

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

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

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

## NEW CONSTRUCTION AND REMODEL

### FEATURES

- Available with BIOS® SkyBlue® technology to support proper daytime circadian stimulus
- Zero-flange trim options for modern ceiling
- Beam angles ranging from 14° spot to 50° wide for tailored performance
- Die cast trim choices
- Spring clip retention system eliminates trim sag

### SPECIFICATIONS

- HOUSING** – Die-cast aluminum trim housing with forged aluminum heat sink. Galvanized steel splice compartment with driver mounting plate/enclosure. 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, tempered glass 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 driver. Reported L70>55,000 hours. Reported L90>55,000 hours. Estimated L70 = 200,000 hours.
- 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 L20 and L25 lumen packages when specified with R Mounting Type and L15 lumen package when specified with S Distribution.
- LISTINGS** –
  - cCSAus conforms to UL STD 1598; Certified to CAN/CSA STD C22.2 No. 250.0 for 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.
  - ENERGY STAR® certified in select configurations, see [www.energystar.gov](http://www.energystar.gov)
  - 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.
  - Title 24 (JA8) compliant in select configurations, see [energy.ca.gov](http://energy.ca.gov)
- WARRANTY** – 5-year limited warranty, see [hew.com/warranty](http://hew.com/warranty).

ORDERING EXAMPLE: 2DS - L20/835 - OPTIONS - DIM - UNV - LW - OF - WH - TRIM OPTIONS - N - F1

### HOUSING

SERIES	LUMENS <sup>[1]</sup>	CRI	CCT	OPTIONS	CONTROL <sup>[2]</sup>	VOLTAGE
2DS	L5	500lm	8 80	ATH	DIM Dimming driver, 0-10V	UNV 120-277V 347 347V <sup>[7]</sup>
	L7	700lm	9 90 <sup>[3]</sup>	F Fuse kit		
	L9	900lm		SDT Stepdown transformer <sup>[4]</sup>	DIM1 1% Dimming driver, 0-10V <sup>[6]</sup>	
	L12	1,200lm		CP Chicago plenum (CCEA) <sup>[5]</sup>		
	L15	1,500lm				
	L20	2,000lm				
L25	2,500lm			EM/5W 5-watt emergency battery <sup>[8]</sup> EM/7W 7-watt emergency battery <sup>[9]</sup> EM/10W 10-watt emergency battery <sup>[9]</sup> EM/10W/RTS 10-watt emergency battery with regressed test switch <sup>[11]</sup>		

### TRIM<sup>[12]</sup>

TRIM TYPE	DISTRIBUTION <sup>[13]</sup>	FLANGE TYPE	REFLECTOR FINISH	TRIM OPTIONS
L Flush lens	W 50° Wide	OF 1/2" standard flange	<b>Open trim types</b>	MWT Textured white trim flange <sup>[19]</sup>
O Open reflector	M 30° Medium	ZF Zero-flange mud-in <sup>[18]</sup>	CS Clear semi-specular anodize	AD Diffuse acrylic lens <sup>[20]</sup>
R Regressed lens	N 20° Narrow <sup>[15]</sup>		SG Satin-glow anodize	PD Diffuse 1/8" polycarbonate lens <sup>[21]</sup>
A Angled lens <sup>[14]</sup>	S 14° Narrow spot <sup>[16]</sup>		GD Gold anodize	WET/CC Wet location, covered ceiling listed <sup>[22]</sup>
	WW Wall wash <sup>[17]</sup>		CG Champagne gold anodize	AM Anti-microbial <sup>[23]</sup>
			<b>Lens trim types</b>	
			CS Clear semi-specular powder coat	
			WH White texture powder coat	
			BL Black texture powder coat	
			MB Black texture splay with white flange <sup>[24]</sup>	

### MOUNTING

#### MOUNTING TYPE<sup>[25]</sup>

- N Open pan for new construction
- I IC-rated enclosure for new construction<sup>[27]</sup>
- R Remodel kit<sup>[28]</sup>

#### MOUNTING HARDWARE<sup>[26]</sup>

- F1 Integral 2-position fixed pan bracket, universal bar hanger included<sup>[29]</sup>
- BA1 Adjustable butterfly pan bracket, bar hanger not included<sup>[30]</sup>
- CA1 Adjustable caterpillar pan bracket, universal bar hanger included<sup>[31]</sup>

### NOTES

- Lumen output based on L trim type, W distribution and WH finish, 3500K/80CRI. Actual lumens may vary +/-5%, see page 2 for FIXTURE PERFORMANCE DATA
- See page 3 for ADDITIONAL CONTROL OPTIONS.
- Extended lead times may apply. Consult factory for availability.
- May be required for 347V, see product builder at [hew.com/product-builder](http://hew.com/product-builder)
- I Mounting Type required.
- L9 minimum lumen package required
- Not available with EM batteries or DMX controls.
- N and R Mounting Types only.
- L9 minimum lumen package required. N and R Mounting Types only.
- L12 minimum lumen package required. N and R Mounting Types only.
- L12 minimum lumen package required. Not available with WET/CC or ATH options. N Mounting Type only. Top access required. See page 5 for EM BATTERY DETAILS.
- Trim ships separately
- Beam angle based on L Trim Type and WH Reflector Finish. Trim Type affects beam angle. See page 2 for FIXTURE PERFORMANCE DATA.
- Available with WW Distribution only.
- L20 lumen package max for N and R Mounting. L12 lumen package max for I Mounting.
- L15 lumen package max for N and R Mounting. L12 lumen package max for I Mounting. Not available with 950 CRI/CC.
- 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 ZF Flange Type or WH Reflector Finish.
- W distribution only. Not available with O Trim Type.
- W distribution only. Not available with O Trim Type.
- Not available with O Trim Type.
- 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 4 for MOUNTING TYPE DETAILS.
- Additional mounting hardware options available. See page 5 for MOUNTING HARDWARE DETAILS.
- L15 lumen package max.
- Also used in new construction sheetrock ceilings. Additional plenum space required for R mounting when specified with EM battery. See page 5 for EM BATTERY DETAILS.
- N and I Mounting Types only. I Mounting requires external brackets.
- N Mounting Type only
- N Mounting Type only



Available with BIOS® consult factory



### FIXTURE PERFORMANCE DATA

	DISTRIBUTION	FLUSH LENS TRIM TYPE			OPEN REFLECTOR TRIM TYPE			REGRESSED LENS TRIM TYPE			ANGLED LENS TRIM TYPE		
		DELIVERED LUMENS	WATTAGE	EFFICACY (lm/W)	DELIVERED LUMENS	WATTAGE	EFFICACY (lm/W)	DELIVERED LUMENS	WATTAGE	EFFICACY (lm/W)	DELIVERED LUMENS	WATTAGE	EFFICACY (lm/W)
L5	W	526	6.6	80	381	7.2	53	530	6.5	81	–	–	–
	M	528	6.6	81	361	7.2	50	520	6.6	79	–	–	–
	N	511	6.5	78	372	7.2	52	511	6.5	78	–	–	–
	S	607	7.8	78	435	7.8	56	609	7.8	78	–	–	–
	WW	–	–	–	–	–	–	–	–	–	–	407	6.7
L7	W	739	8.5	87	535	9.3	58	745	8.5	88	–	–	–
	M	742	8.5	87	507	9.3	55	731	8.5	86	–	–	–
	N	718	8.5	84	523	9.3	56	718	8.5	84	–	–	–
	S	848	11.2	76	607	11.2	54	850	11.2	76	–	–	–
	WW	–	–	–	–	–	–	–	–	–	–	572	8.7
L9	W	947	10.5	90	686	11.4	60	954	10.5	91	–	–	–
	M	950	10.5	91	650	11.4	57	936	10.5	89	–	–	–
	N	920	10.5	88	670	11.4	59	920	10.5	88	–	–	–
	S	1085	14.1	77	777	14.1	55	1089	14.1	77	–	–	–
	WW	–	–	–	–	–	–	–	–	–	–	733	10.8
L12	W	1292	14.0	92	936	15.3	61	1302	14.0	93	–	–	–
	M	1296	14.0	93	886	15.3	58	1277	14.0	91	–	–	–
	N	1254	14.0	90	914	15.3	60	1255	14.0	90	–	–	–
	S	1440	20.4	71	1031	20.4	51	1445	20.4	71	–	–	–
	WW	–	–	–	–	–	–	–	–	–	–	1000	14.4
L15	W	1602	17.3	92	1160	17.3	67	1614	17.3	93	–	–	–
	M	1607	17.3	93	1099	17.3	64	1583	17.3	91	–	–	–
	N	1555	17.3	90	1133	17.3	65	1556	17.3	90	–	–	–
	S	1783	26.7	67	1276	26.7	48	1789	26.6	67	–	–	–
	WW	–	–	–	–	–	–	–	–	–	–	1240	17.8
L20	W	2104	23.4	90	1523	25.6	60	2119	23.4	91	–	–	–
	M	2110	23.4	90	1443	25.6	56	2079	23.4	89	–	–	–
	N	2042	23.4	87	1488	25.6	58	2043	23.4	87	–	–	–
	S	–	–	–	–	–	–	–	–	–	–	–	–
	WW	–	–	–	–	–	–	–	–	–	–	1628	24.0
L25	W	2528	29.5	86	2155	32.2	67	2547	29.4	87	–	–	–
	M	2536	29.5	86	1734	32.2	54	2498	29.5	85	–	–	–
	N	–	–	–	–	–	–	–	–	–	–	–	–
	S	–	–	–	–	–	–	–	–	–	–	–	–
	WW	–	–	–	–	–	–	–	–	–	–	1957	30.3

### MULTIPLIER TABLES

	COLOR TEMPERATURE	
	CCT	CONVERSION FACTOR
80 CRI	2700K	0.92
	3000K	0.98
	3500K	1.00
	4000K	1.01
	5000K	1.02
90 CRI	2700K	0.76
	3000K	0.79
	3500K	0.82
	4000K	0.84
	5000K	0.88

	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 <sup>1</sup>	0.89
	BL <sup>1</sup>	0.47
	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 shown are based on 25°C ambient temperature.
  - Wattage shown is based on 120V input.
  - Results based on 3500K/80CRI and CS (O Trim Type) or WH (L, R and A Trim Types) Reflector Finish. Actual lumens may vary +/-5%.
  - Beam angle based on L Trim Type and WH Reflector Finish.
  - Use multiplier tables to calculate additional options.

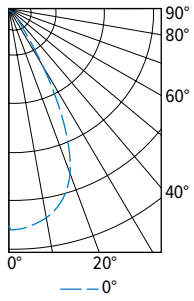


# 2DS LED

## 2" Downlight – Square

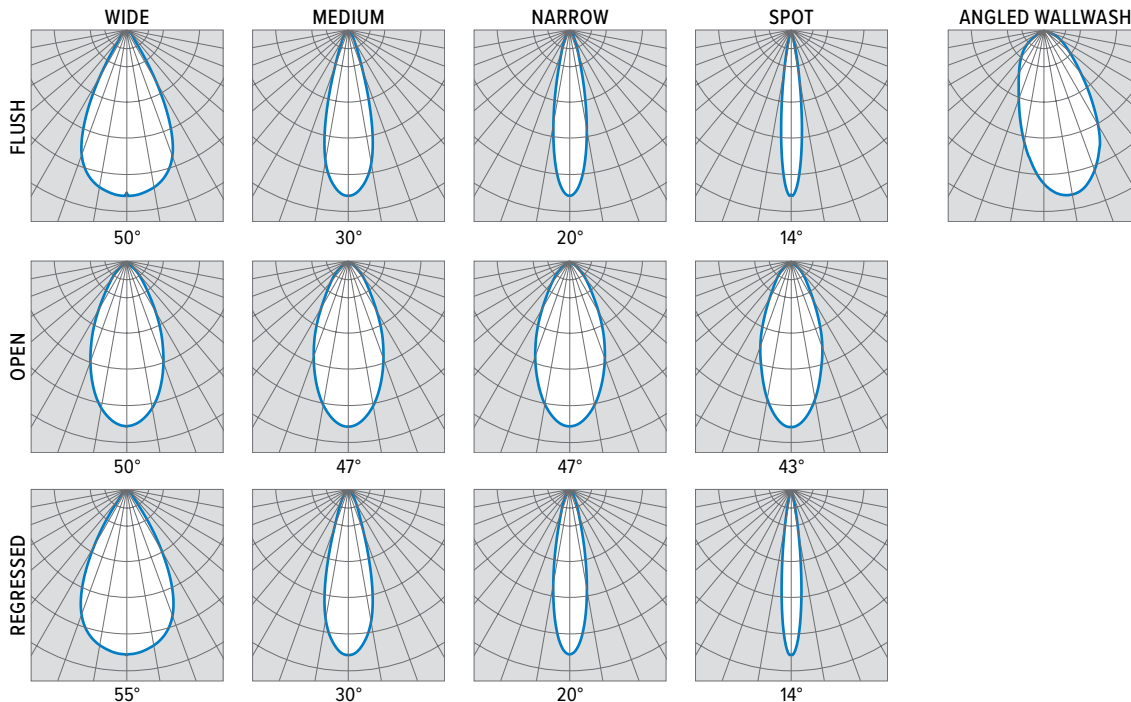
### PHOTOMETRY

2DS-L15/835-DIM-UNV-LW-OF-WH Report #: 13257153; 03/11/20 | Total Luminaire Output: 1602 lumens; 17.3 Watts | Efficacy: 92.5 lm/W | 80 CRI; 3500K CCT



CANDLEPOWER DISTRIBUTION	VERTICAL ANGLE	HORIZONTAL ANGLE	ZONAL LUMENS
		0°	
	0	1852	
	5	1869	129
	15	1690	259
	25	1065	225
	35	269	83
	45	109	43
	55	72	32
	65	46	21
	75	22	9
	85	5	1
	90	0	

LUMEN SUMMARY	ZONE	LUMENS	% FIXTURE
	0 - 40	1361	85
	0 - 60	1526	95
	0 - 90	1601	100
	0-180	1602	100



### ADDITIONAL CONTROL OPTIONS

Lumen restrictions apply: L9 minimum for DIM LINE driver when specified with W, M, or N distributions; L7 minimum when specified with S distribution. 347V may require stepdown transformer, see product builder at [hew.com/product-builder](http://hew.com/product-builder). R Mounting Type only available with DIM, DIM1, and DIM LINE controls.

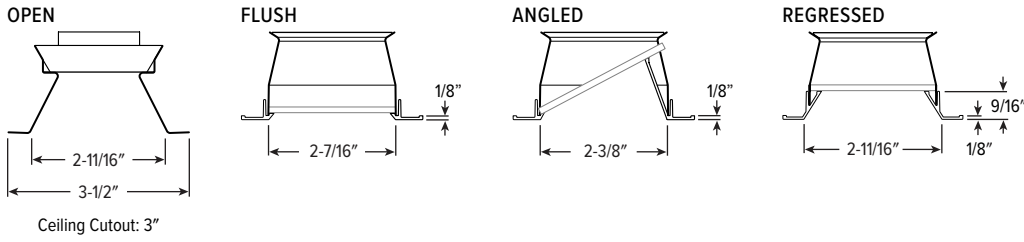
CATALOG NUMBER	DESCRIPTION
DIM	Dimming driver prewired for 0-10V low voltage applications
DIM1	1% dimming driver prewired for 0-10V low voltage applications
DIM LINE	Line voltage dimming driver (TRIAC and ELV compatible at 120V only)
DMX	0.1% dimming driver for DMX controls
LTE LINE	Lutron Hi-lume 1% 2-wire dimming driver forward phase line voltage controls (120V only)
LDE1	Lutron Hi-lume 1% EcoSystem dimming LED driver
LDE5	Lutron 5-Series 5% EcoSystem dimming LED driver
VRF/DBI/LDE1	Lutron Vive integral fixture control, RF only (DFCSJ-OEM-RF), Lutron Hi-lume 1% EcoSystem dimming LED driver, and digital link interface
VRF/DBI/LDE5	Lutron Vive integral fixture control, RF only (DFCSJ-OEM-RF), Lutron 5-Series 5% EcoSystem dimming LED driver, and digital link interface
FCJS/DIM	Lutron Vive PowPak wireless fixture control with dimming driver
FCJS/DIM1	Lutron Vive PowPak wireless fixture control with 1% dimming driver
ELDO SOLOB	EldoLED Solodrive, 0.1% dimming driver for 0-10V controls
ELDO SOLOB DALI	EldoLED Solodrive, 0.1% dimming driver for DALI controls
ELDO ECO1	EldoLED Ecodrive, 1% dimming driver for 0-10V controls
ELDO ECO1 DALI	EldoLED Ecodrive, 1% dimming driver for DALI controls



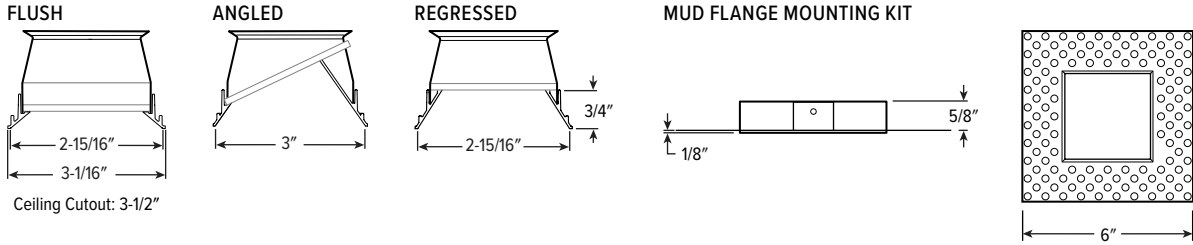
# 2DS LED 2" Downlight – Square

## TRIM TYPE DETAILS

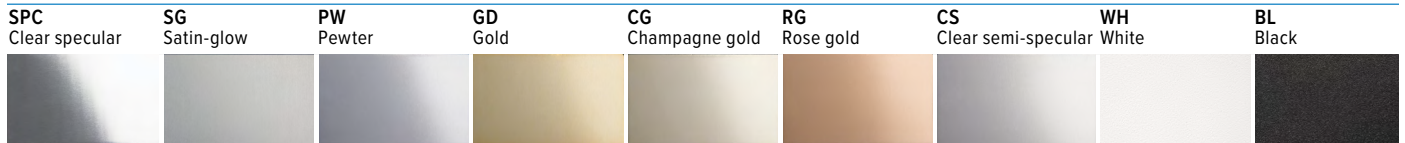
### 1/2" STANDARD FLANGE TYPE



### ZERO-FLANGE MUD-IN

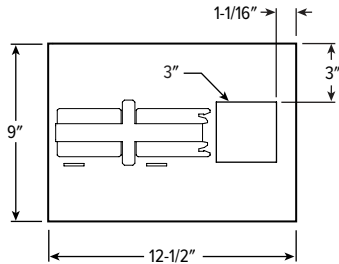


## REFLECTOR FINISH DETAILS

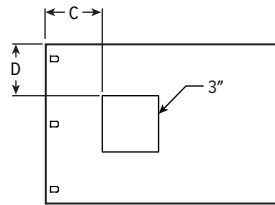
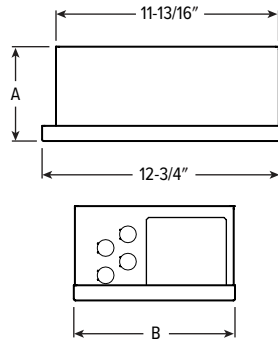


## MOUNTING TYPE DETAILS

### NEW CONSTRUCTION

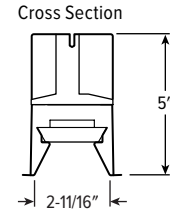


### IC-RATED

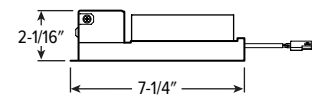


	DIM, DIM1, DIM LINE	ALL OTHER CONTROLS
A	5"	6-1/16"
B	8-9/16"	9-1/4"
C	3-1/16"	6-11/16"
D	2-3/4"	3-1/8"

### REMODEL



### Driver and Junction Box



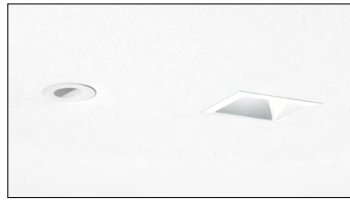
## EM BATTERY DETAILS

### REMODEL MOUNTING

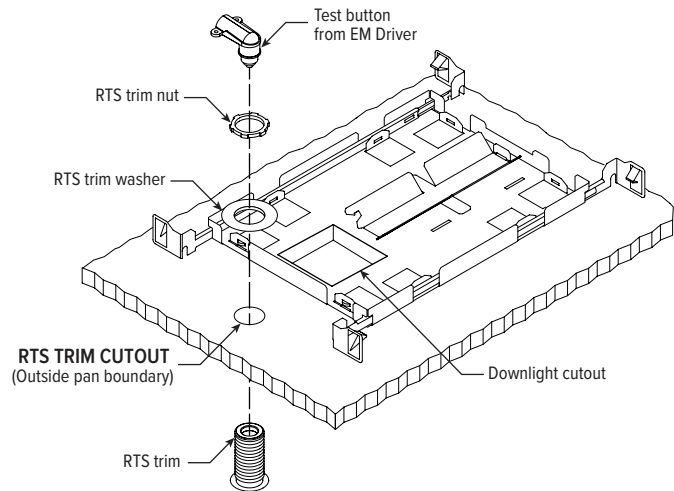
Additional plenum space required for R mounting when specified with EM battery.

PLENUM RESTRICTIONS	
CATALOG NUMBER	MINIMUM HEIGHT
EM/5W	7"
EM/7W	9"
EM/10W	11"

### EM/10W/RTS MOUNTING

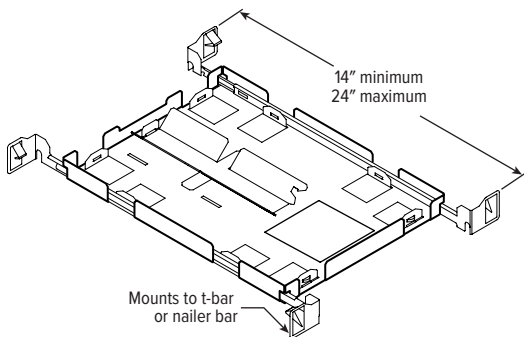


Shown Installed

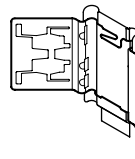


## MOUNTING HARDWARE DETAILS

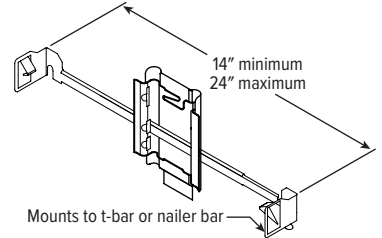
**F1** Integral 2-position fixed pan bracket, universal bar hanger included



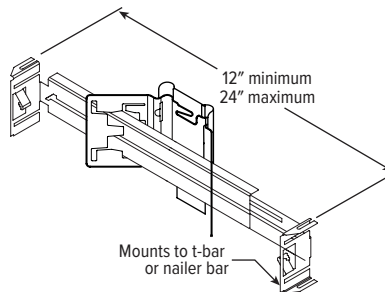
**BA1** Adjustable butterfly pan bracket, bar hanger not included (N Mounting Type only)



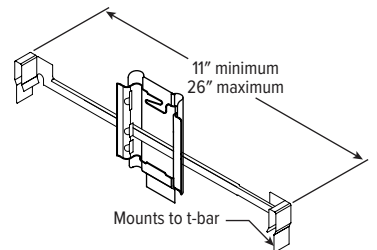
**CA1** Adjustable caterpillar pan bracket, universal bar hanger included (N Mounting Type only)



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



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



F1 with I Mounting Type

