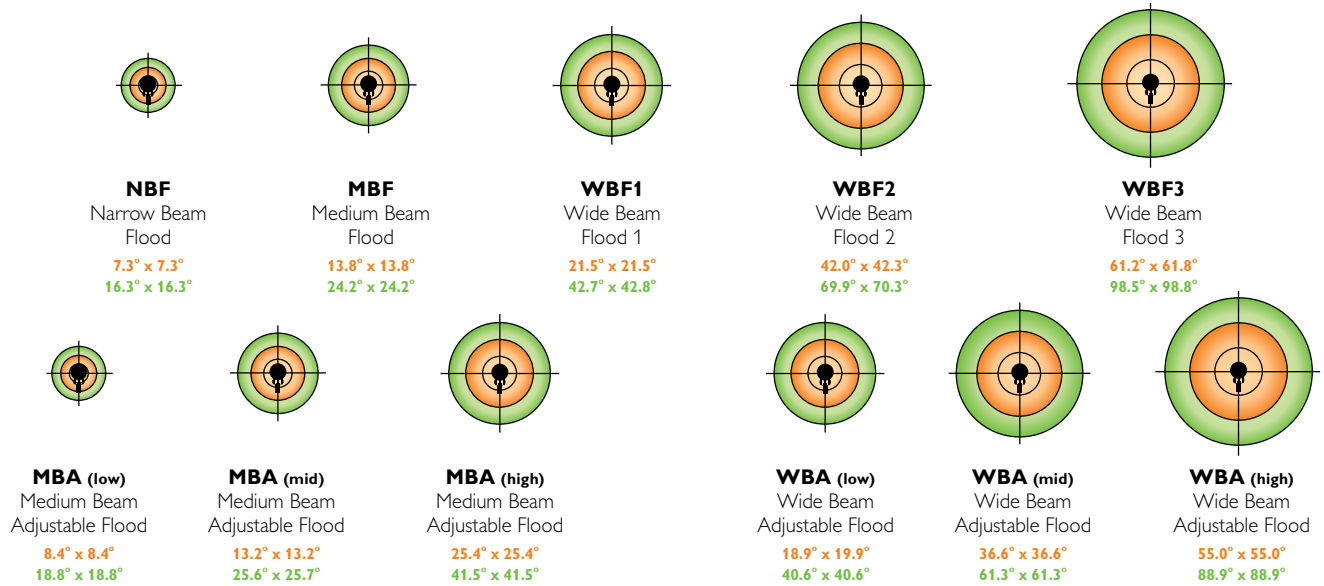
DFS1 Distributions¹



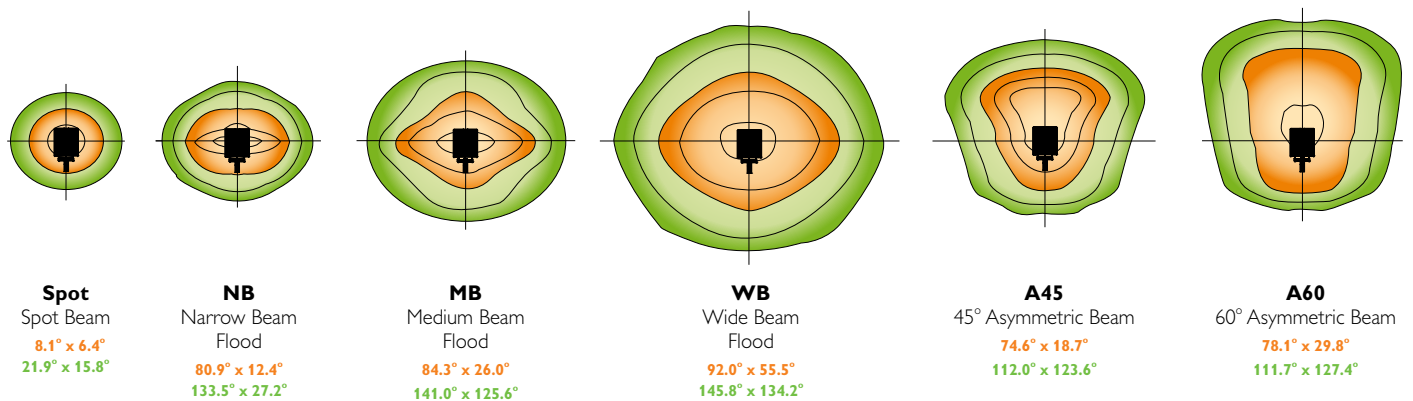
DFS2 Distributions¹



DFS3 Distributions¹



DFS4 & DFS5 Distributions¹

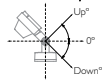


1. Shaded orange 50% Main Beams and shaded green 10% Field Beams are for visual reference only and are not to scale as beams may vary by lamp type and wattage choice. Beam angles shown are for reference only and may vary by lamp type and wattage choice. Please see optical data tables on pages 34 - 39 for specific optical data and beam information. Please contact factory for application engineering assistance.

DFS1 Optical Data



DFS1 can be aimed 67.5° up or 67.5° down when mounted to a horizontal surface.
Please see spec sheet for specific allowable aiming angle details.

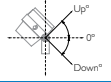


Cat No.	Optic	Initial Lumens	Max CD	50% Main Beam (hor.)	50% Main Beam (vert.)	10% Field Beam (hor.)	10% Field Beam (vert.)	NEMA Beam (hor.)	NEMA Beam (vert.)	Lamp Type	Base	Lamp Axis	IES File #
Mini MasterColor (CMH Pulse Start)													
DFS1P-22	NB	1,650	34,658	6.6°	6.6°	17.1°	17.1°	1H	1V	BT-5	PGJ5	Axial	DFS1P-22-NB.IES
	MB	1,650	8,097	16.0°	16.0°	35.9°	35.9°	3H	3V	BT-5	PGJ5	Axial	DFS1P-22-MB.IES
	WB	1,650	3,736	22.0°	22.0°	58.0°	58.0°	4H	4V	BT-5	PGJ5	Axial	DFS1P-22-WB.IES
DFS1P-39	NB	3,000	63,014	6.6°	6.6°	17.1°	17.1°	1H	1V	BT-5	PGJ5	Axial	DFS1P-39-NB.IES
	MB	3,000	14,721	16.0°	16.0°	35.9°	35.9°	3H	3V	BT-5	PGJ5	Axial	DFS1P-39-MB.IES
	WB	3,000	6,793	22.0°	22.0°	58.0°	58.0°	4H	4V	BT-5	PGJ5	Axial	DFS1P-39-WB.IES

DFS2 Optical Data



DFS2-SV can be aimed 70.0° up or 57.5° down when mounted to a horizontal surface.
DFS2-YK can be aimed 90.0° up or 90.0° down when mounted to a horizontal surface.
Please see spec sheet for aiming diagram details.



Cat No.	Optic	Initial Lumens	Max CD	50% Main Beam (hor.)	50% Main Beam (vert.)	10% Field Beam (hor.)	10% Field Beam (vert.)	NEMA Beam (hor.)	NEMA Beam (vert.)	Lamp Type	Base	Lamp Axis	IES File #
T6 Ceramic Metal Halide (CMH Pulse Start)													
DFS2PT-39	NBF	3,300	44,654	8.9°	8.9°	19.5°	19.4°	2H	2V	T6	G12	Axial	DFS2PT-39-NBF.IES
	WBF	3,300	15,582	16.8°	16.7°	32.3°	32.4°	3H	3V	T6	G12	Axial	DFS2PT-39-WBF.IES
	MBA (low)	3,300	39,166	8.3°	8.3°	19.0°	19.1°	2H	2V	T6	G12	Axial	DFS2PT-39-MBA-LOW.IES
	MBA (mid)	3,300	16,216	15.1°	15.2°	29.2°	29.3°	3H	3V	T6	G12	Axial	DFS2PT-39-MBA-MID.IES
	MBA (high)	3,300	10,611	15.0°	15.1°	38.2°	38.3°	3H	3V	T6	G12	Axial	DFS2PT-39-MBA-HIGH.IES
	WBA (low)	3,300	8,385	22.1°	22.2°	47.6°	47.7°	4H	4V	T6	G12	Axial	DFS2PT-39-WBA-LOW.IES
	WBA (mid)	3,300	2,925	46.9°	47.0°	83.5°	84.2°	5H	5V	T6	G12	Axial	DFS2PT-39-WBA-MID.IES
	WBA (high)	3,300	1,816	63.3°	63.5°	102.8°	103.0°	6H	6V	T6	G12	Axial	DFS2PT-39-WBA-HIGH.IES
DFS2PT-70	NBF	6,600	89,308	8.9°	8.9°	19.5°	19.4°	2H	2V	T6	G12	Axial	DFS2PT-70-NBF.IES
	WBF	6,600	31,163	16.8°	16.7°	32.3°	32.4°	3H	3V	T6	G12	Axial	DFS2PT-70-WBF.IES
	MBA (low)	6,600	78,331	8.3°	8.3°	19.0°	19.1°	2H	2V	T6	G12	Axial	DFS2PT-70-MBA-LOW.IES
	MBA (mid)	6,600	32,432	15.1°	15.2°	29.2°	29.3°	3H	3V	T6	G12	Axial	DFS2PT-70-MBA-MID.IES
	MBA (high)	6,600	21,222	15.0°	15.1°	38.2°	38.3°	3H	3V	T6	G12	Axial	DFS2PT-70-MBA-HIGH.IES
	WBA (low)	6,600	16,770	22.1°	22.2°	47.6°	47.7°	4H	4V	T6	G12	Axial	DFS2PT-70-WBA-LOW.IES
	WBA (mid)	6,600	5,850	46.9°	47.0°	83.5°	84.2°	5H	5V	T6	G12	Axial	DFS2PT-70-WBA-MID.IES
	WBA (high)	6,600	3,632	63.3°	63.5°	102.8°	103.0°	6H	6V	T6	G12	Axial	DFS2PT-70-WBA-HIGH.IES
MasterColor Elite (CMH Pulse Start)													
DFS2E-39	NBF	3,500	47,360	8.9°	8.9°	19.5°	19.4°	2H	2V	T6	G12	Axial	DFS2E-39-NBF.IES
	WBF	3,500	16,526	16.8°	16.7°	32.3°	32.4°	3H	3V	T6	G12	Axial	DFS2E-39-WBF.IES
	MBA (low)	3,500	41,539	8.3°	8.3°	19.0°	19.1°	2H	2V	T6	G12	Axial	DFS2E-39-MBA-LOW.IES
	MBA (mid)	3,500	17,199	15.1°	15.2°	29.2°	29.3°	3H	3V	T6	G12	Axial	DFS2E-39-MBA-MID.IES
	MBA (high)	3,500	11,254	15.0°	15.1°	38.2°	38.3°	3H	3V	T6	G12	Axial	DFS2E-39-MBA-HIGH.IES
	WBA (low)	3,500	8,893	22.1°	22.2°	47.6°	47.7°	4H	4V	T6	G12	Axial	DFS2E-39-WBA-LOW.IES
	WBA (mid)	3,500	3,102	46.9°	47.0°	83.5°	84.2°	5H	5V	T6	G12	Axial	DFS2E-39-WBA-MID.IES
	WBA (high)	3,500	1,926	63.3°	63.5°	102.8°	103.0°	6H	6V	T6	G12	Axial	DFS2E-39-WBA-HIGH.IES
DFS2E-70	NBF	7,300	98,780	8.9°	8.9°	19.5°	19.4°	2H	2V	T6	G12	Axial	DFS2E-70-NBF.IES
	WBF	7,300	34,468	16.8°	16.7°	32.3°	32.4°	3H	3V	T6	G12	Axial	DFS2E-70-WBF.IES
	MBA (low)	7,300	86,639	8.3°	8.3°	19.0°	19.1°	2H	2V	T6	G12	Axial	DFS2E-70-MBA-LOW.IES
	MBA (mid)	7,300	35,872	15.1°	15.2°	29.2°	29.3°	3H	3V	T6	G12	Axial	DFS2E-70-MBA-MID.IES
	MBA (high)	7,300	23,473	15.0°	15.1°	38.2°	38.3°	3H	3V	T6	G12	Axial	DFS2E-70-MBA-HIGH.IES
	WBA (low)	7,300	27,950	22.1°	22.2°	47.6°	47.7°	4H	4V	T6	G12	Axial	DFS2E-70-WBA-LOW.IES
	WBA (mid)	7,300	6,471	46.9°	47.0°	83.5°	84.2°	5H	5V	T6	G12	Axial	DFS2E-70-WBA-MID.IES
	WBA (high)	7,300	4,017	63.3°	63.5°	102.8°	103.0°	6H	6V	T6	G12	Axial	DFS2E-70-WBA-HIGH.IES
DFS2E-100	NBF	11,000	148,847	8.9°	8.9°	19.5°	19.4°	2H	2V	T6	G12	Axial	DFS2E-100-NBF.IES
	WBF	11,000	51,938	16.8°	16.7°	32.3°	32.4°	3H	3V	T6	G12	Axial	DFS2E-100-WBF.IES
	MBA (low)	11,000	130,552	8.3°	8.3°	19.0°	19.1°	2H	2V	T6	G12	Axial	DFS2E-100-MBA-LOW.IES
	MBA (mid)	11,000	54,054	15.1°	15.2°	29.2°	29.3°	3H	3V	T6	G12	Axial	DFS2E-100-MBA-MID.IES
	MBA (high)	11,000	35,370	15.0°	15.1°	38.2°	38.3°	3H	3V	T6	G12	Axial	DFS2E-100-MBA-HIGH.IES
	WBA (low)	11,000	27,950	22.1°	22.2°	47.6°	47.7°	4H	4V	T6	G12	Axial	DFS2E-100-WBA-LOW.IES
	WBA (mid)	11,000	9,750	46.9°	47.0°	83.5°	84.2°	5H	5V	T6	G12	Axial	DFS2E-100-WBA-MID.IES
	WBA (high)	11,000	6,053	63.3°	63.5°	102.8°	103.0°	6H	6V	T6	G12	Axial	DFS2E-100-WBA-HIGH.IES

Please contact factory for application engineering assistance. Visit our website for available shield and lens reports.



DFS3-SV (including DFS3G) can be aimed 82.5° up or 70.0° down when mounted to a horizontal surface.
 DFS3-YK (including DFS3G) can be aimed 90.0° up or 90.0° down when mounted to a horizontal surface.
 DFS3E-210-SV can be aimed 80.0° up or 70.0° down when mounted to a horizontal surface.
 Please see spec sheet for specific allowable aiming angle details.



DFS3 Optical Data

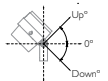
Cat No.	Optic	Initial Lumens	Max CD	50% Main Beam (hor.)	50% Main Beam (vert.)	10% Field Beam (hor.)	10% Field Beam (vert.)	NEMA Beam (hor.)	NEMA Beam (vert.)	Lamp Type	Base	Lamp Axis	IES File #
T6 Ceramic Metal Halide (CMH Pulse Start)													
DFS3PT-39	NBF	3,300	63,256	7.3°	7.3°	16.3°	16.3°	1H	1V	T6	G12	Axial	DFS3PT-39-NBF.IES
	MBF	3,300	25,424	13.8°	13.8°	24.2°	24.2°	2H	2V	T6	G12	Axial	DFS3PT-39-MBF.IES
	WBF1	3,300	9,301	21.5°	21.5°	42.7°	42.8°	3H	3V	T6	G12	Axial	DFS3PT-39-WBF1.IES
	WBF2	3,300	3,437	42.0°	43.0°	69.9°	70.3°	4H	5V	T6	G12	Axial	DFS3PT-39-WBF2.IES
	WBF3	3,300	2,002	61.2°	61.8°	98.5°	98.8°	5H	5V	T6	G12	Axial	DFS3PT-39-WBF3.IES
	MBA (low)	3,300	52,888	8.4°	8.4°	18.8°	18.8°	2H	2V	T6	G12	Axial	DFS3PT-39-MBA-LOW.IES
	MBA (mid)	3,300	25,719	13.2°	13.2°	25.6°	25.6°	2H	2V	T6	G12	Axial	DFS3PT-39-MBA-MID.IES
	MBA (high)	3,300	8,428	25.4°	25.4°	41.5°	41.5°	3H	3V	T6	G12	Axial	DFS3PT-39-MBA-HIGH.IES
	WBA (low)	3,300	13,009	18.9°	19.9°	40.6°	40.6°	3H	3V	T6	G12	Axial	DFS3PT-39-WBA-LOW.IES
	WBA (mid)	3,300	5,068	36.6°	36.6°	61.3°	61.3°	4H	4V	T6	G12	Axial	DFS3PT-39-WBA-MID.IES
WBA (high)	3,300	2,574	55.0°	55.0°	88.9°	88.9°	5H	5V	T6	G12	Axial	DFS3PT-39-WBA-HIGH.IES	
DFS3PT-70	NBF	6,600	126,513	7.3°	7.3°	16.3°	16.3°	1H	1V	T6	G12	Axial	DFS3PT-70-NBF.IES
	MBF	6,600	50,848	13.8°	13.8°	24.2°	24.2°	2H	2V	T6	G12	Axial	DFS3PT-70-MBF.IES
	WBF1	6,600	18,601	21.5°	21.5°	42.7°	42.8°	3H	3V	T6	G12	Axial	DFS3PT-70-WBF1.IES
	WBF2	6,600	6,874	42.0°	43.0°	69.9°	70.3°	4H	5V	T6	G12	Axial	DFS3PT-70-WBF2.IES
	WBF3	6,600	4,004	61.2°	61.8°	98.5°	98.8°	5H	5V	T6	G12	Axial	DFS3PT-70-WBF3.IES
	MBA (low)	6,600	110,310	8.4°	8.4°	18.8°	18.8°	2H	2V	T6	G12	Axial	DFS3PT-70-MBA-LOW.IES
	MBA (mid)	6,600	53,643	13.2°	13.2°	25.6°	25.6°	2H	2V	T6	G12	Axial	DFS3PT-70-MBA-MID.IES
	MBA (high)	6,600	17,579	25.4°	25.4°	41.5°	41.5°	3H	3V	T6	G12	Axial	DFS3PT-70-MBA-HIGH.IES
	WBA (low)	6,600	27,133	18.9°	19.9°	40.6°	40.6°	3H	3V	T6	G12	Axial	DFS3PT-70-WBA-LOW.IES
	WBA (mid)	6,600	10,571	36.6°	36.6°	61.3°	61.3°	4H	4V	T6	G12	Axial	DFS3PT-70-WBA-MID.IES
WBA (high)	6,600	5,369	55.0°	55.0°	88.9°	88.9°	5H	5V	T6	G12	Axial	DFS3PT-70-WBA-HIGH.IES	
DFS3PT-150	NBF	14,000	268,360	7.3°	7.3°	16.3°	16.3°	1H	1V	T6	G12	Axial	DFS3PT-150-NBF.IES
	MBF	14,000	107,860	13.8°	13.8°	24.2°	24.2°	2H	2V	T6	G12	Axial	DFS3PT-150-MBF.IES
	WBF1	14,000	39,458	21.5°	21.5°	42.7°	42.8°	3H	3V	T6	G12	Axial	DFS3PT-150-WBF1.IES
	WBF2	14,000	14,580	42.0°	43.0°	69.9°	70.3°	4H	5V	T6	G12	Axial	DFS3PT-150-WBF2.IES
	WBF3	14,000	8,494	61.2°	61.8°	98.5°	98.8°	5H	5V	T6	G12	Axial	DFS3PT-150-WBF3.IES
	MBA (low)	14,000	211,553	8.4°	8.4°	18.8°	18.8°	2H	2V	T6	G12	Axial	DFS3PT-150-MBA-LOW.IES
	MBA (mid)	14,000	102,877	13.2°	13.2°	25.6°	25.6°	2H	2V	T6	G12	Axial	DFS3PT-150-MBA-MID.IES
	MBA (high)	14,000	33,712	25.4°	25.4°	41.5°	41.5°	3H	3V	T6	G12	Axial	DFS3PT-150-MBA-HIGH.IES
	WBA (low)	14,000	52,035	18.9°	19.9°	40.6°	40.6°	3H	3V	T6	G12	Axial	DFS3PT-150-WBA-LOW.IES
	WBA (mid)	14,000	20,273	36.6°	36.6°	61.3°	61.3°	4H	4V	T6	G12	Axial	DFS3PT-150-WBA-MID.IES
WBA (high)	14,000	10,297	55.0°	55.0°	88.9°	88.9°	5H	5V	T6	G12	Axial	DFS3PT-150-WBA-HIGH.IES	
MasterColor Elite (CMH Pulse Start)													
DFS3E-100	NBF	11,000	210,855	7.3°	7.3°	16.3°	16.3°	1H	1V	T6	G12	Axial	DFS3E-100-NBF.IES
	MBF	11,000	84,747	13.8°	13.8°	24.2°	24.2°	2H	2V	T6	G12	Axial	DFS3E-100-MBF.IES
	WBF1	11,000	31,002	21.5°	21.5°	42.7°	42.8°	3H	3V	T6	G12	Axial	DFS3E-100-WBF1.IES
	WBF2	11,000	11,456	42.0°	43.0°	69.9°	70.3°	4H	5V	T6	G12	Axial	DFS3E-100-WBF2.IES
	WBF3	11,000	6,674	61.2°	61.8°	98.5°	98.8°	5H	5V	T6	G12	Axial	DFS3E-100-WBF3.IES
	MBA (low)	11,000	166,221	8.4°	8.4°	18.8°	18.8°	2H	2V	T6	G12	Axial	DFS3E-100-MBA-LOW.IES
	MBA (mid)	11,000	80,832	13.2°	13.2°	25.6°	25.6°	2H	2V	T6	G12	Axial	DFS3E-100-MBA-MID.IES
	MBA (high)	11,000	26,488	25.4°	25.4°	41.5°	41.5°	3H	3V	T6	G12	Axial	DFS3E-100-MBA-HIGH.IES
	WBA (low)	11,000	40,885	18.9°	18.9°	40.6°	40.6°	3H	3V	T6	G12	Axial	DFS3E-100-WBA-LOW.IES
	WBA (mid)	11,000	15,929	36.6°	36.6°	61.3°	61.3°	4H	4V	T6	G12	Axial	DFS3E-100-WBA-MID.IES
WBA (high)	11,000	11,032	55.0°	55.0°	88.9°	88.9°	5H	5V	T6	G12	Axial	DFS3E-100-WBA-HIGH.IES	

Please contact factory for application engineering assistance. Visit our website for available shield and lens reports.

DFS3 Optical Data (cont'd)



DFS3-SV (including DFS3G) can be aimed 82.5° up or 70.0° down when mounted to a horizontal surface.
 DFS3-YK (including DFS3G) can be aimed 90.0° up or 90.0° down when mounted to a horizontal surface.
 DFS3E-210-SV can be aimed 80.0° up or 70.0° down when mounted to a horizontal surface.
 Please see spec sheet for specific allowable aiming angle details.



Cat No.	Optic	Initial Lumens	Max CD	50% Main Beam (hor.)	50% Main Beam (vert.)	10% Field Beam (hor.)	10% Field Beam (vert.)	NEMA Beam (hor.)	NEMA Beam (vert.)	Lamp Type	Base	Lamp Axis	IES File #
MasterColor Elite (CMH Pulse Start)													
DFS3E-150	NBF	15,000	287,529	7.3°	7.3°	16.3°	16.3°	1H	1V	T6	G12	Axial	DFS3E-150-NBF.IES
	MBF	15,000	115,565	13.8°	13.8°	24.2°	24.2°	2H	2V	T6	G12	Axial	DFS3E-150-MBF.IES
	WBF1	15,000	42,276	21.5°	21.5°	42.7°	42.8°	3H	3V	T6	G12	Axial	DFS3E-150-WBF1.IES
	WBF2	15,000	15,622	42.0°	43.0°	69.9°	70.3°	4H	5V	T6	G12	Axial	DFS3E-150-WBF2.IES
	WBF3	15,000	9,101	61.2°	61.8°	98.5°	98.8°	5H	5V	T6	G12	Axial	DFS3E-150-WBF3.IES
	MBA (low)	15,000	226,664	8.4°	8.4°	18.8°	18.8°	2H	2V	T6	G12	Axial	DFS3E-150-MBA-LOW.IES
	MBA (mid)	15,000	110,225	13.2°	13.2°	25.6°	25.6°	2H	2V	T6	G12	Axial	DFS3E-150-MBA-MID.IES
	MBA (high)	15,000	36,120	25.4°	25.4°	41.5°	41.5°	3H	3V	T6	G12	Axial	DFS3E-150-MBA-HIGH.IES
	WBA (low)	15,000	52,035	18.9°	18.9°	40.6°	40.6°	3H	3V	T6	G12	Axial	DFS3E-150-WBA-LOW.IES
	WBA (mid)	15,000	21,721	36.6°	36.6°	61.3°	61.3°	4H	4V	T6	G12	Axial	DFS3E-150-WBA-MID.IES
WBA (high)	15,000	11,032	55.0°	55.0°	88.9°	88.9°	5H	5V	T6	G12	Axial	DFS3E-150-WBA-HIGH.IES	
DFS3E-210	NBF	24,150	341,807	8.1°	8.1°	17.9°	17.9°	1H	1V	T9	PGZ18	Axial	DFS3E-210-NBF.IES
	MBF	24,150	162,687	14.2°	14.2°	24.7°	24.8°	2H	2V	T9	PGZ18	Axial	DFS3E-210-MBF.IES
	WBF1	24,150	60,150	21.7°	21.7°	43.7°	43.8°	3H	3V	T9	PGZ18	Axial	DFS3E-210-WBF1.IES
	WBF2	24,150	18,525	50.1°	50.2°	85.2°	85.9°	5H	5V	T9	PGZ18	Axial	DFS3E-210-WBF2.IES
	WBF3	24,150	11,516	69.2°	69.5°	103.2°	103.3°	6H	6V	T9	PGZ18	Axial	DFS3E-210-WBF3.IES
Pulse Start Metal Halide													
DFS3P-70	NBF	6,200	76,236	7.9°	7.9°	19.4°	19.3°	2H	2V	ED17	MED	Axial	DFS3P-70-NBF.IES
	MBF	6,200	28,767	15.7°	15.6°	27.1°	27.6°	2H	2V	ED17	MED	Axial	DFS3P-70-MBF.IES
	WBF1	6,200	14,179	22.5°	22.5°	44.7°	44.7°	3H	3V	ED17	MED	Axial	DFS3P-70-WBF1.IES
	WBF2	6,200	6,098	43.7°	43.6°	75.2°	75.6°	5H	5V	ED17	MED	Axial	DFS3P-70-WBF2.IES
	WBF3	6,200	3,742	62.5°	62.6°	100.6°	100.8°	6H	6V	ED17	MED	Axial	DFS3P-70-WBF3.IES
DFS3P-100	NBF	9,500	116,813	7.9°	7.9°	19.4°	19.3°	2H	2V	ED17	MED	Axial	DFS3P-100-NBF.IES
	MBF	9,500	44,079	15.7°	15.6°	27.1°	27.6°	2H	2V	ED17	MED	Axial	DFS3P-100-MBF.IES
	WBF1	9,500	21,725	22.5°	22.5°	44.7°	44.7°	3H	3V	ED17	MED	Axial	DFS3P-100-WBF1.IES
	WBF2	9,500	9,344	43.7°	43.6°	75.2°	75.6°	5H	5V	ED17	MED	Axial	DFS3P-100-WBF2.IES
	WBF3	9,500	5,734	62.5°	62.6°	100.6°	100.8°	6H	6V	ED17	MED	Axial	DFS3P-100-WBF3.IES
DFS3P-150	NBF	14,000	172,145	7.9°	7.9°	19.4°	19.3°	2H	2V	ED17	MED	Axial	DFS3P-150-NBF.IES
	MBF	14,000	64,959	15.7°	15.6°	27.1°	27.6°	2H	2V	ED17	MED	Axial	DFS3P-150-MBF.IES
	WBF1	14,000	32,017	22.5°	22.5°	44.7°	44.7°	3H	3V	ED17	MED	Axial	DFS3P-150-WBF1.IES
	WBF2	14,000	13,770	43.7°	43.6°	75.2°	75.6°	5H	5V	ED17	MED	Axial	DFS3P-150-WBF2.IES
	WBF3	14,000	8,450	62.5°	62.6°	100.6°	100.8°	6H	6V	ED17	MED	Axial	DFS3P-150-WBF3.IES
High Pressure Sodium													
DFS3S-70	NBF	6,300	43,979	8.3°	8.2°	26.7°	26.3°	2H	2V	BD17	MED	Axial	DFS3S-70-NBF.IES
	MBF	6,300	16,689	19.4°	20.4°	40.5°	41.1°	3H	3V	BD17	MED	Axial	DFS3S-70-MBF.IES
	WBF1	6,300	10,479	25.2°	25.2°	53.6°	53.7°	4H	4V	BD17	MED	Axial	DFS3S-70-WBF1.IES
	WBF2	6,300	5,812	38.6°	39.1°	87.6°	87.7°	5H	5V	BD17	MED	Axial	DFS3S-70-WBF2.IES
	WBF3	6,300	3,578	60.6°	61.0°	107.2°	107.3°	6H	6V	BD17	MED	Axial	DFS3S-70-WBF3.IES
DFS3S-100	NBF	9,500	66,318	8.3°	8.2°	26.7°	26.3°	2H	2V	BD17	MED	Axial	DFS3S-100-NBF.IES
	MBF	9,500	25,165	19.4°	20.4°	40.5°	41.1°	3H	3V	BD17	MED	Axial	DFS3S-100-MBF.IES
	WBF1	9,500	15,802	25.2°	25.2°	53.6°	53.7°	4H	4V	BD17	MED	Axial	DFS3S-100-WBF1.IES
	WBF2	9,500	8,765	38.6°	39.1°	87.6°	87.7°	5H	5V	BD17	MED	Axial	DFS3S-100-WBF2.IES
	WBF3	9,500	5,396	60.6°	61.0°	107.2°	107.3°	6H	6V	BD17	MED	Axial	DFS3S-100-WBF3.IES
DFS3S-150	NBF	16,000	111,692	8.3°	8.2°	26.7°	26.3°	2H	2V	BD17	MED	Axial	DFS3S-150-NBF.IES
	MBF	16,000	42,384	19.4°	20.4°	40.5°	41.1°	3H	3V	BD17	MED	Axial	DFS3S-150-MBF.IES
	WBF1	16,000	26,614	25.2°	25.2°	53.6°	53.7°	4H	4V	BD17	MED	Axial	DFS3S-150-WBF1.IES
	WBF2	16,000	14,762	38.6°	39.1°	87.6°	87.7°	5H	5V	BD17	MED	Axial	DFS3S-150-WBF2.IES
	WBF3	16,000	9,088	60.6°	61.0°	107.2°	107.3°	6H	6V	BD17	MED	Axial	DFS3S-150-WBF3.IES

Please contact factory for application engineering assistance. Visit our website for available shield and lens reports.



DFS4-SV can be aimed 92.5° up or 92.5° down when mounted to a horizontal surface.
 DFS4-YK can be aimed 90.0° up or 90.0° down when mounted to a horizontal surface.
 Please see spec sheet for specific allowable aiming angle details.



DFS4 Optical Data

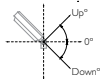
Cat No.	Optic	Initial Lumens	Max CD	50% Main Beam (hor.)	50% Main Beam (vert.)	10% Field Beam (hor.)	10% Field Beam (vert.)	NEMA Beam (hor.)	NEMA Beam (vert.)	Lamp Type	Base	Lamp Axis	IES File #
T6 Ceramic Metal Halide (CMH Pulse Start)													
DFS4PT-39	SP	3,300	47,795	8.1°	6.4°	21.9°	15.8°	2H	1V	T6	G12	Horiz.	DFS4PT-39-SP.IES
	NB	3,300	4,367	80.9°	12.4°	133.5°	27.2°	7H	2V	T6	G12	Horiz.	DFS4PT-39-NB.IES
	MB	3,300	2,155	84.3°	26.0°	141.0°	125.6°	7H	6V	T6	G12	Horiz.	DFS4PT-39-MB.IES
	WB	3,300	1,392	92.0°	55.5°	145.8°	134.2°	7H	7V	T6	G12	Horiz.	DFS4PT-39-WB.IES
	A45	3,300	2,364	74.6°	18.7°	112.0°	123.6°	6H	6V	T6	G12	Horiz.	DFS4PT-39-A45.IES
	A60	3,300	1,853	78.1°	29.8°	111.7°	127.4°	6H	6V	T6	G12	Horiz.	DFS4PT-39-A60.IES
DFS4PT-70	SP	6,600	95,590	8.1°	6.4°	21.9°	15.8°	2H	1V	T6	G12	Horiz.	DFS4PT-70-SP.IES
	NB	6,600	8,733	80.9°	12.4°	133.5°	27.2°	7H	2V	T6	G12	Horiz.	DFS4PT-70-NB.IES
	MB	6,600	4,309	84.3°	26.0°	141.0°	125.6°	7H	6V	T6	G12	Horiz.	DFS4PT-70-MB.IES
	WB	6,600	2,783	92.0°	55.5°	145.8°	134.2°	7H	7V	T6	G12	Horiz.	DFS4PT-70-WB.IES
	A45	6,600	4,729	74.6°	18.7°	112.0°	123.6°	6H	6V	T6	G12	Horiz.	DFS4PT-70-A45.IES
	A60	6,600	3,705	78.1°	29.8°	111.7°	127.4°	6H	6V	T6	G12	Horiz.	DFS4PT-70-A60.IES
DFS4PT-150	SP	15,000	202,768	8.1°	6.4°	21.9°	15.8°	2H	1V	T6	G12	Horiz.	DFS4PT-150-SP.IES
	NB	15,000	18,524	80.9°	12.4°	133.5°	27.2°	7H	2V	T6	G12	Horiz.	DFS4PT-150-NB.IES
	MB	15,000	9,140	84.3°	26.0°	141.0°	125.6°	7H	6V	T6	G12	Horiz.	DFS4PT-150-MB.IES
	WB	15,000	5,905	92.0°	55.5°	145.8°	134.2°	7H	7V	T6	G12	Horiz.	DFS4PT-150-WB.IES
	A45	15,000	10,031	74.6°	18.7°	112.0°	123.6°	6H	6V	T6	G12	Horiz.	DFS4PT-150-A45.IES
	A60	15,000	7,860	78.1°	29.8°	111.7°	127.4°	6H	6V	T6	G12	Horiz.	DFS4PT-150-A60.IES
CosmoPolis (CMH Pulse Start)													
DFS4C-60	SP	6,900	70,801	9.8°	7.1°	29.4°	15.4°	3H	1V	T6	PGZ12	Horiz.	DFS4C-60-SP.IES
	NB	6,900	9,174	80.7°	12.9°	133.9°	30.2°	7H	7V	T6	PGZ12	Horiz.	DFS4C-60-NB.IES
	MB	6,900	4,886	84.6°	25.9°	140.4°	126.2°	7H	6V	T6	PGZ12	Horiz.	DFS4C-60-MB.IES
	WB	6,900	2,798	93.5°	59.4°	145.4°	140.0°	7H	7V	T6	PGZ12	Horiz.	DFS4C-60-WB.IES
	A45	6,900	5,265	75.0°	16.1°	109.9°	123.1°	6H	6V	T6	PGZ12	Horiz.	DFS4C-60-A45.IES
	A60	6,900	3,803	75.6°	30.2°	109.7°	130.5°	6H	7V	T6	PGZ12	Horiz.	DFS4C-60-A60.IES
DFS4C-90	SP	10,450	107,228	9.8°	7.1°	29.4°	15.4°	3H	1V	T6	PGZ12	Horiz.	DFS4C-90-SP.IES
	NB	10,450	13,894	80.7°	12.9°	133.9°	30.2°	7H	7V	T6	PGZ12	Horiz.	DFS4C-90-NB.IES
	MB	10,450	7,399	84.6°	25.9°	140.4°	126.2°	7H	6V	T6	PGZ12	Horiz.	DFS4C-90-MB.IES
	WB	10,450	4,237	93.5°	59.4°	145.4°	140.0°	7H	7V	T6	PGZ12	Horiz.	DFS4C-90-WB.IES
	A45	10,450	8,519	75.0°	16.1°	109.9°	123.1°	6H	6V	T6	PGZ12	Horiz.	DFS4C-90-A45.IES
	A60	10,450	5,759	75.6°	30.2°	109.7°	130.5°	6H	7V	T6	PGZ12	Horiz.	DFS4C-90-A60.IES
DFS4C-140	SP	16,500	169,307	9.8°	7.1°	29.4°	15.4°	3H	1V	T6	PGZ12	Horiz.	DFS4C-140-SP.IES
	NB	16,500	21,938	80.7°	12.9°	133.9°	30.2°	7H	7V	T6	PGZ12	Horiz.	DFS4C-140-NB.IES
	MB	16,500	11,683	84.6°	25.9°	140.4°	126.2°	7H	6V	T6	PGZ12	Horiz.	DFS4C-140-MB.IES
	WB	16,500	6,690	93.5°	59.4°	145.4°	140.0°	7H	7V	T6	PGZ12	Horiz.	DFS4C-140-WB.IES
	A45	16,500	13,450	75.0°	16.1°	109.9°	123.1°	6H	6V	T6	PGZ12	Horiz.	DFS4C-140-A45.IES
	A60	16,500	9,093	75.6°	30.2°	109.7°	130.5°	6H	7V	T6	PGZ12	Horiz.	DFS4C-140-A60.IES
MasterColor Elite (CMH Pulse Start)													
DFS4E-39	SP	3,500	50,692	8.1°	6.4°	21.9°	15.8°	2H	1V	T6	G12	Horiz.	DFS4E-39-SP.IES
	NB	3,500	4,631	80.9°	12.4°	133.5°	27.2°	7H	2V	T6	G12	Horiz.	DFS4E-39-NB.IES
	MB	3,500	2,285	84.3°	26.0°	141.0°	125.6°	7H	6V	T6	G12	Horiz.	DFS4E-39-MB.IES
	WB	3,500	1,476	92.0°	55.5°	145.8°	134.2°	7H	7V	T6	G12	Horiz.	DFS4E-39-WB.IES
	A45	3,500	2,508	74.6°	18.7°	112.0°	123.6°	6H	6V	T6	G12	Horiz.	DFS4E-39-A45.IES
	A60	3,500	1,965	78.1°	29.8°	111.7°	127.4°	6H	6V	T6	G12	Horiz.	DFS4E-39-A60.IES
DFS4E-70	SP	7,300	105,729	8.1°	6.4°	21.9°	15.8°	2H	1V	T6	G12	Horiz.	DFS4E-70-SP.IES
	NB	7,300	9,659	80.9°	12.4°	133.5°	27.2°	7H	2V	T6	G12	Horiz.	DFS4E-70-NB.IES
	MB	7,300	4,766	84.3°	26.0°	141.0°	125.6°	7H	6V	T6	G12	Horiz.	DFS4E-70-MB.IES
	WB	7,300	3,079	92.0°	55.5°	145.8°	134.2°	7H	7V	T6	G12	Horiz.	DFS4E-70-WB.IES
	A45	7,300	5,230	74.6°	18.7°	112.0°	123.6°	6H	6V	T6	G12	Horiz.	DFS4E-70-A45.IES
	A60	7,300	4,098	78.1°	29.8°	111.7°	127.4°	6H	6V	T6	G12	Horiz.	DFS4E-70-A60.IES

Please contact factory for application engineering assistance. Visit our website for available shield and lens reports.

DFS4 Optical Data (cont'd)



DFS4-SV can be aimed 92.5° up or 92.5° down when mounted to a horizontal surface.
 DFS4-YK can be aimed 90.0° up or 90.0° down when mounted to a horizontal surface.
 Please see spec sheet for specific allowable aiming angle details.



Cat No.	Optic	Initial Lumens	Max CD	50% Main Beam (hor.)	50% Main Beam (vert.)	10% Field Beam (hor.)	10% Field Beam (vert.)	NEMA Beam (hor.)	NEMA Beam (vert.)	Lamp Type	Base	Lamp Axis	IES File #
MasterColor Elite (CMH Pulse Start)													
DFS4E-100	SP	11,000	159,317	8.1°	6.4°	21.9°	15.8°	2H	1V	T6	G12	Horiz.	DFS4E-100-SP.IES
	NB	11,000	14,555	80.9°	12.4°	133.5°	27.2°	7H	2V	T6	G12	Horiz.	DFS4E-100-NB.IES
	MB	11,000	7,182	84.3°	26.0°	141.0°	125.6°	7H	6V	T6	G12	Horiz.	DFS4E-100-MB.IES
	WB	11,000	4,640	92.0°	55.5°	145.8°	134.2°	7H	7V	T6	G12	Horiz.	DFS4E-100-WB.IES
	A45	11,000	7,881	74.6°	18.7°	112.0°	123.6°	6H	6V	T6	G12	Horiz.	DFS4E-100-A45.IES
	A60	11,000	6,176	78.1°	29.8°	111.7°	127.4°	6H	6V	T6	G12	Horiz.	DFS4E-100-A60.IES
DFS4E-150	SP	15,000	217,251	8.1°	6.4°	21.9°	15.8°	2H	1V	T6	G12	Horiz.	DFS4E-150-SP.IES
	NB	15,000	19,848	80.9°	12.4°	133.5°	27.2°	7H	2V	T6	G12	Horiz.	DFS4E-150-NB.IES
	MB	15,000	9,793	84.3°	26.0°	141.0°	125.6°	7H	6V	T6	G12	Horiz.	DFS4E-150-MB.IES
	WB	15,000	6,326	92.0°	55.5°	145.8°	134.2°	7H	7V	T6	G12	Horiz.	DFS4E-150-WB.IES
	A45	15,000	10,747	74.6°	18.7°	112.0°	123.6°	6H	6V	T6	G12	Horiz.	DFS4E-150-A45.IES
	A60	15,000	8,421	78.1°	29.8°	111.7°	127.4°	6H	6V	T6	G12	Horiz.	DFS4E-150-A60.IES
Pulse Start Metal Halide													
DFS4P-70	SP	6,200	89,797	8.1°	6.4°	21.9°	15.8°	2H	1V	ED17	MED	Horiz.	DFS4P-70-SP.IES
	NB	6,200	8,204	80.9°	12.4°	133.5°	27.2°	7H	2V	ED17	MED	Horiz.	DFS4P-70-NB.IES
	MB	6,200	4,048	84.3°	26.0°	141.0°	125.6°	7H	6V	ED17	MED	Horiz.	DFS4P-70-MB.IES
	WB	6,200	2,615	92.0°	55.5°	145.8°	134.2°	7H	7V	ED17	MED	Horiz.	DFS4P-70-WB.IES
	A45	6,200	4,442	74.6°	18.7°	112.0°	123.6°	6H	6V	ED17	MED	Horiz.	DFS4P-70-A45.IES
	A60	6,200	3,481	78.1°	29.8°	111.7°	127.4°	6H	6V	ED17	MED	Horiz.	DFS4P-70-A60.IES
DFS4P-100	SP	9,500	137,592	8.1°	6.4°	21.9°	15.8°	2H	1V	ED17	MED	Horiz.	DFS4P-100-SP.IES
	NB	9,500	12,570	80.9°	12.4°	133.5°	27.2°	7H	2V	ED17	MED	Horiz.	DFS4P-100-NB.IES
	MB	9,500	6,202	84.3°	26.0°	141.0°	125.6°	7H	6V	ED17	MED	Horiz.	DFS4P-100-MB.IES
	WB	9,500	4,007	92.0°	55.5°	145.8°	134.2°	7H	7V	ED17	MED	Horiz.	DFS4P-100-WB.IES
	A45	9,500	6,807	74.6°	18.7°	112.0°	123.6°	6H	6V	ED17	MED	Horiz.	DFS4P-100-A45.IES
	A60	9,500	5,334	78.1°	29.8°	111.7°	127.4°	6H	6V	ED17	MED	Horiz.	DFS4P-100-A60.IES
DFS4P-150	SP	14,000	202,768	8.1°	6.4°	21.9°	15.8°	2H	1V	ED17	MED	Horiz.	DFS4P-150-SP.IES
	NB	14,000	18,525	80.9°	12.4°	133.5°	27.2°	7H	2V	ED17	MED	Horiz.	DFS4P-150-NB.IES
	MB	14,000	9,140	84.3°	26.0°	141.0°	125.6°	7H	6V	ED17	MED	Horiz.	DFS4P-150-MB.IES
	WB	14,000	5,905	92.0°	55.5°	145.8°	134.2°	7H	7V	ED17	MED	Horiz.	DFS4P-150-WB.IES
	A45	14,000	10,031	74.6°	18.7°	112.0°	123.6°	6H	6V	ED17	MED	Horiz.	DFS4P-150-A45.IES
	A60	14,000	7,860	78.1°	29.8°	111.7°	127.4°	6H	6V	ED17	MED	Horiz.	DFS4P-150-A60.IES
High Pressure Sodium													
DFS4S-70	SP	6,300	34,225	15.6°	9.5°	40.1°	19.7°	3H	2V	BD17	MED	Horiz.	DFS4S-70-SP.IES
	NB	6,300	8,104	80.2°	12.4°	130.3°	65.4°	7H	4V	BD17	MED	Horiz.	DFS4S-70-NB.IES
	MB	6,300	4,474	84.0°	25.5°	137.5°	129.4°	7H	6V	BD17	MED	Horiz.	DFS4S-70-MB.IES
	WB	6,300	2,672	91.2°	58.5°	142.7°	136.3°	7H	7V	BD17	MED	Horiz.	DFS4S-70-WB.IES
	A45	6,300	5,010	74.6°	16.0°	109.7°	123.6°	6H	6V	BD17	MED	Horiz.	DFS4S-70-A45.IES
	A60	6,300	3,273	76.7°	31.7°	107.9°	129.1°	6H	6V	BD17	MED	Horiz.	DFS4S-70-A60.IES
DFS4S-100	SP	9,500	51,610	15.6°	9.5°	40.1°	19.7°	3H	2V	BD17	MED	Horiz.	DFS4S-100-SP.IES
	NB	9,500	12,221	80.2°	12.4°	130.3°	65.4°	7H	4V	BD17	MED	Horiz.	DFS4S-100-NB.IES
	MB	9,500	6,746	84.0°	25.5°	137.5°	129.4°	7H	6V	BD17	MED	Horiz.	DFS4S-100-MB.IES
	WB	9,500	4,029	91.2°	58.5°	142.7°	136.3°	7H	7V	BD17	MED	Horiz.	DFS4S-100-WB.IES
	A45	9,500	7,554	74.6°	16.0°	109.7°	123.6°	6H	6V	BD17	MED	Horiz.	DFS4S-100-A45.IES
	A60	9,500	4,936	76.7°	31.7°	107.9°	129.1°	6H	6V	BD17	MED	Horiz.	DFS4S-100-A60.IES
DFS4S-150	SP	16,000	86,921	15.6°	9.5°	40.1°	19.7°	3H	2V	BD17	MED	Horiz.	DFS4S-150-SP.IES
	NB	16,000	20,582	80.2°	12.4°	130.3°	65.4°	7H	4V	BD17	MED	Horiz.	DFS4S-150-NB.IES
	MB	16,000	11,362	84.0°	25.5°	137.5°	129.4°	7H	6V	BD17	MED	Horiz.	DFS4S-150-MB.IES
	WB	16,000	6,786	91.2°	58.5°	142.7°	136.3°	7H	7V	BD17	MED	Horiz.	DFS4S-150-WB.IES
	A45	16,000	12,773	74.6°	16.0°	109.7°	123.6°	6H	6V	BD17	MED	Horiz.	DFS4S-150-A45.IES
	A60	16,000	8,313	76.7°	31.7°	107.9°	129.1°	6H	6V	BD17	MED	Horiz.	DFS4S-150-A60.IES

Please contact factory for application engineering assistance. Visit our website for available shield and lens reports.



DFS5-SV can be aimed 100.0° up or 100.0° down when mounted to a horizontal surface.
 DFS5-YK can be aimed 90.0° up or 90.0° down when mounted to a horizontal surface.
 Please see spec sheet for specific allowable aiming angle details.



DFS5 Optical Data

Cat No.	Optic	Initial Lumens	Max CD	50% Main Beam (hor.)	50% Main Beam (vert.)	10% Field Beam (hor.)	10% Field Beam (vert.)	NEMA Beam (hor.)	NEMA Beam (vert.)	Lamp Type	Base	Lamp Axis	IES File #
MasterColor Elite (CMH Pulse Start)													
DFSSE-210	SP	24,150	258,808	10.8°	9.1°	19.7°	17.0°	2H	1V	T9	PGZ18	Horiz.	DFSSE-210-SP.IES
	NB	24,150	28,356	77.0°	13.9°	138.9°	32.2°	7H	3V	T9	PGZ18	Horiz.	DFSSE-210-NB.IES
	MB	24,150	16,507	83.9°	23.9°	143.6°	117.5°	7H	6V	T9	PGZ18	Horiz.	DFSSE-210-MB.IES
	WB	24,150	10,039	112.2°	55.0°	149.6°	123.8°	7H	6V	T9	PGZ18	Horiz.	DFSSE-210-WB.IES
	A45	24,150	15,778	83.2°	21.8°	135.7°	122.5°	7H	6V	T9	PGZ18	Horiz.	DFSSE-210-A45.IES
	A60	24,150	11,297	83.6°	40.8°	132.0°	128.1°	7H	6V	T9	PGZ18	Horiz.	DFSSE-210-A60.IES
DFSSE-315	SP	37,800	405,091	10.8°	9.1°	19.7°	17.0°	2H	1V	T9	PGZ18	Horiz.	DFSSE-315-SP.IES
	NB	37,800	44,383	77.0°	13.9°	138.9°	32.2°	7H	3V	T9	PGZ18	Horiz.	DFSSE-315-NB.IES
	MB	37,800	25,837	83.9°	23.9°	143.6°	117.5°	7H	6V	T9	PGZ18	Horiz.	DFSSE-315-MB.IES
	WB	37,800	15,713	112.2°	55.0°	149.6°	123.8°	7H	6V	T9	PGZ18	Horiz.	DFSSE-315-WB.IES
	A45	37,800	24,698	83.2°	21.8°	135.7°	122.5°	7H	6V	T9	PGZ18	Horiz.	DFSSE-315-A45.IES
	A60	37,800	17,682	83.6°	40.8°	132.0°	128.1°	7H	6V	T9	PGZ18	Horiz.	DFSSE-315-A60.IES
Pulse Start Metal Halide													
DFSSP-200	SP	19,000	113,415	18.3°	8.9°	38.2°	18.2°	3H	2V	T15	MOG	Horiz.	DFSSP-200-SP.IES
	NB	19,000	23,824	77.2°	12.7°	133.6°	30.6°	7H	3V	T15	MOG	Horiz.	DFSSP-200-NB.IES
	MB	19,000	11,789	85.3°	27.6°	140.6°	118.5°	7H	6V	T15	MOG	Horiz.	DFSSP-200-MB.IES
	WB	19,000	7,692	97.7°	57.0°	145.5°	126.8°	7H	6V	T15	MOG	Horiz.	DFSSP-200-WB.IES
	A45	19,000	12,128	84.3°	21.5°	131.9°	126.6°	7H	6V	T15	MOG	Horiz.	DFSSP-200-A45.IES
	A60	19,000	9,113	82.6°	31.3°	126.3°	128.1°	6H	6V	T15	MOG	Horiz.	DFSSP-200-A60.IES
DFSSP-250	SP	22,000	131,323	18.3°	8.9°	38.2°	18.2°	3H	2V	ED28	MOG	Horiz.	DFSSP-250-SP.IES
	NB	22,000	27,586	77.2°	12.7°	133.6°	30.6°	7H	3V	ED28	MOG	Horiz.	DFSSP-250-NB.IES
	MB	22,000	13,650	85.3°	27.6°	140.6°	118.5°	7H	6V	ED28	MOG	Horiz.	DFSSP-250-MB.IES
	WB	22,000	8,906	97.7°	57.0°	145.5°	126.8°	7H	6V	ED28	MOG	Horiz.	DFSSP-250-WB.IES
	A45	22,000	15,283	84.3°	21.5°	131.9°	126.6°	7H	6V	ED28	MOG	Horiz.	DFSSP-250-A45.IES
	A60	22,000	10,552	82.6°	31.3°	126.3°	128.1°	6H	6V	ED28	MOG	Horiz.	DFSSP-250-A60.IES
DFSSP-320	SP	30,000	179,077	18.3°	8.9°	38.2°	18.2°	3H	2V	ED28	MOG	Horiz.	DFSSP-320-SP.IES
	NB	30,000	37,617	77.2°	12.7°	133.6°	30.6°	7H	3V	ED28	MOG	Horiz.	DFSSP-320-NB.IES
	MB	30,000	18,614	85.3°	27.6°	140.6°	118.5°	7H	6V	ED28	MOG	Horiz.	DFSSP-320-MB.IES
	WB	30,000	12,145	97.7°	57.0°	145.5°	126.8°	7H	6V	ED28	MOG	Horiz.	DFSSP-320-WB.IES
	A45	30,000	19,149	84.3°	21.5°	131.9°	126.6°	7H	6V	ED28	MOG	Horiz.	DFSSP-320-A45.IES
	A60	30,000	14,390	82.6°	31.3°	126.3°	128.1°	6H	6V	ED28	MOG	Horiz.	DFSSP-320-A60.IES
DFSSP-400	SP	40,000	238,769	18.3°	8.9°	38.2°	18.2°	3H	2V	ED28	MOG	Horiz.	DFSSP-400-SP.IES
	NB	40,000	50,156	77.2°	12.7°	133.6°	30.6°	7H	3V	ED28	MOG	Horiz.	DFSSP-400-NB.IES
	MB	40,000	24,818	85.3°	27.6°	140.6°	118.5°	7H	6V	ED28	MOG	Horiz.	DFSSP-400-MB.IES
	WB	40,000	16,193	97.7°	57.0°	145.5°	126.8°	7H	6V	ED28	MOG	Horiz.	DFSSP-400-WB.IES
	A45	40,000	25,532	84.3°	21.5°	131.9°	126.6°	7H	6V	ED28	MOG	Horiz.	DFSSP-400-A45.IES
	A60	40,000	19,186	82.6°	31.3°	126.3°	128.1°	6H	6V	ED28	MOG	Horiz.	DFSSP-400-A60.IES
High Pressure Sodium													
DFSSS-250	SP	27,000	102,411	17.0°	8.1°	61.5°	21.3°	4H	2V	E18	MOG	Horiz.	DFSSS-250-SP.IES
	NB	27,000	34,582	77.3°	12.6°	128.1°	34.1°	6H	3V	E18	MOG	Horiz.	DFSSS-250-NB.IES
	MB	27,000	19,137	81.4°	25.0°	134.7°	131.3°	7H	7V	E18	MOG	Horiz.	DFSSS-250-MB.IES
	WB	27,000	10,926	88.2°	63.1°	142.2°	137.3°	7H	7V	E18	MOG	Horiz.	DFSSS-250-WB.IES
	A45	27,000	19,233	78.4°	19.0°	125.0°	125.8°	6H	6V	E18	MOG	Horiz.	DFSSS-250-A45.IES
	A60	27,000	14,320	77.4°	36.6°	121.1°	127.2°	6H	6V	E18	MOG	Horiz.	DFSSS-250-A60.IES
DFSSS-400	SP	50,000	189,650	17.0°	8.1°	61.5°	21.3°	4H	2V	E18	MOG	Horiz.	DFSSS-400-SP.IES
	NB	50,000	64,041	77.3°	12.6°	128.1°	34.1°	6H	3V	E18	MOG	Horiz.	DFSSS-400-NB.IES
	MB	50,000	91,677	81.4°	25.0°	134.7°	131.3°	7H	7V	E18	MOG	Horiz.	DFSSS-400-MB.IES
	WB	50,000	20,234	88.2°	63.1°	142.2°	137.3°	7H	7V	E18	MOG	Horiz.	DFSSS-400-WB.IES
	A45	50,000	35,616	78.4°	19.0°	125.0°	125.8°	6H	6V	E18	MOG	Horiz.	DFSSS-400-A45.IES
	A60	50,000	26,519	77.4°	36.6°	121.1°	127.2°	6H	6V	E18	MOG	Horiz.	DFSSS-400-A60.IES

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