



## Floodlighting

### PowerForm

#### PFF floodlight



**Gardco PowerForm LED floodlights** deliver exceptional light output for large-scale and high-traffic spaces such as airport terminals, railyards, docks and piers, ensuring the security and visibility of your precious cargo. With modular sizing and a range of optics, including PowerForm's exclusive Airport Apron optic, these floodlights provide powerful, uniform illumination up to 138,600 lumens (equivalent to over 1,500W HID). Whether you need to light up expansive environments or spotlight critical zones and building facades, PowerForm ensures superior performance and reduced energy and maintenance costs.

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Cat.No: \_\_\_\_\_

Type: \_\_\_\_\_

Lamps: \_\_\_\_\_ Qty: \_\_\_\_\_

Notes: \_\_\_\_\_

### Ordering guide

example: PFF-184L-900-NW-G2-YK-SP-120-PCB-F1-BZ

Prefix	Number of LEDs	Drive Current	Color Temperature	Mounting	Distribution	Voltage
<b>PFF</b>						
PFF PowerForm flood	<b>138L</b> 138 LEDs (3 modules)	<b>700</b> 700mA	<b>WW-G2</b> Warm White 3000K, 70 CRI Generation 2	<b>SF</b> Slip Fitter Mount (fits on 2-3/8" O.D. tenon, wires through slip fitter)	<b>A33</b> Asymmetric 33° Flood (NEMA 6x5)	<b>120</b> 120V
	<b>184L</b> 184 LEDs (4 modules)	<b>900</b> 900mA				<b>208</b> 208V
	<b>230L</b> 230 LEDs (5 modules)	<b>1A</b> 1 Amp	<b>NW-G2</b> Neutral White 4000K, 70 CRI Generation 2	<b>YK</b> Yoke Mount (9' or 2.74m cord exits luminaire)	<b>RM</b> Rectangular Medium Flood (NEMA 7x4)	<b>240</b> 240V
	<b>276L</b> 276 LEDs (6 modules)	<b>1.2A</b> <sup>4,7</sup> 1.2 Amp				<b>277</b> 277V
	Note: 46 LEDs per module				<b>SP</b> Spot (12° round) (NEMA 2x2)	<b>347</b> 347V
					<b>AIRP</b> Airport Apron Flood (NEMA 7x5)	<b>480</b> 480V
						<b>UNV</b> 120-277V
						<b>HVU</b> 347-480V

Options									
Dimming Controls (only one option may be selected)		Fusing	Surge Protection	Other Options		Side Rails		Finish	
<b>0-10V options</b>		<b>none</b> leave blank	<b>blank</b> Surge Protector 10kV / 10kA (standard)	<b>none</b> leave blank	<b>PCB</b> <sup>6</sup> Photocontrol Button	<b>blank</b> standard anodized, no finish	<b>BK</b> Black	<b>WH</b> White <b>BZ</b> Bronze <b>DGY</b> Dark Gray <b>MGY</b> Medium Gray <b>RAL</b> <sup>3</sup> Optional Color (specify optional color or RAL) <b>CC</b> <sup>3</sup> Custom Color (must supply color chip, requires factory quote)	
<b>none</b>	leave blank (0-10V dimming driver standard)	<b>F1</b> Single (120, 277, 347VAC)	<b>SP2</b> Surge Protector 20kV / 10kA (option)	<b>TLRD7</b> <sup>2</sup>	Twist Lock Receptacle 7-pin	<b>PSR</b> Painted Side Rails, painted same finish to match luminaire finish	<b>WH</b> White		
<b>DD</b>	0-10V dimming external wires (controls by others)	<b>F2</b> Double (208, 240, 480VAC)		<b>TLRPC</b> <sup>2,5,6</sup>	Twist Lock 5-pin Receptacle w/ 3-pin Photocell		<b>BZ</b> Bronze		
<b>FAWS</b> <sup>7</sup>	Field Adjustable Wattage Selector	<b>F3</b> Canadian Double Pole (208, 240, 480VAC)		<b>BAC</b> <sup>8,9</sup>	Meets the requirements of the Buy American Act of 1933 (BAA)		<b>DGY</b> Dark Gray		
		<b>Pole Mount Fusing</b> <sup>5</sup>					<b>MGY</b> Medium Gray		
		<b>FP1</b> Single (120, 277, 347VAC)					<b>RAL</b> <sup>3</sup> Optional Color (specify optional color or RAL)		
		<b>FP2</b> Double (208, 240, 480VAC)					<b>CC</b> <sup>3</sup> Custom Color (must supply color chip, requires factory quote)		
		<b>FP3</b> Canadian Double Pole (208, 240, 480VAC)							

- Luminaire has 0-10V dimming wires exiting the luminaire for dimming controls by others.
- TLRD7 and TLRPC max aiming angle 45°. TLRD7 works with 3, 5 or 7 pin NEMA photocell/dimming, use of photocell (by others) or shorting cap (must be ordered separately, see table below for more details) is required to ensure proper illumination. TLRD7 and TLRPC receptacle pins 4 & 5 are capped off when ordered with any of the Dimming Controls DD or FAWS.
- Must contact factory prior to ordering.
- 276L with 1.2A only available as ETO Special - must contact factory prior to ordering.
- Must specify specific input voltage, not available with UNV or HVU.
- PCB and TLRPC available in 120V, 208V, 240V, or 277V only.
- FAWS not available with 1.2A (switch has lower current limit).
- Extended lead times apply. Contact factory for details.
- Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.

### Connected lighting

**Interact City connector node** provides the plug and play wireless communications technology to connect your floodlight to the Interact City lighting management system.

Accessory Ordering Code	Description
LLC	Interact City cellular technology connector node

Contact Signify for additional support when connected lighting or additional services are desired.  
For more details visit: <https://www.interact-lighting.com>



### Shorting cap

Ordered separately for use with TLRD7 or TLRPC options<sup>4</sup>

Catalog Number	Description
912400548061	ACC-PH9



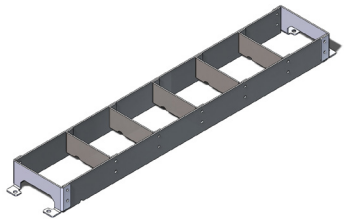
# PFF PowerForm Floodlight

PowerForm Accessories (ordered separately, field installed, specify finish at placeholder F)

## Shielding Accessories

### Glare shield (black finish)

GS-PFF-138	138 LEDs (3 modules)
GS-PFF-184	184 LEDs (4 modules)
GS-PFF-230	230 LEDs (5 modules)
GS-PFF-276	276 LEDs (6 modules)



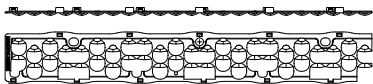
GS louvered glare shields are ordered as an accessory only and can be used with A33, RM, and AIRP optics; can not be used with SP optics due to fit restriction - if required, must contact factory prior to ordering since it is an ETO Special.

Glare shields are aluminum sheet metal louvers painted in a smooth black power coat finish. Each set includes a mounting kit that fastens to the front face of the LED light engine and includes stainless steel hardware.

One glare shield attaches to each 46 LED module. The total number of glare shields is determined by total number of modules per luminaire where required.

### Internal house side shield

HIS-PFF-138	138 LEDs (3 modules)
HIS-PFF-184	184 LEDs (4 modules)
HIS-PFF-230	230 LEDs (5 modules)
HIS-PFF-276	276 LEDs (6 modules)



HIS internal house side shields are ordered as an accessory only and can be used with A33 and RM optics; can not be used with SP or AIRP optics due to fit restriction.

Internal shields are injection molded black polymer that snap fit on each 46 LED module. The total number of internal shields is determined by the total number of modules per luminaire where required.

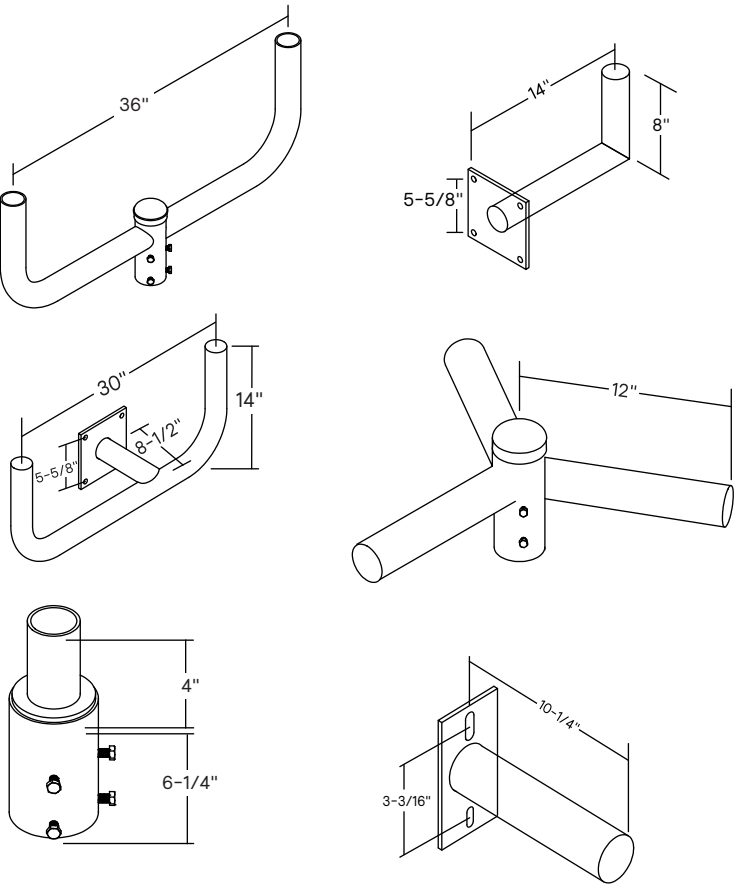
## Mounting Accessories

For wall and pole brackets, bullhorns, etc. see <https://www.signify.com/en-us/products/outdoor-luminaires/poles-brackets/site-and-area-brackets/bullhorn-brackets#downloads> for details.

Exception: All UPS Upsweep - contact factory to confirm compatibility.

Exception: SBRKT-SAB-NA-4-WA-(F) Side Angle Flat bracket cannot be used with any PFF versions due to only single mounting hole that is too small for required mounting bolts.

Exception: PFF-276L 6 module version cannot be used with any brackets, etc. due to its weight - too heavy.



Examples shown are not to scale - see SBRKT spec sheet for all available brackets

# PFF PowerForm

## Floodlight

LED Wattage and Lumen Values – 3000K

Ordering Code	Total LEDs	Module Qty	LED Current (mA)	Color Temp.	Average System Watts	A33		RM		SP		AIRP	
						Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)
PFF-138L-700-WW-G2	138	3	700	3000	289	43,048	149	42,433	147	43,619	151	42,284	146
PFF-138L-900-WW-G2	138	3	900	3000	397	51,974	131	51,231	129	52,663	133	51,051	128
PFF-138L-1A-WW-G2	138	3	1050	3000	455	58,940	130	58,098	128	59,721	131	57,894	127
PFF-138L-1.2A-WW-G2	138	3	1200	3000	511	65,101	127	64,170	126	65,962	129	62,793	123
PFF-184L-700-WW-G2	184	4	700	3000	386	57,398	149	56,577	147	58,159	151	56,379	146
PFF-184L-900-WW-G2	184	4	900	3000	530	69,299	131	68,308	129	70,217	133	68,068	128
PFF-184L-1A-WW-G2	184	4	1050	3000	606	78,587	130	77,463	128	79,628	131	77,191	127
PFF-184L-1.2A-WW-G2	184	4	1200	3000	681	86,801	127	85,559	126	87,950	129	83,724	123
PFF-230L-700-WW-G2	230	5	700	3000	482	71,747	149	70,722	147	72,698	151	70,474	146
PFF-230L-900-WW-G2	230	5	900	3000	662	86,623	131	85,385	129	87,771	133	85,085	128
PFF-230L-1A-WW-G2	230	5	1050	3000	758	98,234	130	96,829	128	99,534	131	96,489	127
PFF-230L-1.2A-WW-G2	230	5	1200	3000	852	108,500	127	106,949	126	109,937	129	106,574	125
PFF-276L-700-WW-G2	276	6	700	3000	579	86,097	149	84,866	147	87,237	151	84,568	146
PFF-276L-900-WW-G2	276	6	900	3000	795	103,948	131	102,462	129	105,325	133	103,975	131
PFF-276L-1A-WW-G2	276	6	1050	3000	909	117,880	130	116,194	128	119,442	131	117,911	130
PFF-276L-1.2A-WW-G2	276	6	1200	3000	1022	130,200	127	128,338	126	131,924	129	127,888	125

LED Wattage and Lumen Values – 4000K

Ordering Code	Total LEDs	Module Qty	LED Current (mA)	Color Temp.	Average System Watts	A33		RM		SP		AIRP	
						Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)
PFF-138L-700-NW-G2	138	3	700	4000	289	45,219	156	44,573	154	45,818	158	44,416	154
PFF-138L-900-NW-G2	138	3	900	4000	397	54,595	137	53,814	135	55,318	139	53,625	135
PFF-138L-1A-NW-G2	138	3	1050	4000	455	61,912	136	61,027	134	62,732	138	60,813	134
PFF-138L-1.2A-NW-G2	138	3	1200	4000	511	68,383	134	67,405	132	69,288	136	65,959	129
PFF-184L-700-NW-G2	184	4	700	4000	386	60,292	156	59,430	154	61,091	158	59,222	154
PFF-184L-900-NW-G2	184	4	900	4000	530	72,793	137	71,752	135	73,757	139	71,500	135
PFF-184L-1A-NW-G2	184	4	1050	4000	606	82,549	136	81,369	134	83,643	138	81,083	134
PFF-184L-1.2A-NW-G2	184	4	1200	4000	681	91,177	134	89,873	132	92,384	136	87,945	129
PFF-230L-700-NW-G2	230	5	700	4000	482	75,365	156	74,288	154	76,363	158	74,027	154
PFF-230L-900-NW-G2	230	5	900	4000	662	90,991	137	89,690	135	92,196	139	89,375	135
PFF-230L-1A-NW-G2	230	5	1050	4000	758	103,187	136	101,711	134	104,553	138	101,354	134
PFF-230L-1.2A-NW-G2	230	5	1200	4000	852	113,971	134	112,341	132	115,480	136	111,947	131
PFF-276L-700-NW-G2	276	6	700	4000	579	90,438	156	89,145	154	91,636	158	88,832	154
PFF-276L-900-NW-G2	276	6	900	4000	795	109,189	137	107,628	135	110,635	139	109,217	137
PFF-276L-1A-NW-G2	276	6	1050	4000	909	123,824	136	122,053	134	125,464	138	123,856	136
PFF-276L-1.2A-NW-G2	276	6	1200	4000	1022	136,765	134	134,809	132	138,576	136	134,336	131

Values from photometric tests performed in accordance with IESNA LM-79 and are representative of the configurations shown. Actual performance may vary due to installation and environmental variables, LED and driver tolerances, and field measurement considerations. It is highly recommended to confirm performance with a photometric layout.

**NOTE:** Some data may be scaled based on tests of similar (but not identical) luminaires. Contact factory for configurations not shown.

Field Adjustable Wattage Selector (FAWS) Multiplier Chart

FAWS Position	Typical Lumens and System Wattage Multiplier	
	138L/184L	230L/276L
1	10%	15%
2	20%	35%
3	30%	45%
4	40%	60%
5	45%	70%
6	55%	85%
7	60%	100%
8	70%	100%
9	80%	100%
10	100%	100%

**Note:** Actual performance may vary due to LED and driver tolerances

# PFF PowerForm

## Floodlight

### LED Wattage and Lumen Values – 3000K with glare shield

Ordering Code	Total LEDs	Module Qty	LED Current (mA)	Color Temp.	Average System Watts	A33-GS		RM-GS		AIRP-GS	
						Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)
PFF-138L-700-WW-G2-GS	138	3	700	3000	289	33,280	115	32,884	114	22,022	76
PFF-138L-900-WW-G2-GS	138	3	900	3000	397	40,180	101	39,701	100	26,587	67
PFF-138L-1A-WW-G2-GS	138	3	1050	3000	455	45,566	100	45,023	99	30,151	66
PFF-138L-1.2A-WW-G2-GS	138	3	1200	3000	511	49,421	97	48,833	96	32,702	64
PFF-184L-700-WW-G2-GS	184	4	700	3000	386	44,374	115	43,844	114	29,363	76
PFF-184L-900-WW-G2-GS	184	4	900	3000	530	53,574	101	52,935	100	35,450	67
PFF-184L-1A-WW-G2-GS	184	4	1050	3000	606	60,754	100	60,030	99	40,201	66
PFF-184L-1.2A-WW-G2-GS	184	4	1200	3000	681	65,895	97	65,110	96	43,604	64
PFF-230L-700-WW-G2-GS	230	5	700	3000	482	55,466	115	54,806	114	36,702	76
PFF-230L-900-WW-G2-GS	230	5	900	3000	662	66,967	101	66,169	100	44,313	67
PFF-230L-1A-WW-G2-GS	230	5	1050	3000	758	75,942	100	75,038	99	50,251	66
PFF-230L-1.2A-WW-G2-GS	230	5	1200	3000	852	83,879	98	82,880	97	55,504	65
PFF-276L-700-WW-G2-GS	276	6	700	3000	579	66,560	115	65,767	114	44,043	76
PFF-276L-900-WW-G2-GS	276	6	900	3000	795	81,834	103	80,859	102	54,150	68
PFF-276L-1A-WW-G2-GS	276	6	1050	3000	909	92,802	102	91,697	101	61,408	68
PFF-276L-1.2A-WW-G2-GS	276	6	1200	3000	1022	100,655	98	99,456	97	66,604	65

### LED Wattage and Lumen Values – 4000K with glare shield

Ordering Code	Total LEDs	Module Qty	LED Current (mA)	Color Temp.	Average System Watts	A33-GS		RM-GS		AIRP-GS	
						Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)	Lumen Output	Efficacy (LPW)
PFF-138L-700-NW-G2-GS	138	3	700	4000	289	34,958	121	34,542	119	23,132	80
PFF-138L-900-NW-G2-GS	138	3	900	4000	397	42,206	106	41,703	105	27,928	70
PFF-138L-1A-NW-G2-GS	138	3	1050	4000	455	47,863	105	47,293	104	31,671	70
PFF-138L-1.2A-NW-G2-GS	138	3	1200	4000	511	51,913	102	51,295	100	34,351	67
PFF-184L-700-NW-G2-GS	184	4	700	4000	386	46,611	121	46,055	119	30,843	80
PFF-184L-900-NW-G2-GS	184	4	900	4000	530	56,275	106	55,604	105	37,237	70
PFF-184L-1A-NW-G2-GS	184	4	1050	4000	606	63,817	105	63,057	104	42,228	70
PFF-184L-1.2A-NW-G2-GS	184	4	1200	4000	681	69,217	102	68,393	100	45,802	67
PFF-230L-700-NW-G2-GS	230	5	700	4000	482	58,263	121	57,569	119	38,553	80
PFF-230L-900-NW-G2-GS	230	5	900	4000	662	70,343	106	69,505	105	46,547	70
PFF-230L-1A-NW-G2-GS	230	5	1050	4000	758	79,771	105	78,821	104	52,785	70
PFF-230L-1.2A-NW-G2-GS	230	5	1200	4000	852	88,108	103	87,059	102	58,302	68
PFF-276L-700-NW-G2-GS	276	6	700	4000	579	69,916	121	69,083	119	46,264	80
PFF-276L-900-NW-G2-GS	276	6	900	4000	795	85,960	108	84,936	107	56,880	72
PFF-276L-1A-NW-G2-GS	276	6	1050	4000	909	97,481	107	96,320	106	64,504	71
PFF-276L-1.2A-NW-G2-GS	276	6	1200	4000	1022	105,730	103	104,471	102	69,962	68

Values from photometric tests performed in accordance with IESNA LM-79 and are representative of the configurations shown. Actual performance may vary due to installation and environmental variables, LED and driver tolerances, and field measurement considerations. It is highly recommended to confirm performance with a photometric layout.

**NOTE:** Some data may be scaled based on tests of similar (but not identical) luminaires.

### Predicted Lumen Depreciation Data

Ambient Temperature (°C)	Driver Current	Calculated L70 hours	L70 per TM-21	Lumen Maintenance % @ 60,000 hours
25°C	up to 1200 mA	>100,000	>60,000	98%

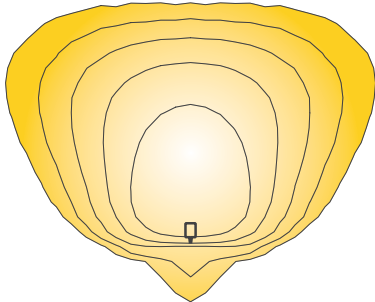
Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L70 hours limited to 6 times actual LED test hours.

# PFF PowerForm

## Floodlight

### Optical Distribution Diagrams

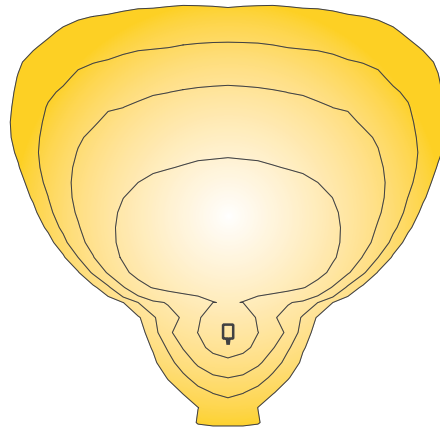
**A33 Asymmetric 33° Flood (NEMA 6x5)**



**30' or 9.14m mounting height, 30° tilt**

Applications include: large area lighting, storage yards, transportation terminals, ports, utility sub-stations, security lighting, large facades, large wall washing, tall structures / monuments / statues

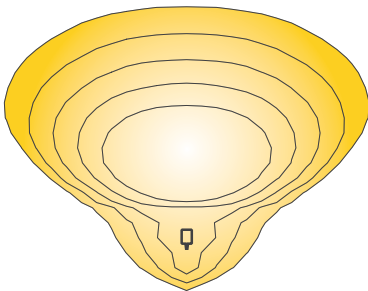
**AIRP Airport Apron Flood**



**30' or 9.14m mounting height, 25° tilt**

Applications: airport aprons

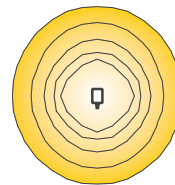
**RM Rectangular Medium Flood (NEMA 7x4)**



**30' or 9.14m setback, 50° tilt**

Applications include: building entrances and exits, security lighting, perimeter fences, checkpoints and inspection stations, large and wide wall grazing, large signs

**SP Spot 12° Round (NEMA 2x2)**

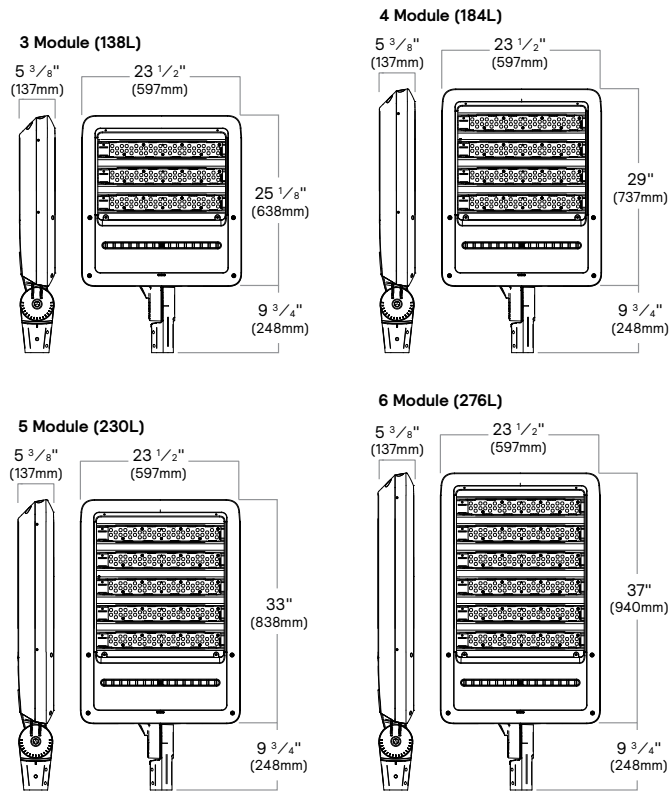


**30' or 9.14m setback, 0° tilt**

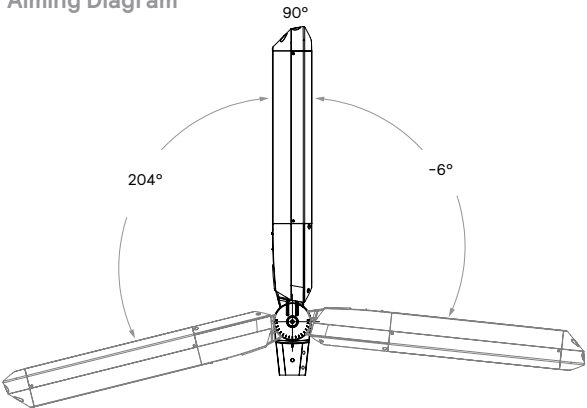
Applications include: spotlighting, accenting, tall columns, tall structures / monuments / statues

# PFF PowerForm Floodlight

## Dimensions – Slipfitter Mount (SF)



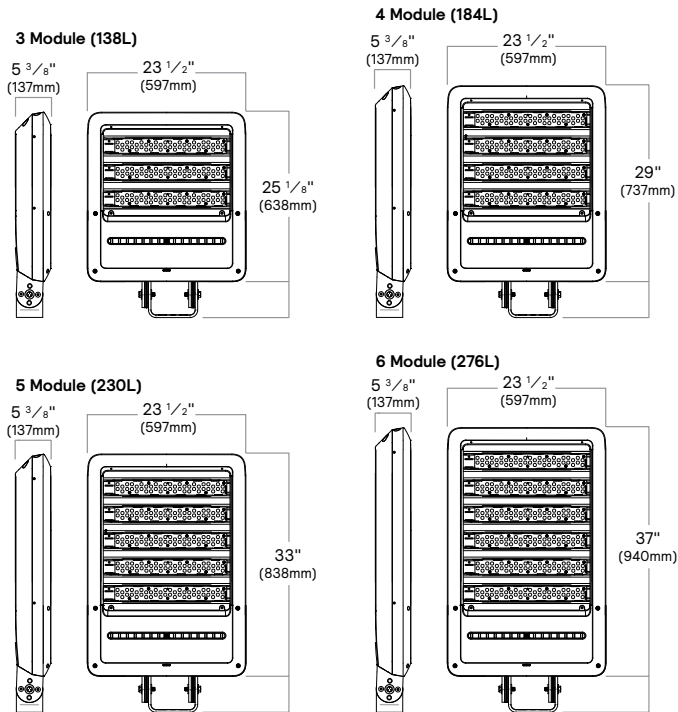
## Slipfitter Aiming Diagram



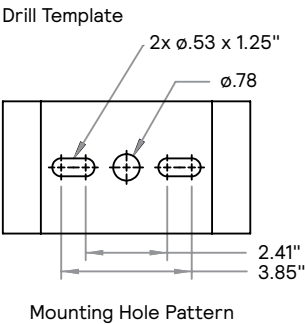
No. of Modules	Effective Projected Area (EPA-ft <sup>2</sup> )			Weight of single luminaire
	Single: 0° Aim	Single: 45° Aim	Single: 90° Aim	PFF SF
3	0.647	2.311	3.269	62 lbs (28.1 kg)
4	0.739	2.681	3.792	72 lbs (32.7 kg)
5	0.836	3.021	4.273	81 lbs (36.7 kg)
6	0.938	3.337	4.720	91 lbs (41.3 kg)

Note: Applies to single PFF luminaire with (SF) Slipfitter mount at the following angles: 0° is horizontal to ground, 90° is perpendicular to the ground as shown in drawings.

## Dimensions – Yoke Mount (YK)



## Yoke Mount Drill Template



No. of Modules	Effective Projected Area (EPA-ft <sup>2</sup> )			Weight of single luminaire
	Single: 0° Aim	Single: 45° Aim	Single: 90° Aim	PFF YK
3	0.596	2.232	3.156	66 lbs (29.9 kg)
4	0.688	2.601	3.679	76 lbs (34.5 kg)
5	0.786	2.942	4.161	86 lbs (39 kg)
6	0.887	3.257	4.607	94 lbs (42.6 kg)

Note: Applies to single PFF luminaire with (YK) Yoke mount at the following angles: 0° is horizontal to ground, 90° is perpendicular to the ground as shown in drawings.

# PFF PowerForm

## Floodlight

### Controls options

**DD:** 0-10V dimming driver with dimming wires externally accessible for connecting dimming controls by others.

**PCB:** Photocell button (a.k.a. button photoeye).

**TLRD7\*:** Twist Lock Receptacle with 7 pins enabling dimming and additional functionality (by others), can be used with an Interact City node, a twistlock photoelectric cell or a shorting cap. Can also be used with Signify or third party control system. Pins 6 and 7 are capped off (not connected) unless used with SR driver – ETO Specials, contact factory. Receptacle located on top of luminaire housing.

\* Use of photoelectric cell or shorting cap is required to ensure proper illumination.  
Note: Additional hardware will be required to utilize the additional 2 pins on this receptacle.

**TLRPC\*:** Twist Lock Receptacle with 5 pins and includes 3 pin twistlock photoelectric cell (must specify voltage). Receptacle located on top of luminaire housing.

\*Note: Maximum aiming angle is 45° with TLRD7 and TLRPC in order to maintain IP66 rating around the Twist Lock Receptacle; Light Engines and the rest of the luminaire maintain IP66 rating at all aiming angles. UL Wet Location rating is also maintained at all aiming angles. Use of photoelectric cell or shorting cap is required to ensure proper illumination. TLRD7 and TLRPC receptacle pins 4 & 5 are connected to dimming driver's dimming leads whenever no Dimming Controls are selected; if Dimming Controls are selected then receptacle pins 4 & 5 are capped off because driver's dimming leads are used with Dimming Controls.

**FAWS:** Field Adjustable Wattage Selector, pre-set to the highest position, can be easily switched in the field to the required position. This reduces total luminaire wattage consumption and reduces the light level – see the FAWS multiplier chart for more details.

Note: It is not recommended to use FAWS with other dimming or controls; if you do, set the switch to position 10 (maximum output) to enable the other dimming or controls. Switching FAWS to any position other than 10 will disable the other dimming or controls.

### Connected Lighting

Interact City connector node provides the plug and play wireless communications technology to connect your floodlight to the Interact City lighting management system. With Interact you can remotely manage, monitor and control all city lighting, from roads and streets, to parks and plazas, and bridges from one single system. Connected lighting enables capabilities including, accurate on/off switching, dimming control, fault reporting and integration with other systems to enable condition-based lighting. Interact provides you with a robust and scalable infrastructure to further reduce energy consumption, improve operations, and turn lighting into a connected network for your smart city journey.

For more details visit: <https://www.interact-lighting.com>

### Luminaire options

**F1:** Fusing Single (for 120, 277 or 347VAC)

**F2:** Fusing Double (for 208, 240 or 480VAC)

**F3:** Fusing Canadian Double Pole (for 208, 240 or 480VAC)

**FP1:** Fusing Pole Single (pole mounted near handhole, for 120, 277 or 347VAC)

**FP2:** Fusing Pole Double (pole mounted near handhole, for 208, 240 or 480VAC).

**FP3:** Fusing Pole Canadian Double Pole (pole mounted near handhole, for 208, 240 or 480VAC)

**SP2:** Surge Protection, 20kV/10kA. Surge protection device wired in parallel so that if it fails open the luminaire will remain lit/powerd on.

# PFF PowerForm

## Floodlight

### Specifications

#### Housing

Main body castings made of a low copper die cast Aluminum alloy (A360) for a high resistance to corrosion, 0.100" (2.5mm) minimum thickness. Side rail extrusions made of corrosion resistant low copper extruded anodized aluminum alloy (Anodized 6063-T5).

#### Mounting

Up tilt aiming and down tilt aiming possible with all of the mounting options.

cULus Listed as suitable for mounting within 4' or 1.2m of the ground

**SF:** Adjustable Slip Fitter with AWG 16-3 wires (or AWG 16-5 if DD external control options are selected) exiting through the Slip Fitter. Integral splice compartment for field wiring with cULus Wet Location rated access cover with seal around entire perimeter. Slip Fitter made of low copper die cast Aluminum alloy (A360) for a high resistance to corrosion, adjustable knuckle has 4 degree aiming increments with integral interlocking teeth and bolt to secure aiming in place, integral cast-in aiming marks. Fits on a 2-3/8" O.D. tenon.

**YK:** Adjustable Yoke with 9' (2.74m) of AWG 16-3 SEOW cord (or AWG 16-5 if DD external control options are selected) exiting the luminaire through IP66 rated cord seal. Customer-specified length or different cord type available - must contact factory prior to ordering, this is an ETO Special. Yoke made of high strength steel, galvanized and painted for high resistance to corrosion, 5 degree aiming increments with bolts to secure aiming in place.

#### Driver/Electrical Door

Removable die cast aluminum door made of a low copper die cast aluminum alloy (A360) for a high resistance to corrosion. Provides access to electronic components/LED drivers. Door secured with two captive screws outside of gasket perimeter. Includes a lanyard to prevent accidental dropping if access is required.

#### IP Rating

IP66 rated driver/electrical compartment and light engines in all aiming positions including up tilt aiming per ANSI C136.37 with seals around entire perimeter of the lenses and seal around entire perimeter of the driver/electrical compartment. IP66 rating including when PCB option is installed.

#### Light Engine

Composed of 4 main components: Heat Sink / LED Module / Optical System / Driver. Electrical components are RoHS compliant. LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

**Heat Sinks:** Heat sinks that are part of LED Modules are anodized 6063-T5 Aluminum for a high resistance to corrosion. Housing acts as heat sink for drivers, designed to ensure high efficacy and superior cooling by natural vertical convection. Air flow pattern always close to LEDs and driver optimizing their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling).

**LED Module:** Composed of high performance white LEDs. Color temperature as per ANSI/NEMA bin 3000K nominal (3045K +/- 175K) or 4000K nominal (3985K +/- 275K), both CRI 70 min.

**Optical System:** Choice of four distributions including Spot (SP), Asymmetric 33° Flood (A33), Rectangular Medium Flood (RM) distributions and a specialty distribution designed for Airport Apron (AIRP) applications featuring a wide 87° horizontal and narrow 16° vertical beam. Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance.

**IK Rating:** IK10 highest impact resistance rating for LED Module lenses.

**Driver:** High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min). Driver enables setting LED drive current to meet your specific total wattage consumption, lumen output and/or efficacy needs - ETO Specials, contact factory.

#### Integrated Features

Please note that these integrated features always come with this luminaire standard at no additional cost.

0-10V dimming driver included as standard, dimming leads pre-wired to Dimming Controls option except when DD external controls options are selected.

**SP1:** Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground. Enhanced surge protection device SP2 20kV/10kA available as an option. Surge protection device wired in parallel so that if it fails open the luminaire will remain lit/powering on.

#### Wiring

#2 - #14 AWG wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a time delay or slow blow fuse to avoid unnecessary and unwanted fuse blowing (false tripping) that can occur with fast acting fuses.

#### Hardware and Seals

All exposed screws shall be stainless and/or corrosion resistant and captive. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

#### Finish

Five standard textured colors: white, bronze, black, dark gray and medium gray. RAL and custom color matching available - must contact factory prior to ordering. Color in accordance with the AAMA 2604 standard. Application of polyester powder coat paint (2.5 mils/62.5 microns) with  $\pm 1$  mils/24 microns of tolerance. The thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

#### LED Products Manufacturing Standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with EC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

#### Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, exclusive Signify System Reliability Tool, Advance driver data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours with L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED color shift, LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

#### Vibration Resistance

Luminaire meets the ANSI C136.31-2018 specifications, tested by independent lab over 100,000 cycles in all three axes: Bridge/Overpass for 138L 3 modules, 184L 4 modules, 230L 5 modules; Normal for 276L 6 modules.

#### Certifications and Compliance

cULus Listed for Canada and USA, per UL1598 and UL8750, including suitable for mounting within 4' or 1.2m of the ground. Configurations are DesignLights Consortium qualified, consult DLC QPL Qualified Products List for more details. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .15, .21, .22, .24, .25, .31, .32, .37, .41. Entire luminaire is rated for operation in ambient temperature of -40°C (-40°F) up to +40°C (+104°F).

#### Limited Warranty

5-year limited warranty. See [signify.com/warranties](https://www.signify.com/warranties) for details and restrictions.