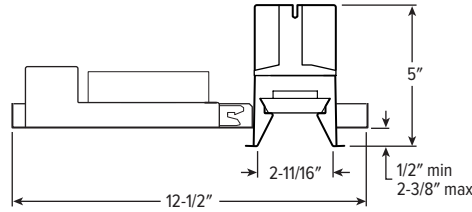


NEW CONSTRUCTION AND REMODEL



CATALOG #: \_\_\_\_\_

TYPE: \_\_\_\_\_

PROJECT: \_\_\_\_\_



## FEATURES

- Deliver scalable, data-driven smart buildings with PoE-enabled fixtures and controls

## SPECIFICATIONS

- HOUSING** – Die-cast aluminum trim housing with forged aluminum heat sink. Swing-out mounting arms field adjust for ceiling thickness from 1/2" – 2-3/8".
- OPEN REFLECTOR** – Low-iridescent anodized aluminum with top diffuser.
- LENSED TRIM** – Die-cast aluminum frame with micro-prismatic, acrylic lens. Diffuse acrylic lens standard with A Trim Type.
- ELECTRICAL** – High-performance Class 2 C.O.B. LED array. Modular quick-connect plug for easy field-connection of LED light assembly to node. Reported L70>55,000 hours. Reported L90>55,000 hours. Estimated L70 = 200,000 hours. Low-voltage DC fixture, to be fed by Class 2 power supply. Tunable White products use LEDs of multiple CCTs and may produce a perceptibly different shade of white from single-CCT products at the same CCT. All CCTs are within 3 MacAdam ellipses.
- MOUNTING** – Recessed. 20 ga. galvanized steel mounting pan for new construction or IC-rated enclosure. Minimum 12-1/2" O.C. marked spacing required for P20 and P23 static white, and P12 and P15 tunable white lumen packages when specified with R Mounting Type, and P15 static white lumen package when specified with S Distribution. Nodes cannot be mounted above hard ceilings.
- LISTINGS** –
  - cCSAus conforms to UL STD 1598; Certified to CAN/CSA STD C22.2 No. 250.0 for dry and damp locations. LED light assembly conforms to UL 2108 for remote installation.
  - Suitable for wet location under covered ceiling when specified with WET/CC option.
  - IC-rated for direct contact with insulation when specified with I Mounting Type.
  - City of Chicago Environmental Air approved when specified with CP option.
  - Complies with ASTM-E283 when specified with ATH option.
  - RoHS compliant.
  - Complies with the Buy American Act and other federal regulations. Request certification at [hew.com/baa](http://hew.com/baa).
- WARRANTY** – 5-year limited warranty, see [hew.com/warranty](http://hew.com/warranty).

## SYSTEM REQUIREMENTS

- PoE-ready luminaires are connected to building power systems through network integration and require other components for complete PoE lighting system.
- For additional PoE info, see [hew.com/poe](http://hew.com/poe).

ORDERING EXAMPLE: 2DS - P20/835 - OPTIONS - POE PR - LW - OF - WH - TRIM OPTIONS - N - F1

## HOUSING

SERIES	LUMENS <sup>[1]</sup>	CRI	CCT	OPTIONS	CONTROL <sup>[2]</sup>
2DS	P5 500lm P7 700lm P9 900lm P12 1,200lm P15 1,500lm P20 2,000lm P23 2,300lm	8 80 <sup>[3]</sup> 9 90 35 40 50 TW	27 2700K 30 3000K 35 3500K 40 4000K 50 5000K Tunable white (90 CRI, 2700K-5000K) <sup>[4]</sup>	ATH Airtight construction CP Chicago plenum (CCEA) <sup>[5]</sup>	POE PR Power over Ethernet-ready

## TRIM<sup>[6]</sup>

TRIM TYPE	DISTRIBUTION <sup>[7]</sup>	FLANGE TYPE	REFLECTOR FINISH	TRIM OPTIONS
L Flush lens O Open reflector R Regressed lens A Angled lens <sup>[8]</sup>	W 50° Wide M 30° Medium N 20° Narrow <sup>[9]</sup> S 14° Narrow spot <sup>[10]</sup> WW Wall wash <sup>[11]</sup>	OF 1/2" standard flange ZF Zero-flange mud-in <sup>[12]</sup>	Open trim types CS Clear semi-specular anodize SG Satin-glow anodize GD Gold anodize CG Champagne gold anodize PW Pewter anodize SPC Clear specular anodize RG Rose gold anodize	MWT Textured white trim flange <sup>[13]</sup> AD Diffuse acrylic lens <sup>[14]</sup> PD Diffuse 1/8" polycarbonate lens <sup>[15]</sup> WET/CC Wet location, covered ceiling listed <sup>[16]</sup> AM Anti-microbial <sup>[17]</sup>
			Lens trim types CS Clear semi-specular powder coat WH White texture powder coat BL Black texture powder coat MB Black texture splay with white flange <sup>[18]</sup>	

## MOUNTING

### MOUNTING TYPE<sup>[19]</sup>

- N Open pan for new construction
- I IC-rated enclosure for new construction<sup>[21]</sup>
- R Remodel kit<sup>[22]</sup>

### MOUNTING HARDWARE<sup>[20]</sup>

- F1 Integral 2-position fixed pan bracket, universal bar hanger included<sup>[23]</sup>
- BA1 Adjustable butterfly pan bracket, bar hanger not included<sup>[24]</sup>
- CA1 Adjustable caterpillar pan bracket, universal bar hanger included<sup>[25]</sup>

## NOTES

- Lumen output based on O Trim Type, W Distribution, and WH Reflector Finish, 80 CRI/3500K CCT for single CCT and 90 CRI/4000K CCT for TW. Actual performance may vary +/-5%, see page 2 for FIXTURE PERFORMANCE DATA.
- For additional PoE connection details, consult factory.
- Not available with tunable white.
- P15 lumen package max with W, M, and WW Distributions. P12 lumen package max with N Distribution. Not available with S Distribution.
- I Mounting Type required.
- Trim ships separately.
- Beam angle based on static white, L Trim Type and WH Reflector Finish. Trim Type affects beam angle. See page 2 for FIXTURE PERFORMANCE DATA.
- Available with WW Distribution only.
- P20 static white and P12 tunable white lumen packages max for N and R Mounting and P12 static white and P7 tunable white lumen packages max for I Mounting.
- Static white only. P15 lumen package max for N and R Mounting. P12 lumen package max for I Mounting. Not available with 950 CRI/CCT.
- A Trim Type only.
- For use with mud-in plaster construction only, supplied with mud flange installation kit. See page 4 for TRIM TYPE DETAILS. Not available with O Trim Type or ATH Option.
- Not available with L Trim Type, ZF Flange Type or WH Reflector Finish.
- W distribution only. Not available with O Trim Type.
- W and WW distributions only. Not available with O Trim Type.
- Not available with O Trim Type. Not available with PD trim option.
- WH and BL Reflector Finishes only.
- R Trim Type only. Not available with ZF Flange Type or MWT.
- Mounting hardware required (N and I only), ordered separately, see MOUNTING HARDWARE ordering info. See page 5 for MOUNTING TYPE DETAILS.
- Additional mounting hardware options available. See page 5 for MOUNTING HARDWARE DETAILS.
- P15 static white and P9 tunable white lumen packages max.
- Also used in new construction sheetrock ceilings. Pan-less installation.
- N and I Mounting Types only. I Mounting requires external brackets.
- N Mounting Type only.
- N Mounting Type only.



### FIXTURE PERFORMANCE DATA

STATIC WHITE (See page 3 for tunable white data)

	DISTRIBUTION	WATTAGE	FLUSH LENS TRIM TYPE		OPEN REFLECTOR TRIM TYPE		REGRESSED LENS TRIM TYPE		ANGLED LENS TRIM TYPE	
			DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)
P5	W	4.2	526	125	381	91	530	126	–	–
	M	4.2	528	126	361	86	520	124	–	–
	N	4.2	511	122	372	89	511	122	–	–
	S	5.4	607	112	435	80	609	113	–	–
	WW	4.2	–	–	–	–	–	–	407	97
P7	W	5.9	720	122	521	88	725	123	–	–
	M	5.9	722	122	494	84	711	121	–	–
	N	5.9	699	118	509	86	699	119	–	–
	S	7.6	789	104	565	74	792	104	–	–
	WW	5.9	–	–	–	–	–	–	557	94
P9	W	7.9	928	117	672	85	935	118	–	–
	M	7.9	931	118	637	81	917	116	–	–
	N	7.9	901	114	656	83	901	114	–	–
	S	11.1	1085	98	777	70	1089	98	–	–
	WW	7.9	–	–	–	–	–	–	718	91
P12	W	11.5	1292	112	936	81	1302	113	–	–
	M	11.5	1296	113	886	77	1277	111	–	–
	N	11.5	1254	109	914	79	1255	109	–	–
	S	15.3	1345	88	963	63	1349	88	–	–
	WW	11.5	–	–	–	–	–	–	1000	87
P15	W	14.7	1602	109	1160	79	1614	110	–	–
	M	14.7	1607	109	1099	75	1583	108	–	–
	N	14.7	1555	106	1133	77	1556	106	–	–
	S	22.7	1783	79	1276	56	1789	79	–	–
	WW	14.7	–	–	–	–	–	–	1240	84
P20	W	20.6	2104	102	1523	74	2119	103	–	–
	M	20.6	2110	102	1443	70	2079	101	–	–
	N	20.6	2042	99	1488	72	2043	99	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	20.6	–	–	–	–	–	–	1628	79
P23	W	23.7	2326	98	1983	84	2343	99	–	–
	M	23.7	2333	98	1596	67	2298	97	–	–
	N	–	–	–	–	–	–	–	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	23.7	–	–	–	–	–	–	1800	76

### MULTIPLIER TABLES

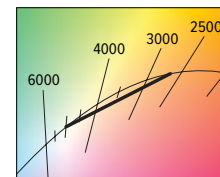
	COLOR TEMPERATURE		
	CCT	LUMENS	
		STANDARD	TUNABLE WHITE
80 CRI	2700K	0.92	–
	3000K	0.98	–
	3500K	1.00	–
	4000K	1.01	–
	5000K	1.02	–
90 CRI	2700K	0.76	0.87
	3000K	0.79	0.96
	3500K	0.82	1.02
	4000K	0.84	1.00
	5000K	0.88	1.02

	REFLECTOR FINISH	
	CATALOG NUMBER	CONVERSION FACTOR
O TRIM	CS	1.00
	SG <sup>1</sup>	0.92
	GD	0.93
	CG	0.96
	PW	0.86
	SPC	1.02
	RG	0.88
R TRIM	WH	1.00
	CS	0.98
	BL	0.79

TRIM OPTIONS	
CATALOG NUMBER	CONVERSION FACTOR
AD	0.85
PD	0.85

### BEAM ANGLE

	TRIM TYPE		
	FLUSH	OPEN	REGRESSED
W	50°	50°	55°
M	30°	47°	30°
N	20°	47°	20°
S	14°	43°	14°



- Distribution will also be affected, consult factory.
- Photometrics tested in accordance with IESNA LM-79. Results based on CS (O Trim Type) or WH (L, R and A Trim Types) reflector finish, W distribution and 25°C ambient temperature. Static white results based on 80 CRI/3500K CCT. Tunable white results based on 90 CRI/4000K CCT. Actual performance may vary +/-5%.
- Wattage and efficacy data shown do not account for node losses.
- Beam angle based on static white, L Trim Type and WH Reflector Finish.
- Use multiplier tables to calculate additional options.

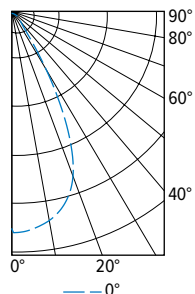


TUNABLE WHITE (See page 2 for static white data)

	DISTRIBUTION	WATTAGE	FLUSH LENS TRIM TYPE		OPEN REFLECTOR TRIM TYPE		REGRESSED LENS TRIM TYPE		ANGLED LENS TRIM TYPE	
			DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)	DELIVERED LUMENS	EFFICACY (lm/W)
P5	W	7.3	581	80	421	58	586	80	–	–
	M	7.3	609	83	416	57	600	82	–	–
	N	7.3	552	76	402	55	553	76	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	7.3	–	–	–	–	–	–	450	62
P7	W	10.1	776	77	562	56	782	77	–	–
	M	10.1	813	80	556	55	801	79	–	–
	N	10.1	737	73	537	53	738	73	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	10.1	–	–	–	–	–	–	601	59
P9	W	14.6	1083	74	784	54	1091	75	–	–
	M	14.6	1134	78	776	53	1117	77	–	–
	N	14.6	1029	70	750	51	1030	71	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	14.6	–	–	–	–	–	–	838	57
P12	W	19.3	1332	69	964	50	1342	70	–	–
	M	19.3	1395	72	954	49	1374	71	–	–
	N	19.3	1265	66	922	48	1266	66	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	19.3	–	–	–	–	–	–	1031	53
P15	W	23.7	1491	63	1080	46	1502	63	–	–
	M	23.7	1562	66	1068	45	1538	65	–	–
	N	–	–	–	–	–	–	–	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	23.7	–	–	–	–	–	–	1154	49
P20	W	–	–	–	–	–	–	–	–	–
	M	–	–	–	–	–	–	–	–	–
	N	–	–	–	–	–	–	–	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	–	–	–	–	–	–	–	–	–
P23	W	–	–	–	–	–	–	–	–	–
	M	–	–	–	–	–	–	–	–	–
	N	–	–	–	–	–	–	–	–	–
	S	–	–	–	–	–	–	–	–	–
	WW	–	–	–	–	–	–	–	–	–

### PHOTOMETRY

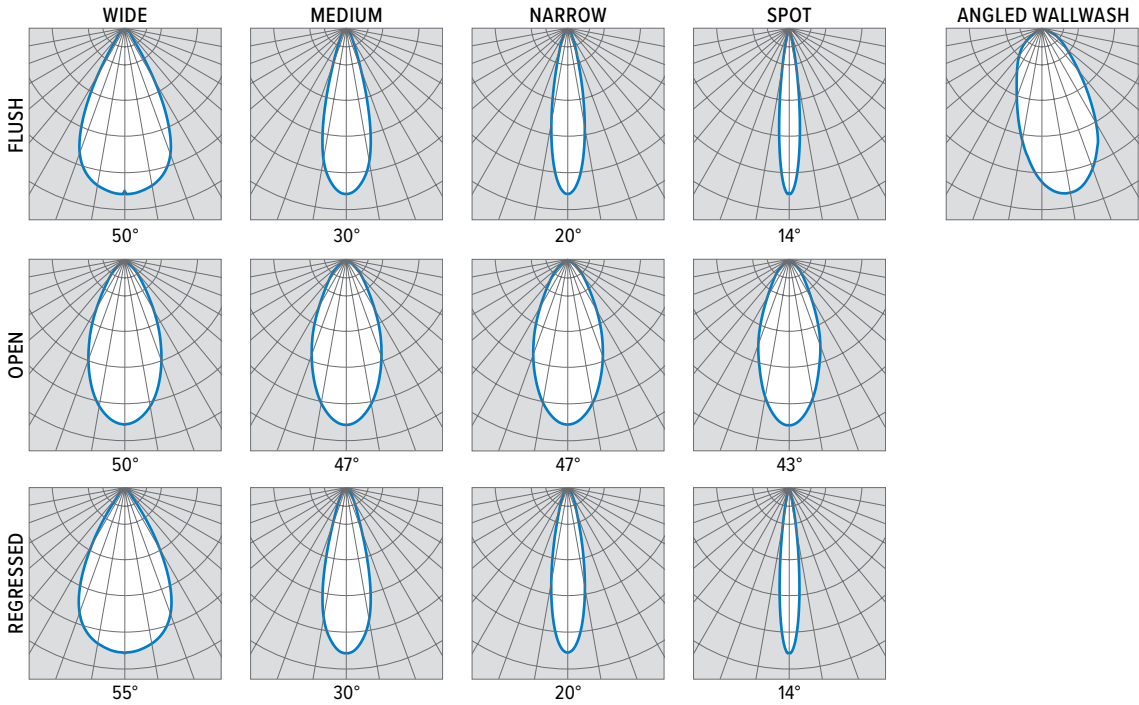
2DS-P15/835-POE PR-LW-OF-WH Total Luminaire Output: 1602 lumens; 14.7 Watts | Efficacy: 109 lm/W | 80 CRI; 3500K CCT



CANDLEPOWER DISTRIBUTION	VERTICAL ANGLE	HORIZONTAL ANGLE	ZONAL LUMENS
		0°	
	0	1852	
	5	1869	173
	15	1690	464
	25	1065	496
	35	269	227
	45	109	97
	55	72	68
	65	46	47
	75	22	24
	85	5	5
	90	0	

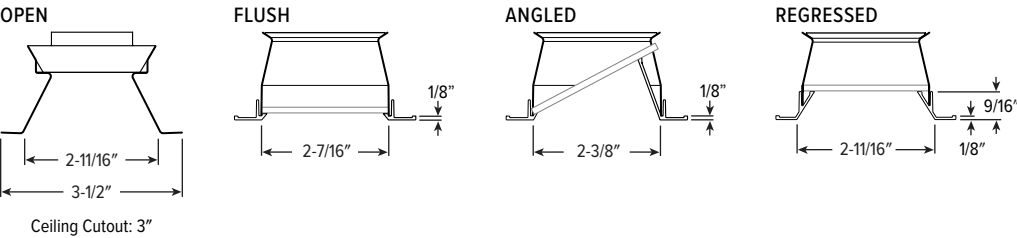
LUMEN SUMMARY	ZONE	LUMENS	% FIXTURE
	0 - 40	1360	85
	0 - 60	1526	95
	0 - 90	1602	100
	0-180	1602	100



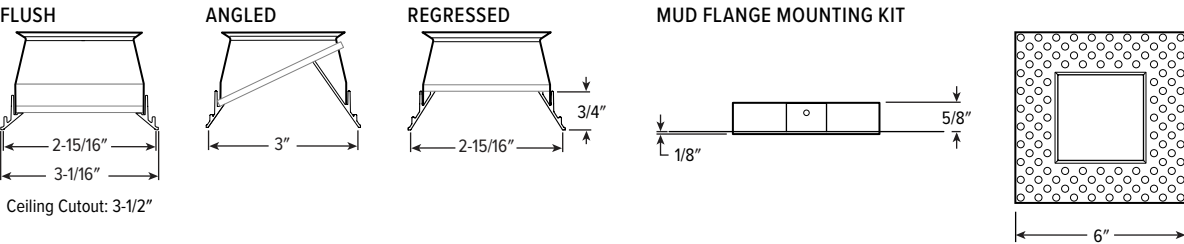


TRIM TYPE DETAILS

1/2" STANDARD FLANGE TYPE



ZERO-FLANGE MUD-IN

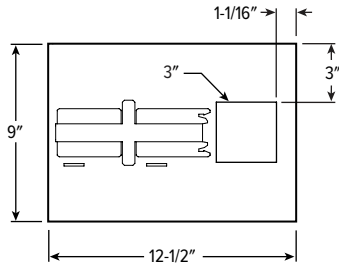


REFLECTOR FINISH DETAILS

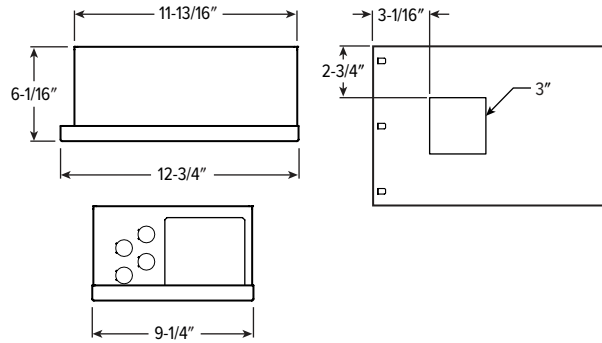
SPC	SG	PW	GD	CG	RG	CS	WH	BL
Clear specular	Satin glow	Pewter	Gold	Champagne gold	Rose gold	Clear semi-specular	White	Black

## MOUNTING TYPE DETAILS

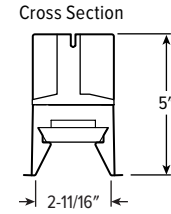
### NEW CONSTRUCTION



### IC-RATED

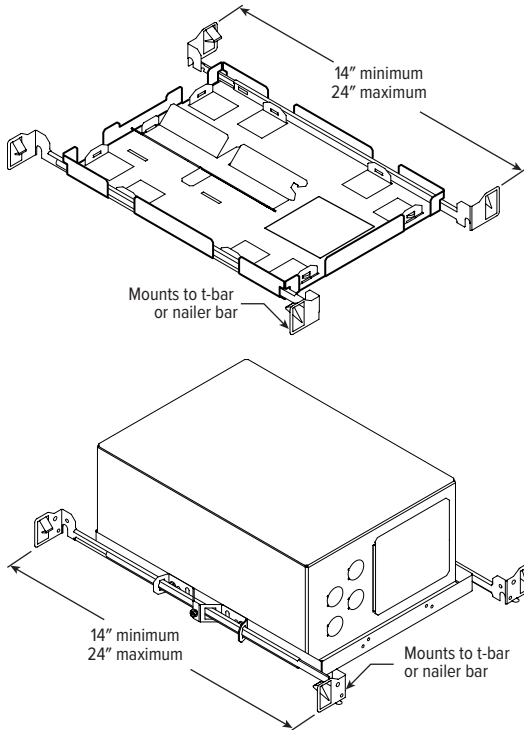


### REMODEL



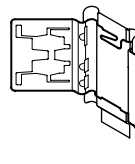
## MOUNTING HARDWARE DETAILS

**F1** Integral 2-position fixed pan bracket, universal bar hanger included

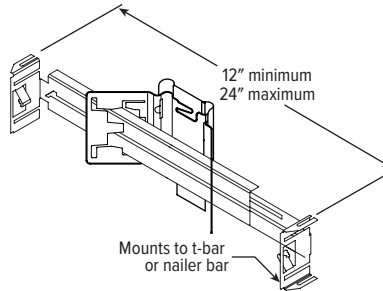


F1 with I Mounting Type

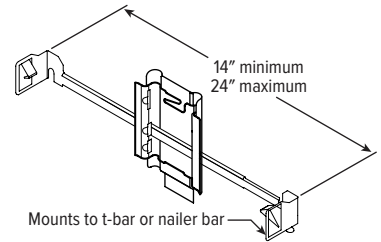
**BA1** Adjustable butterfly pan bracket, bar hanger not included (N Mounting Type only)



**BA2** Adjustable butterfly pan bracket, heavy-duty universal bar hanger included (N Mounting Type only)



**CA1** Adjustable caterpillar pan bracket, universal bar hanger included (N Mounting Type only)



**CA2** Adjustable caterpillar pan bracket, t-bar hanger included (N Mounting Type only)

