

Hornet® HP

Square Downlights



PROJECT:

TYPE:

Features

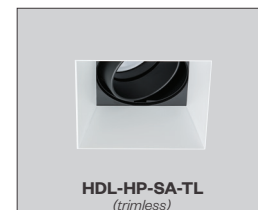
Small in size but big on performance. The Hornet® downlights deliver the output of the 20W ceramic metal halide, but with the control and crisp color of the MR16 halogen. 3.5" square trim available as a fixed downlight, adjustable or pinhole adjustable aperture. Remodeler, Trimless and Millwork options available.

Product Overview

Type: Recessed Square Downlight
Wattage: 13W, 18W, 20W
Color Temp: 2200K, 2700K, 3000K, 3500K, 4000K
CRI: 83 typ. (2700K, 3000K, 3500K, 4000K)
90+ typ. (2200K, 2700K, 3000K, 3500K, 4000K)
CrispWhite (18W max) & 3K Class A available
Dimming: Wired: TRIAC & ELV, Hi-lume®, 0-10V, DALI
Wireless: Lutron Athena RF node, BubblyNet Bluetooth



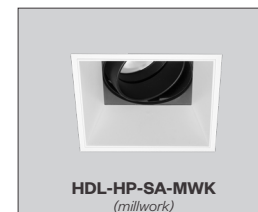
HDL-HP-SA



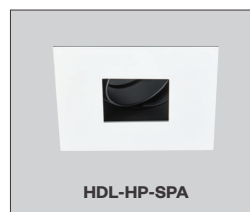
HDL-HP-SA-TL
(trimless)



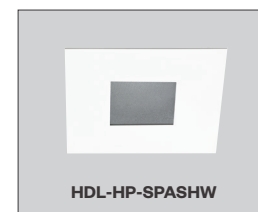
HDL-HP-SD



HDL-HP-SA-MWK
(millwork)



HDL-HP-SPA



HDL-HP-SPASHW

Certifications



Fixture Summary

Fixture Type

Round/Square	New Construction	Remodeler	Trim	Trimless	Millwork
Yes	Yes	Yes	Yes	Yes	Yes

See separate spec sheet for Round trims.

Performance Data

Watts	Delivered Lumens	LPW	CBCP	Color Temp-CRI
13	848	65	8,127	3000K-83
18	1175	65	11,253	3000K-83
20	1305	65	12,503	3000K-83

Data is based on 3000K-83 120V IES files available on website.

Data is based on Spot optics, See pg 8-11 for other performance data.

All wattages and LPW's include 2W for thermal protector.

Electrical Data

	13W		18W		20W	
Voltage	System Watts	Amps	System Watts	Amps	System Watts	Amps
120V	13	0.11	18	0.15	20	0.17
277V	13	0.05	18	0.06	20	0.07

Electronic constant current LED driver.

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PROJECT:

TYPE:

Ordering Information - Housing/Frame

1	2	3	4	5	6
1 Model	2 Style	3 Wattage	4 Voltage	5 Driver (for non-dimming, select LE/TE option)	6 Options/Accessories
<u>For New Construction</u> HDL-HP-S-NC-A17 (New Construction) HDL-HP-S-CP-A17 (Chicago Plenum (CCEA) housing) HDL-HP-S-IC-A17 (Insulated Ceiling/air tight, 13W & 18W only) <u>For Existing Ceilings</u> HDL-HP-S-REM-A17 (Remodeler)	T trimmed TL trimless MWK^R millwork (for 1/2" - 11/16" ceiling thickness) MWK1^R millwork (for 3/4" - 1-1/2" ceiling thickness) MWK2^R millwork (for 1-1/2" - 2" ceiling thickness) ^R Not available for use with Remodeler model	13 18 20 (not available for use with IC housing)	120 277 120/277 (for use with IC housing only)	<u>Wired</u> LE/TE TRIAC/ELV dimming HILUME-H-ECO - Lutron LDE1 Hi-lume® 1% dim Soft-On/Fade-to-Black 0-10V 0-10V dimming, 1% dim DALI DALI dimming, 1% dim <u>Wireless</u> AWN-R-010* Lutron Athena wireless node, RF only, 0-10V BN-BT-010* BubblyNet Bluetooth node, 0-10V * Consult factory for lead time.	EM - emergency battery pack with remote test switch (not available for use with REM, CP or IC options) HB49 - hanger bars from min 29" to max 49" (not available for use with REM options) Note: 26" hanger bars are included as standard. Choose HB49 option above for larger mounting spaces only.

Ordering Information - Trim

1	2	3	4	5	6
1 Model	2 Style	3 Finish	4 Beam Spread	5 Color Temp	6 Options/Accessories
HDL-HP-SD-A17 (downlight) HDL-HP-SA-A17 (adjustable) HDL-HP-SPA-A17 (pinhole adjustable) HDL-HP-SPASHW-A17 (shower, not available in trimless)	T trimmed TL trimless (not available for use with SPASHW trim) MWK millwork (not available for use with SPASHW trim)	<u>RD/RA Trims</u> <u>Trimmed</u> MBW matte black, white flange MWW matte white, white flange SLVW matte silver, white flange MBB matte black, black flange SLVS matte silver, silver flange <u>RPA/RPAS/RPASHW Trims (T/TL/MWK)</u> MB matte black MW matte white SLV matte silver	RD/RA RPA/RPAS/RPASHW SP SP NF NF MFL MFL FL FL WF VWF LS SP spot 15°, NF narrow flood 22°, MFL medium flood 25°, FL flood 28°, WF wide flood 45°, VWF very wide flood 60°, LS linear spread lens 60°x10°	83 CRI 90± CRI 27 2700K-83 229 2200K-90+ CRISP CrispWhite (18W max) 30 3000K-83 279 2700K-90+ 3CLA 3000K Class A 35 3500K-83 309 3000K-90+ 40 4000K-83 359 3500K-90+ 409 4000K-90+	HEX hexcell louver (not available for use with SPASHW trim) SOL solite beam softening lens (comes standard with SPASHW trim)

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PROJECT:

TYPE:

Specifications

Application

Retail and commercial ambient, accent & display lighting

Construction

20 ga. galvanized steel frame

18 ga. galvanized steel splice housing and hanger brackets (*not for Remodeler version*)

Cast aluminum plaster frame with perforated face (*for trimless version only*)

Die-cast optical housing and trim

Die-cast heat sink

Optical

Tilt: 0-30° (*SA trim*), 0-20° (*SPA/SPASHW trims*)

Beam Spreads: Spot, 15°; Narrow Flood, 22°; Medium Flood, 25°;

Flood, 28°; Wide Flood, 45°; Very Wide Flood, 60°;

Linear Spread, 60° x 10°

LED

Color Temp Options: 2200K, 2700K, 3000K, 3500K, 4000K

CRI: 83 typ. (*2700K, 3000K, 3500K, 4000K*)

90+ typ. (*2200K, 2700K, 3000K, 3500K, 4000K*)

CrispWhite* LED (*18W max*) & Class A** 3000K (*high CRI, high gamut*)

R9 Values: 11 (83 CRI), 55 (92 CRI)

Binning: 3 MacAdam (*SDCM*)

Life: 50,000+ hrs, > 70% of initial lumens at 50,000 hrs

* **CrispWhite:** CrispWhite Technology delivers the warmth of colors expected from a high 90 CRI solution but also creates the natural crisp white color that is pleasing to the eye. It creates the most impactful lighting ever available, by revealing the richest whites and vibrant colors that pop.

** **Class A LED:** Class A LED's have a CRI > 80 and a GAI > 80. CRI defines color "Naturalness" and GAI defines color "Saturation." Both being high delivers rich colors and pure whites.

Electrical

Wattage: 13W, 18W, 20W

Electronic constant current LED driver, 120/277VAC input

This product complies with IEEE C62.41 for surge endurance up to 2.5KV.

Amerlux® recommends using additional surge protection with this unit (supplied by others), surge and over voltage damage is not covered under warranty.

Note: Drivers are universal but thermal protector is voltage specific

Drivers

LE/TE - Leading Edge (*Triac, Forward Phase*) or Trailing Edge (*ELV, Reverse Phase*)

0-10V, Lutron and DALI systems also available

See pages 11-12 for more dimming information

Finish

Powder coat paint/wet paint

Consult factory for custom finishes

Mounting

26" Hanger bars included (*except for Remodeler versions*)

Optional **HB49** - hanger bars from min 29" to max 49" available

Trimmed Fixture:

For use in grid or sheetrock ceilings, 5/8" - 2" standard

Trimless Fixture (*not available with Shower trim*):

For use in sheetrock ceilings, max ceiling thickness 5/8"

Millwork Fixture:

Millwork extension collars are based on ceiling material specifications and thickness. Provides flush trim appearance level with ceiling material. Max thickness 2"

Not available for use with Remodeler model

Certifications

CSA damp as tested to UL 1598 standards

IC/AT rated (*optional, 13W & 18W only*)

Damp location

Wet location (*SPASHW trim only*)

Warranty

5 year limited warranty

Emergency Battery Pack (EM)

Powers fixture at 5.1 watts (*approx. 400 Lm*) for 90 minutes (*not for use with REM, CP or IC versions*)

See wiring schematic on pg 14.

Optional RF Node

Amerlux® has partnered with control companies to create building environments that are safer, and smarter, than ever before. At the heart of our partnership is intelligent RF nodes, the most advanced digital wireless communication available today. Integrated into Amerlux products.

Accessories (diagram shows installation order)

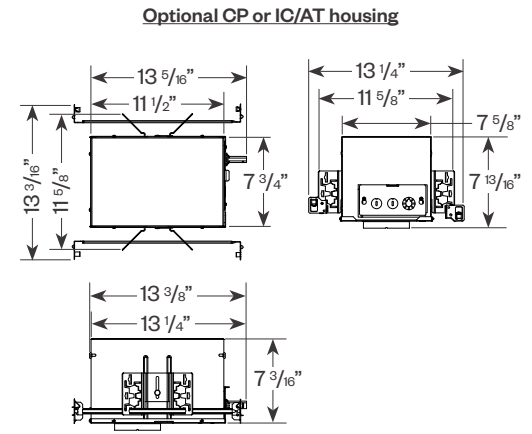
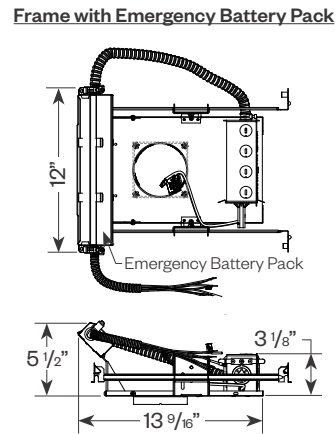
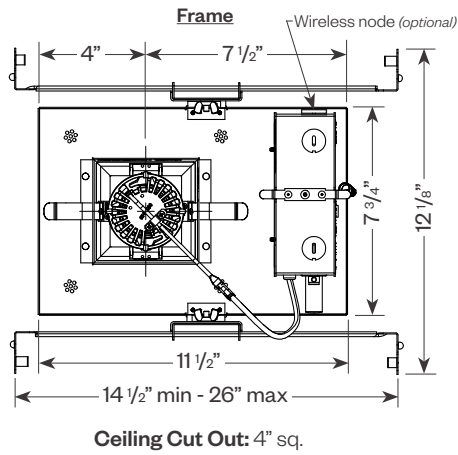


Hexcell, optical film, solite lens

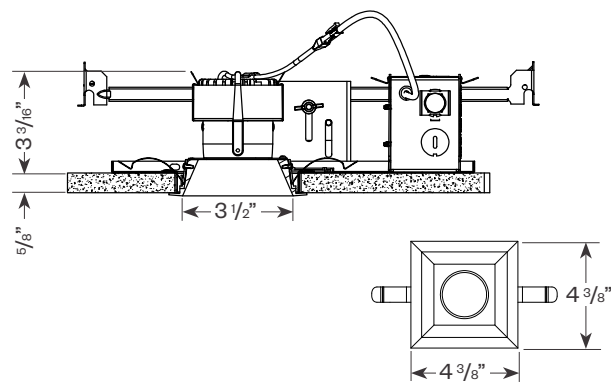
PROJECT:

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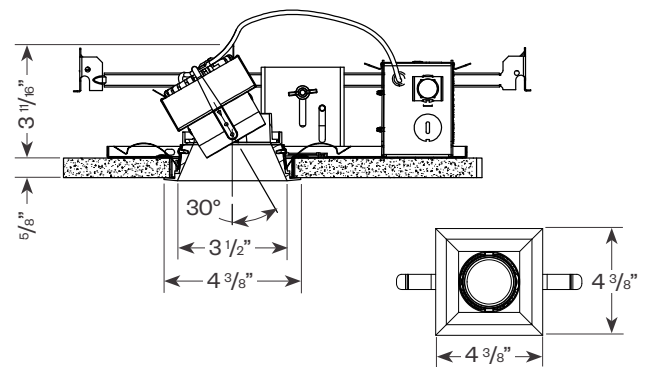
Product Details - Trimmed



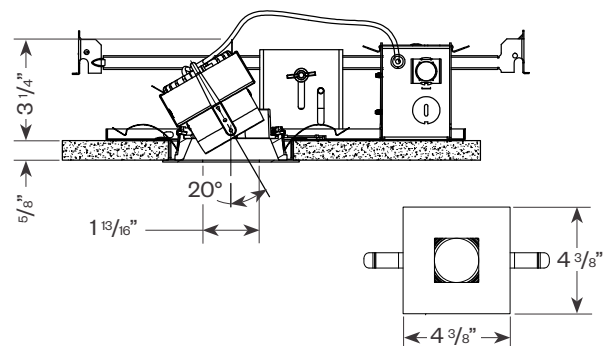
Downlight



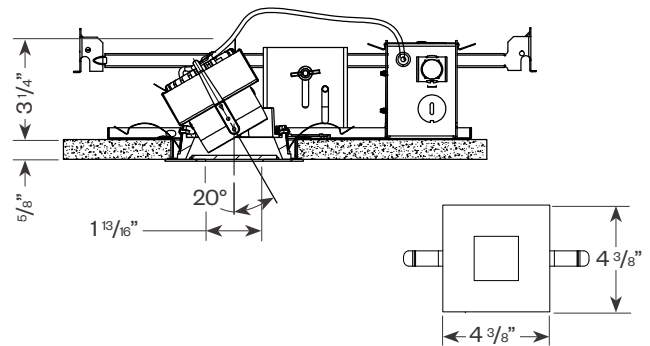
Adjustable



Pinhole Adjustable



Pinhole Adjustable Shower

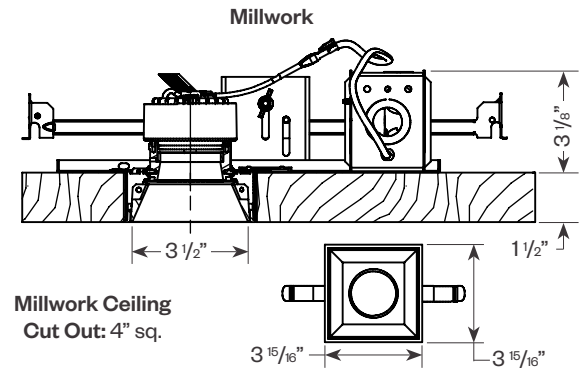
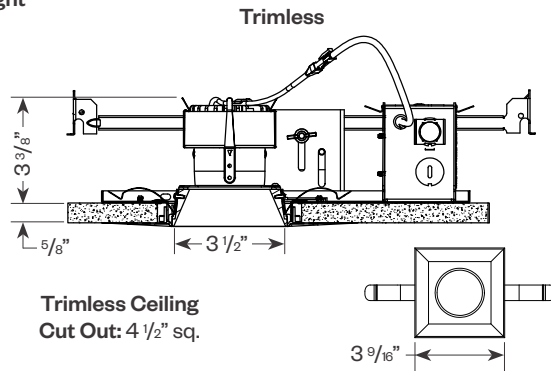


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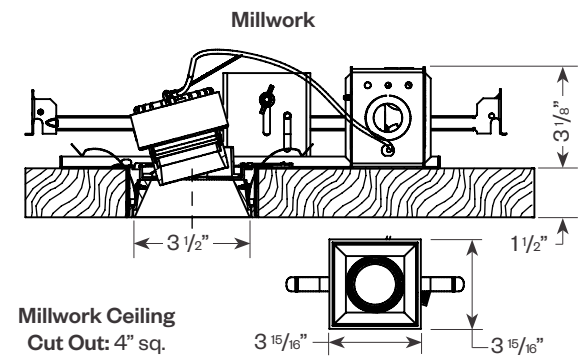
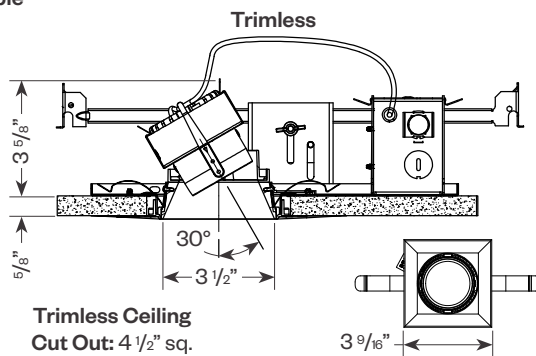
TYPE:

Product Details - Trimless & Millwork

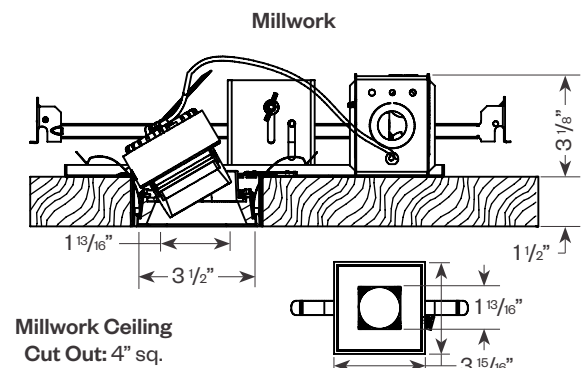
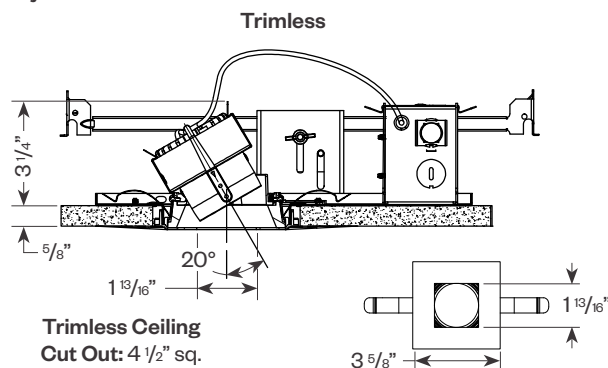
Downlight



Adjustable

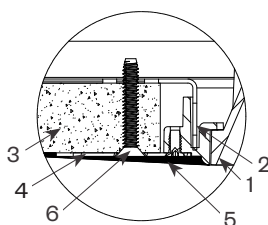


Pinhole Adjustable



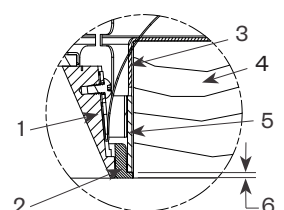
Plaster Frame Installation Detail (for trimless fixture only)

1. Reflector Trim
2. Aperture Plate
3. Ceiling 5/8"
4. Cast Aluminum Plaster Frame
5. Plaster Skim Coat (by others)
6. 6-32 Type F Thread Cutting Screw



Millwork Detail

1. Reflector Trim
2. Millwork Ring
3. Aperture Plate
4. Wood Ceiling 2" Max
5. Extension collar (see ordering information for ceiling thicknesses)
6. 1/16" required for trim to be flush with ceiling



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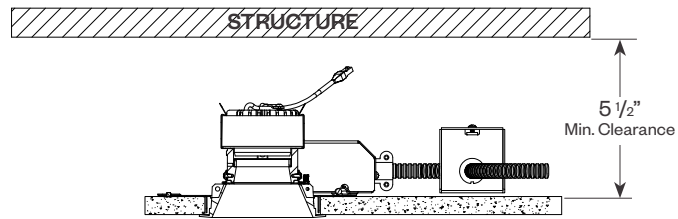
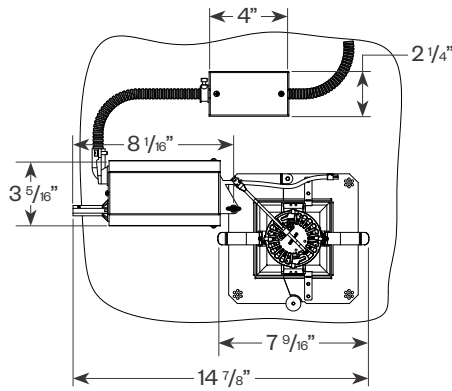
Square Downlights



PROJECT:

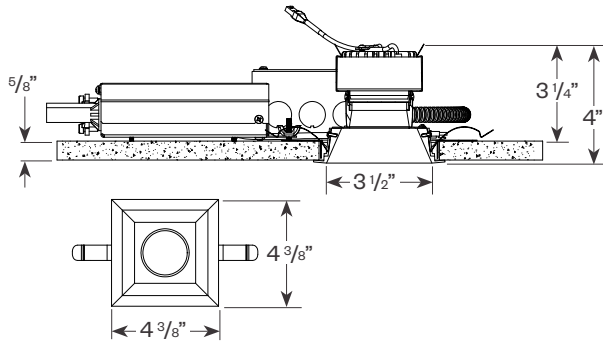
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Product Details - Remodeler Trimmed

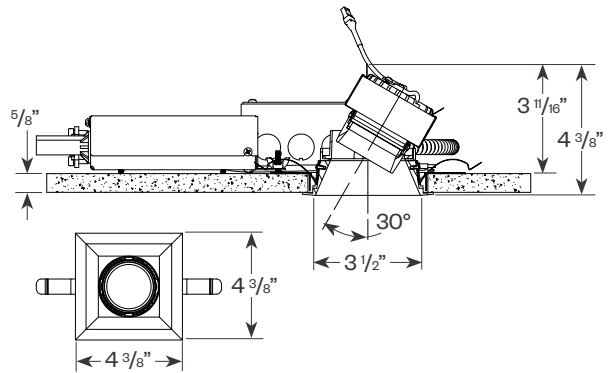


Ceiling Cut Out: 4" sq.

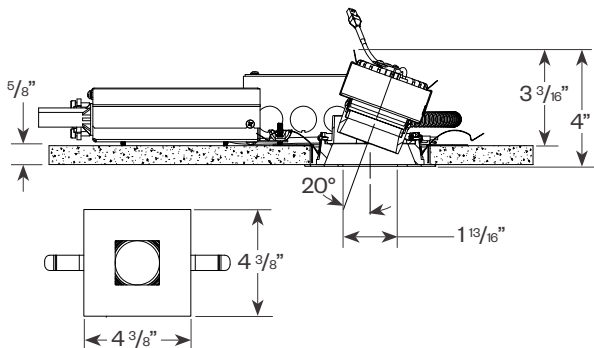
Downlight



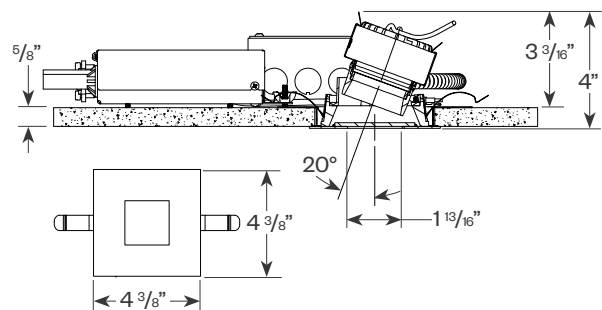
Adjustable



Pinhole Adjustable



Pinhole Adjustable Shower



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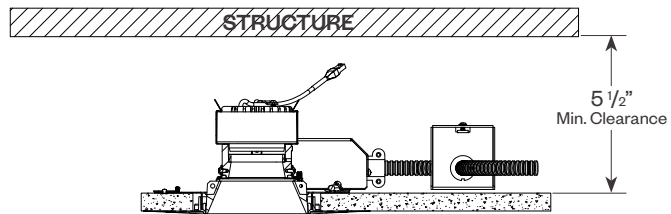
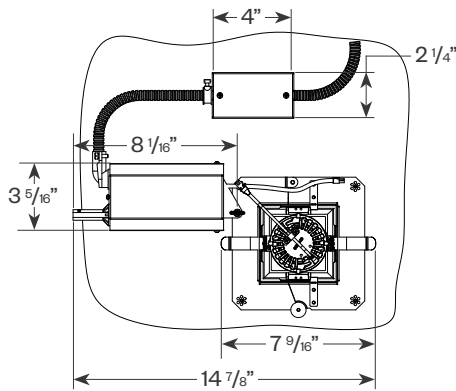
Square Downlights



PROJECT:

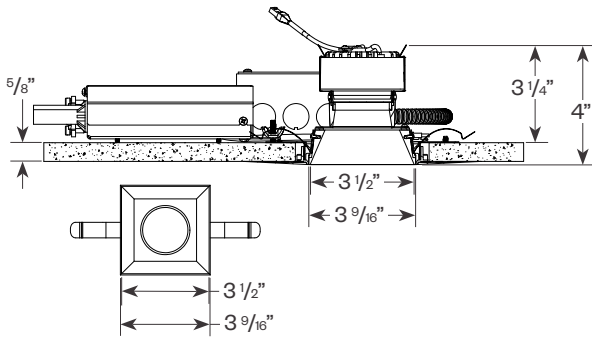
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Product Details - Remodeler Trimless

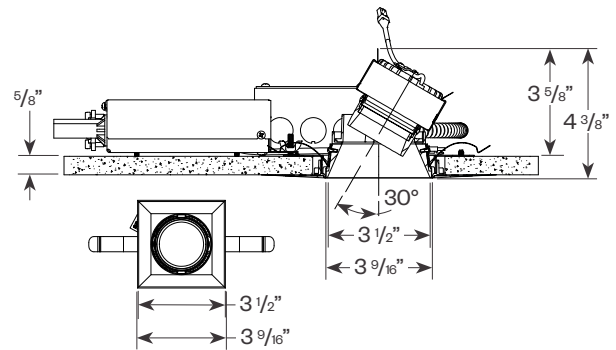


Trimless Ceiling Cut Out: 4 1/2" sq.

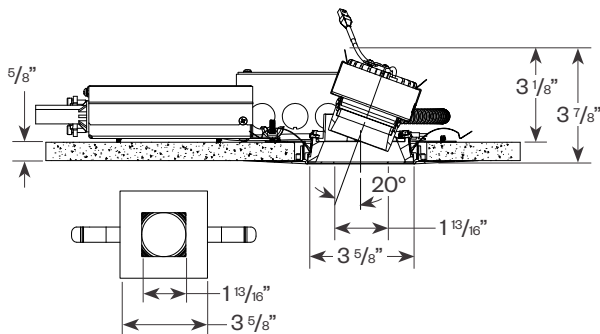
Downlight



Adjustable

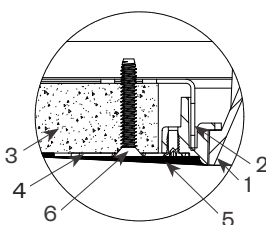


Pinhole Adjustable



Plaster Frame Installation Detail (for trimless fixture only)

1. Reflector Trim
2. Aperture Plate
3. Ceiling 5/8"
4. Cast Aluminum Plaster Frame
5. Plaster Skim Coat (by others)
6. 6-32 Type F Thread Cutting Screw



Hornet® HP

Square Downlights



PROJECT:

TYPE:

Performance Data - Round Downlight (HDL-HP-SD)

Multiplying Factors: (Multiplying Factor is based on 3000K-83 120V IES file on website)

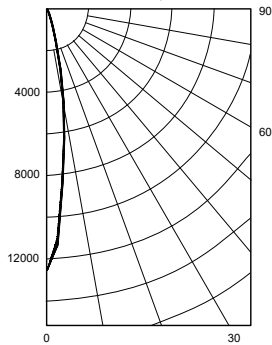
Wattage:	13W	18W	20W
Factor:	0.65	0.90	1.0

CCT:	2700K-83	3000K-83	3500K-83	4000K-83
Factor:	0.96	1.0	1.02	1.04

CCT:	2200K-90+	2700K-90+	3000K-90+	3500K-90+	4000K-90+	CRISP	3CLA
Factor:	0.71	0.80	0.83	0.87	0.90	0.65	0.75

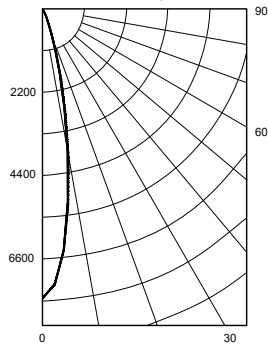
20W LED, 3000K-83

Spot (SP) Distribution, 15°
LTL #818202
Lumens: 1,305



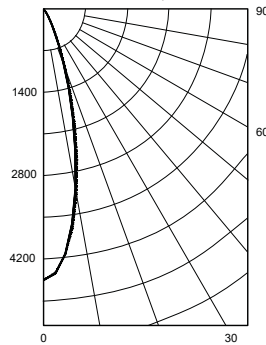
Candelas at Nadir	
Deg	Candela
0	12503
5	8267
15	1659
25	185
35	34
45	2

Narrow Flood (NF) Distribution, 22°
LTL #818203
Lumens: 1,216



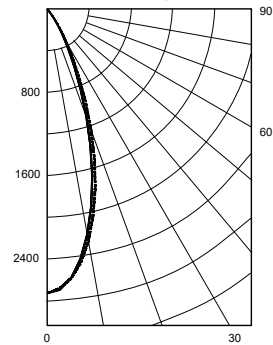
Candelas at Nadir	
Deg	Candela
0	7621
5	6414
15	1904
25	282
35	49
45	4

Flood (FL) Distribution, 28°
LTL #818205
Lumens: 1,170



Candelas at Nadir	
Deg	Candela
0	4540
5	4130
15	2019
25	490
35	81
45	5

Wide Flood (WF) Distribution, 45°
LTL #818206
Lumens: 1,166



Candelas at Nadir	
Deg	Candela
0	2721
5	2581
15	1751
25	712
35	161
45	7

Application Data - Round Downlight (HDL-HP-SD)

Notes and Definitions:

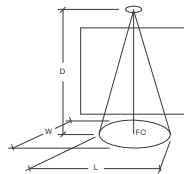
Beam spread is to 50% center beam candlepower (CBCP).

D=Distance to floor or wall.

FC=Footcandles on floor or wall at center beam aiming location.

L=Effective Visual Beam length in feet (50% of maximum footcandle level).

W=Effective Visual Beam width in feet (50% of maximum footcandle level).



	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Spot	5.0'	290	1.9	1.9
	7.5'	161	2.6	2.6
	10.0'	101	3.1	3.1
	12.5'	69	3.7	3.7

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Narrow Flood	5.0'	219	2.2	2.2
	7.5'	114	3.0	3.0
	10.0'	69	3.8	3.8
	12.5'	45	4.7	4.7

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Flood	5.0'	141	2.7	2.7
	7.5'	70	3.7	3.7
	10.0'	42	4.9	4.9
	12.5'	27	6.0	6.0

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Wide Flood	5.0'	97	3.3	3.3
	7.5'	46	4.8	4.8
	10.0'	26	6.3	6.3
	12.5'	17	7.7	7.7

PROJECT:

TYPE:

Performance Data - Round Adjustable (HDL-HP-SA)

Multiplying Factors: (Multiplying Factor is based on 3000K-83 120V IES file on website)

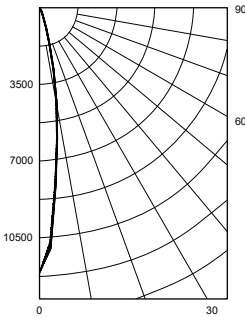
Wattage:	13W	18W	20W
Factor:	0.65	0.90	1.0

CCT:	2700K-83	3000K-83	3500K-83	4000K-83
Factor:	0.96	1.0	1.02	1.04

CCT:	2200K-90+	2700K-90+	3000K-90+	3500K-90+	4000K-90+	CRISP	3CLA
Factor:	0.71	0.80	0.83	0.87	0.90	0.65	0.75

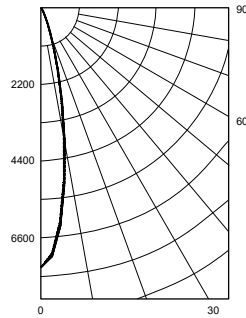
20W LED, 3000K-83

Spot (SP) Distribution, 15°
LTL #818193
Lumens: 1,300



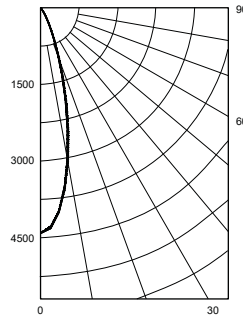
Candelas at Nadir	
Deg	Candela
0	12031
5	7996
15	1673
25	203
35	40
45	3

Narrow Flood (NF) Distribution, 22°
LTL #818194
Lumens: 1,239



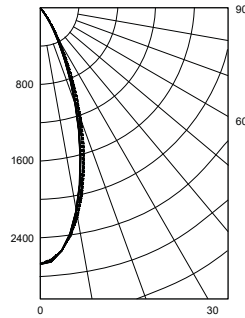
Candelas at Nadir	
Deg	Candela
0	7431
5	6154
15	1767
25	279
35	53
45	5

Flood (FL) Distribution, 28°
LTL # 818196
Lumens: 1,160



Candelas at Nadir	
Deg	Candela
0	4396
5	3992
15	1958
25	503
35	86
45	6

Wide Flood (WF) Distribution, 45°
LTL # 818238
Lumens: 1,156



Candelas at Nadir	
Deg	Candela
0	2669
5	2537
15	1759
25	763
35	177
45	9

Application Data - Round Adjustable (HDL-HP-SA)

Notes and Definitions:

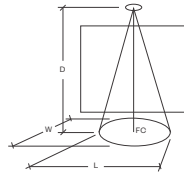
Beam spread is to 50% center beam candlepower (CBCP).

D=Distance to floor or wall.

FC=Footcandles on floor or wall at center beam aiming location.

L=Effective Visual Beam length in feet (50% of maximum footcandle level).

W=Effective Visual Beam width in feet (50% of maximum footcandle level).



	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Spot	5.0'	281	1.9	1.9
	7.5'	156	2.6	2.6
	10.0'	98	3.2	3.2
	12.5'	66	3.7	3.7

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Narrow Flood	5.0'	215	2.2	2.2
	7.5'	112	3.0	3.0
	10.0'	67	3.7	3.8
	12.5'	44	4.6	4.7

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Flood	5.0'	151	2.6	2.6
	7.5'	73	3.6	3.5
	10.0'	43	4.8	4.7
	12.5'	28	5.9	5.8

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Wide Flood	5.0'	95	3.3	3.3
	7.5'	45	4.9	4.6
	10.0'	26	6.4	6.0
	12.5'	17	7.9	7.4

PROJECT:

TYPE:

Performance Data - Round Pinhole Adjustable (HDL-HP-SPA)

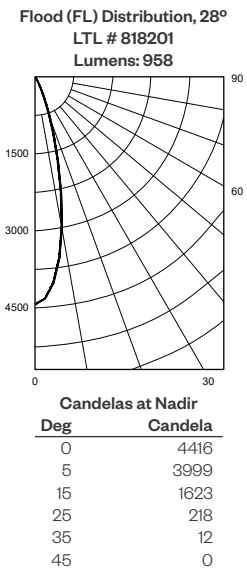
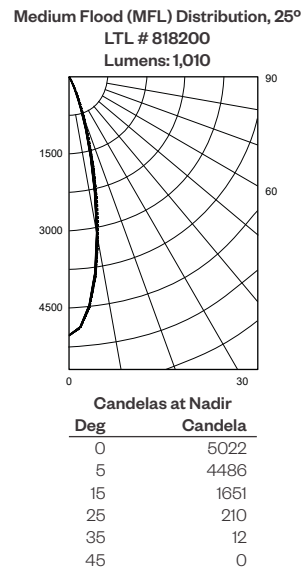
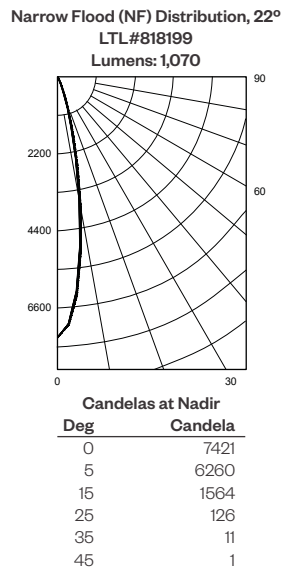
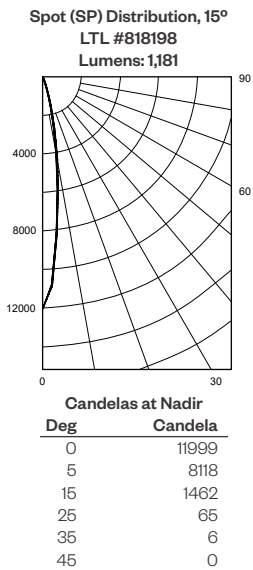
Multiplying Factors: (Multiplying Factor is based on 3000K-83 120V IES file on website)

Wattage:	13W	18W	20W
Factor:	0.65	0.90	1.0

CCT:	2700K-83	3000K-83	3500K-83	4000K-83
Factor:	0.96	1.0	1.02	1.04

CCT:	2200K-90+	2700K-90+	3000K-90+	3500K-90+	4000K-90+	CRISP	3CLA
Factor:	0.71	0.80	0.83	0.87	0.90	0.65	0.75

20W LED, 3000K-83



Application Data - Round Pinhole Adjustable (HDL-HP-SPA)

Notes and Definitions:

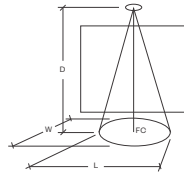
Beam spread is to 50% center beam candlepower (CBCP).

D=Distance to floor or wall.

FC=Footcandles on floor or wall at center beam aiming location.

L=Effective Visual Beam length in feet (50% of maximum footcandle level).

W=Effective Visual Beam width in feet (50% of maximum footcandle level).



	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Spot	5.0'	278	1.8	1.8
	7.5'	156	2.5	2.5
	10.0'	97	3.1	3.1
	12.5'	66	3.6	3.6

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Narrow Flood	5.0'	212	2.1	2.1
	7.5'	111	2.9	2.9
	10.0'	67	3.6	3.6
	12.5'	44	4.5	4.4

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Flood	5.0'	167	2.4	2.3
	7.5'	82	3.3	3.2
	10.0'	48	4.3	4.2
	12.5'	31	5.3	5.2

	0° Aiming Angle Horizontal Footcandles			
	D	FC	L	W
Wide Flood	5.0'	143	2.5	2.5
	7.5'	71	3.4	3.5
	10.0'	41	4.5	4.6
	12.5'	27	5.5	5.6

Hornet® HP

Square Downlights



PROJECT:

TYPE:

Dimming Compatibility

Amerlux® Hornet® fixtures are compatible with all major dimming protocols prevalent in the United States. Please see below for general compatibilities and wiring diagrams. Amerlux recommends testing your unique dimming configuration as the exact full configuration (Dimmer, Fixture Quantity, Voltage, etc) may affect dimming performance.

--- NOTE: INFORMATION BELOW IS FOR WIRED DIMMERS ONLY. FOR WIRELESS DIMMERS, CONSULT FACTORY ---

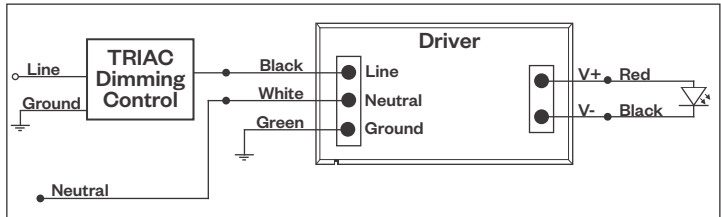
TRIAC (Forward Phase) DIMMING (Standard)

Utilizes standard TRIAC dimmers that are in wide use in installations across the US. Best for retrofit applications where TRIAC dimmers are installed.

Notes:

- 120VAC or 277VAC*
- Dims down to 5% light output (most cases)
- Consult Dimming manufacturer for installation instructions - **DO NOT SHARE NEUTRALS!**
- Must meet dimmer Minimum Load Requirements per dimming manufacturer

TRIAC Wiring Diagram



Compatible Dimmers†:

Wall Box (TRIAC 120VAC)	Central System
Lutron "Diva"	Lutron "GP" Panel
Lutron "Nova-T"	Lutron Grafik Eye QS
Lutron "Maestro"	
Lutron "Skylark"	

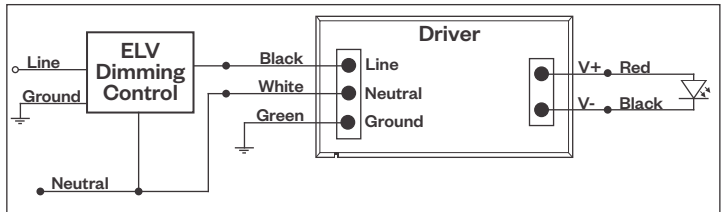
ELV - Electronic Low Voltage (Reverse Phase) DIMMING (Standard)

Utilizes specialized "ELV" dimmers.

Notes:

- 120VAC or 277VAC*
- Dims down to 5% light output (most cases)
- Consult Dimming manufacturer for installation instructions - **DO NOT SHARE NEUTRALS!**
- Must meet dimmer Minimum Load Requirements per dimming manufacturer

ELV Wiring Diagram



Compatible Dimmers†:

Wall Box (ELV 120VAC)	Wall Box (ELV 277VAC)	Central System
Lutron "Diva"	Leviton Revoir II AWSMT-E	Lutron "GP" Panel with PHPM-PA 120/277VAC
Lutron "Nova-T"		Lutron Grafik Eye QS with PHPM-PA 120/277VAC
Lutron "Maestro"		
Lutron "Skylark"		
Leviton "Surslide"		
Leviton "Vizio"		

Notes:

* Driver is 277VAC dimmable with appropriate dimmer (by others). All provided wiring diagrams show 120VAC wiring colors and method. Please refer to 277VAC dimmer installation instructions for 277VAC wiring diagrams.

† The absence of a dimmer from the lists above does not imply incompatibility. Please consult factory for compatibility inquiries.

Hornet® HP

Square Downlights



PROJECT:

TYPE:

Dimming Compatibility *(continued)*

Amerlux® Hornet® fixtures are compatible with all major dimming protocols prevalent in the United States. Please see below for general compatibilities and wiring diagrams. Amerlux recommends testing your unique dimming configuration as the exact full configuration (Dimmer, Fixture Quantity, Voltage, etc) may affect dimming performance.

--- NOTE: INFORMATION BELOW IS FOR WIRED DIMMERS ONLY. FOR WIRELESS DIMMERS, CONSULT FACTORY ---

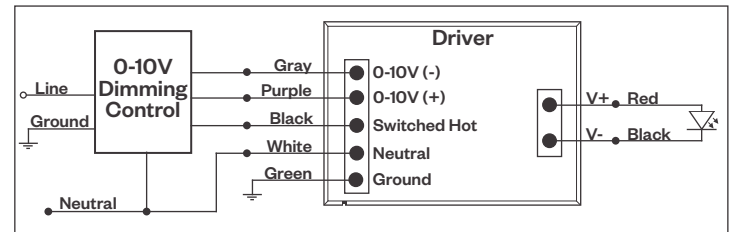
0-10V DIMMING

Integrates into a variety of building management and daylighting controls

Notes:

- 120VAC or 277VAC*
- Dims down to 1% light output
- Requires interface to turn off power to driver
- Consult Dimming manufacturer for installation instructions - **DO NOT SHARE NEUTRALS!**

0-10V Wiring Diagram



Compatible Dimmers*:

Wall Box	Central System
Lutron "Diva" - DVSTV	Lutron Grafik Eye with GRX-TVI Interface
Leviton Renoir II 0-10V	

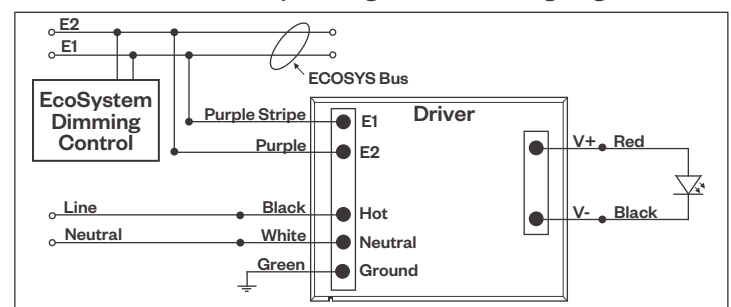
LUTRON LDE1 DIMMING

Integrates into Lutron EcoSystem building management

Notes:

- 120VAC or 277VAC*
- Dims down to 1% light output
- EcoSystem Control
- Consult Dimming manufacturer for installation instructions - **DO NOT SHARE NEUTRALS!**

LDE1 (HILUME-H-ECO) EcoSystem Digital Control Wiring Diagram



Compatible Dimmers*:

Lutron ECO System	Central System
Pow Pak Dimming Modules	Lutron EcoSystem compatible controls
Energj Savr Node	
Grafik Eye QS/Homeworks	
QS Control Unit	
Quantum Hub	
Homeworks QS/My Room	

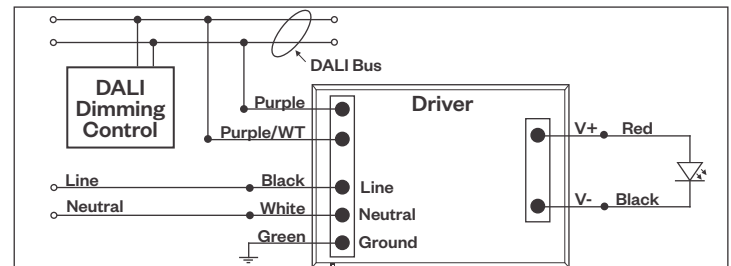
DALI DIMMING

Digital control protocol allows individual fixture control

Notes:

- 120VAC - 277VAC*
- Dims down to 1% light output in most cases

DALI Wiring Diagram



Notes:

* Driver is 277VAC dimmable with appropriate dimmer (by others). All provided wiring diagrams show 120VAC wiring colors and method. Please refer to 277VAC dimmer installation instructions for 277VAC wiring diagrams.

† The absence of a dimmer from the lists above does not imply incompatibility. Please consult factory for compatibility inquiries.

PROJECT:

TYPE:

Emergency Battery Pack

Wiring Diagram

