A Delta Group Company

Hornet[®] HP Square Downlights



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" round trim available as a fixed downlight, adjustable or pinhole adjustable aperture. Remodeler, Trimless and Millwork options available.

Product Overview

Features

Type: Recessed Square Downlight

Wattage: 13, 18, 20

Lumen Output: 1,305 max; 65 Lm/W (spot optic)

CBCP: 12,503 max (spot optic)

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

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

90+ typ. (2200K, 2700K, 3000K, 3500K, 4000K) CrispWhite (18W max) & 3K Class A available

Dimming: TRIAC & ELV (120/277VAC)- 5% Dim

Lutron Hi-lume® H Series/EcoSystem - 1% dim with

soft on, fade to black, 120/277VAC 0-10V (120/277VAC) - 1% Dim DALI (120/277VAC) - 1% Dim



Downlight



Adjustable (Trimless version shown)



Adjustable

PROJECT:

TYPE:





See separate spec sheet for Round trims



Pinhole Adjustable



Pinhole Adjustable Shower

Performance Chart

Watts	Delivered Lumens	LPW	СВСР	Color Temp
13	848	65	8,127	3000K-83
18	1,175	65	11,253	3000K-83
20	1,305	65	12,503	3000K-83

Data is based on 3000K-83 IES files available on website Data is based on Spot optic. See pg 6 for other beam spreads All wattage and LPW includes 2W thermal protector

Electrical Data

	13W		18W		20W	
	System Watts	Amps	System Watts	Amps	System Watts	Amps
120V	13	O.11	18	0.15	20	0.17
277V	13	0.05	18	0.06	20	0.07

Electronic constant current LED driver









PROJECT: TYPE:

Housing/Frame Ordering Information

1 2 3 4 5 6

1 Model

For New Construction

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)

For Existing Ceilings

HDL-HP-S-REM-A17⁺ (Remodeler)

9 Style

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

3 Wattage

13*

18*

20 (not available for use with IC housing)

4 Voltage

120

277

120/277 (for use with IC housing only)

<u>Driver</u> (for non-dimming, select LE/TE option)

LE/TE* - TRIAC/ELV dimming

 $\textbf{HILUME-H-ECO} - \text{Lutron Hi-lume} \\ \text{H Series, EcoSystem, 1\% dim} \\$

with soft on, fade to black **0-10V*** - 0-10V dimming, 1% dim

DALI - DALI dimming, 1% dim

Options/Accessories

Beam Spreads

SD/SA

SP*

NF*

MFL*

FL*

WF*

 $\ensuremath{\textbf{EM}}$ - 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)

SPA/SPASHW

SP*

NF*

MFL*

FL*

Trim Ordering Information

1 2 3 4 5

1 Model

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)

Style

T - trimmed

 ${f TL}$ - trimless (not for use with SPASHW trim)

MWK - millwork (not available for use with SPASHW trim)

Finish - SD/SA Trims:

<u>Trimmed</u> <u>Trimless/Millwork</u>

MBW - matte black, white flange
MW - matte white, white flange
MW - matte white

SLVW - matte silver, white flange SLV - matte silver

MBB - matte black, black flange

SLVS - matte silver, silver flange

Finish - SPA/SPASHW Trims (Trimmed, Trimless or Millwork):

MB - matte black

MW - matte white

SLV - matte silver

PC* - polished chrome

BN* - brushed nickel

* Consult factory for availability with SPASHW trim, not available for use with MWK

LS- linear spread lens 60° x 10°

ı	Color Temp		
	83 CRI	90+ CRI	
	27 - 2700K-83	229 - 2200K-90+	CRISP - CrispWhite
	30 - 3000K-83	279* - 2700K-90+	(18W max)
	35 - 3500K-83	309* - 3000K-90+	3CLA - 3K Class A

SP- spot 15°, NF- narrow flood 22°, MFL- medium flood 25°, FL- flood 28°, WF- wide flood 45°, VWF- very wide flood 60°,

40 - 4000K-83 **359** - 3500K-90+ **409** - 4000K-90+

Options/Accessories

HEX - hexcell louver (not available for use with SPASHW trim)

SOL - solite beam softening lens (comes standard with SPASHW trim)

^{*} Title 24 Compliant

[†] The "A" refers to the sequential revision in a year and "XX" refers to the year of update. Updates coincide with improved performance while not changing the overall fixture aesthetic and are reflected in the published performance data. Please contact your Amerlux representative for explanations of changes.



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° (RA/RPAS trims), 0-20° (RPA/RPASHW 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 available, 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: 13, 18, 20

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/Trailing Edge, ELV, reverse phase 0-10V, Lutron and DALI systems also available

See pages 11-13 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) Title 24 Compliant (see ordering page for options that apply) Damp location

Wet location (RPASHW 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/AT versions)

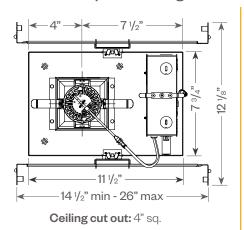
Accessories (diagrams show installation order)

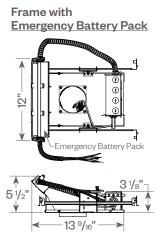


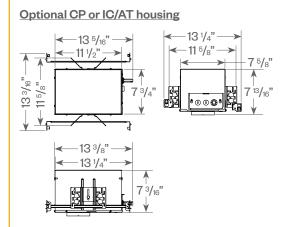
Hexcell, optical film, solite lens



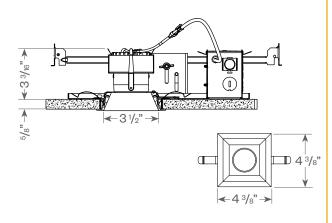
Hornet HP Square Downlights:



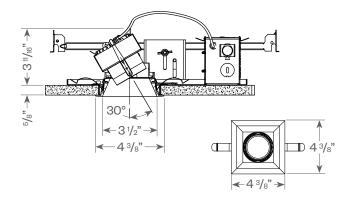




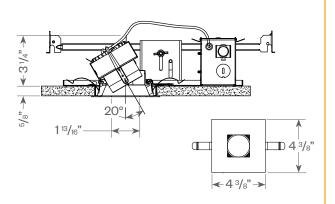




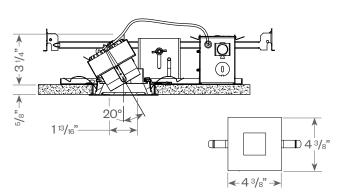
Adjustable



Pinhole Adjustable



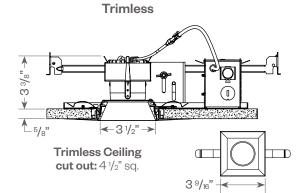
Pinhole Adjustable Shower

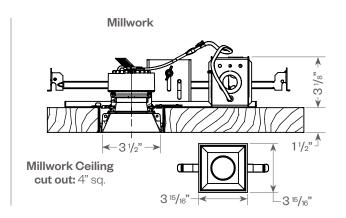




PROJECT:

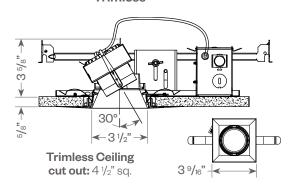
Hornet HP Square Downlight:

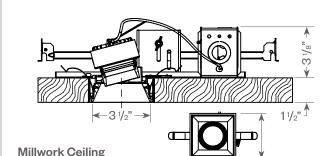




Hornet HP Square Adjustable:

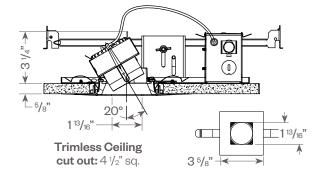
Trimless





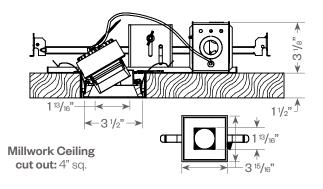
Hornet HP Square Pinhole Adjustable:

Trimless



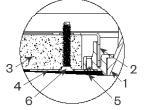
Millwork

Millwork



Plaster Frame Installation Detail (for trimless fixture only)

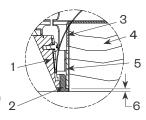
- 1. Reflector Trim
- 2. Aperture plate
- 3. Ceiling 5/8"
- 4. Cast Aluminum Plaster Frame
- 5. Plaster Skim Coat (by others)
- 6.6-32 Type F Thread Cutting Screw



Millwork Detail

cut out: 4" sq.

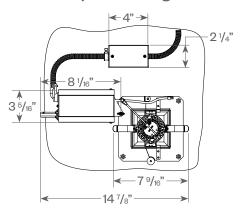
- 1. Reflector Trim
- 2. Millwork Ring
- 3. Aperture Plate
- 4. Wood Ceiling 2" Max
- 5. Extension collar (see ordering information for ceiling thicknesses)
- 6. 1/16" required for trim to be flush with ceiling

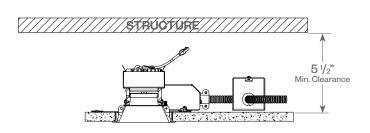


3 15/16"



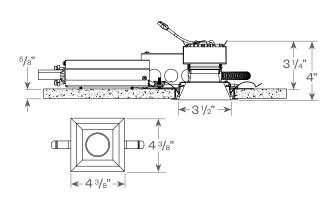
Hornet HP Square Downlights - Remodeler:



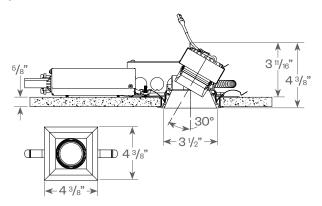


Ceiling cut out: 4" sq.

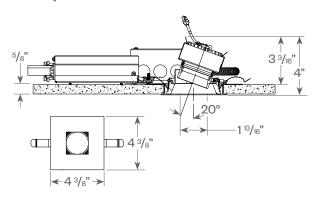
Downlight



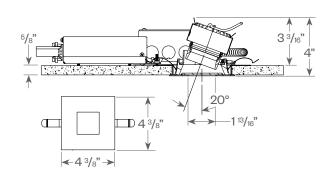
Adjustable



Pinhole Adjustable

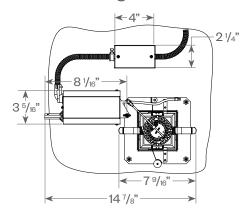


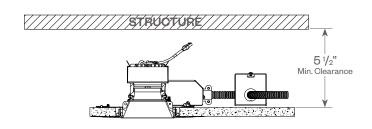
Pinhole Adjustable Shower





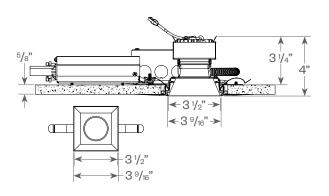
Hornet HP Downlight: Remodeler Trimless

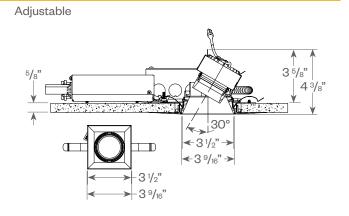




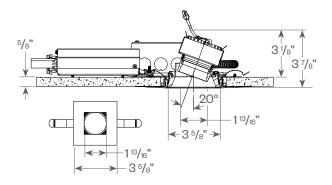
Ceiling cut out: 4 1/2" sq.

Downlight



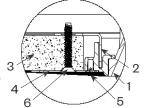


Pinhole Adjustable



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







PROJECT: TYPE:

Hornet HP Square Downlight:

FIXTURE DATA: (Complete photometric data (ies format) available upon request)

MULTIPLYING FACTORS: (Multiplying Factor is based on 3000K-83120V IES file on website)

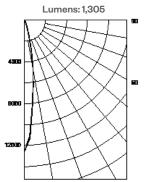
Wattage	: 13W	18W	20W
Factor:	0.65	0.90	1.0

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

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

20W LED, 3000K-83

Spot (SP) Distribution, 15° LTL #818202

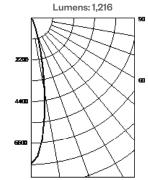


Candelas at Nadir

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

 Λ

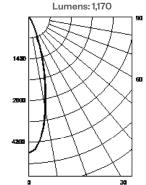




Candelas at Nadir

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

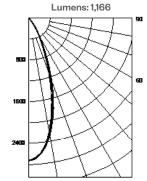
Flood (FL) Distribution, 28° LTL # 818205



Candelas at Nadir

Carracia	as at i taaiii
Deg	Candela
0	4540
5	4130
15	2019
25	490
35	81
45	5

Wide Flood (WF) Distribution, 45° LTL # 818206



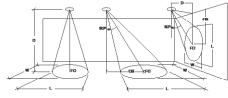
Candelas at Nadir

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

Application Data:

	Horizontal Footcandles				
	D	FC	L	W	
	5.0'	290	1.9	1.9	
Spot	7.5'	161	2.6	2.6	
S	10.0'	101	3.1	3.1	
	12.5'	69	3.7	3.7	
р	D	FC	L	W	
Narrow Flood	5.0'	219	2.2	2.2	
≥	7.5'	114	3.0	3.0	
5	10.0'	69	3.8	3.8	
Na	12.5'	45	4.7	4.7	
	D	FC	L	W	
0	5.0'	141	2.7	2.7	
Flood	7.5'	70	3.7	3.7	
됴	10.0'	42	4.9	4.9	
	12.5'	27	6.0	6.0	
_	D	FC	L	W	
Wide Flood	5.0'	97	3.3	3.3	
畄	7.5'	46	4.8	4.8	
oe	10.0'	26	6.3	6.3	
>	12.5'	17	7.7	7.7	

0° Aiming Angle



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).

CB=Distance across or down to center beam location.





PROJECT: TYPE:

Hornet HP Square Adjustable:

FIXTURE DATA: (Complete photometric data (ies format) available upon request)

MULTIPLYING FACTORS: (Multiplying Factor is based on 3000K-83120V IES file on website)

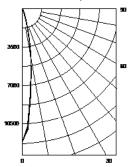
Wattage	: 13W	18W	20W
Factor:	0.65	0.90	1.0

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

(сст:	2200K-90+	2700K-90+	3000K-90+	3500K-90+	4000K-90+	CRISP	3CLA
F	actor:	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



 Can⊎elas at Nadir

 Deg
 Candela

 0
 12031

 5
 7996

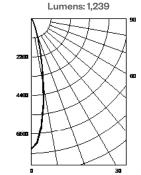
 15
 1673

 25
 203

 35
 40

 45
 3

Narrow Flood (NF) Distribution, 22° LTL#818194



 Candelas at Nadir

 Deg
 Candela

 0
 7431

 5
 6154

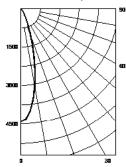
 15
 1767

 25
 279

 35
 53

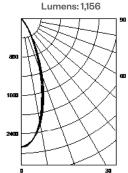
 45
 5

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				

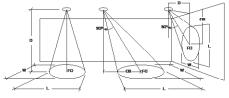
Wide Flood (WF) Distribution, 45° LTL # 818238



Candelas at Nadir					
Candela					
2669					
2537					
1759					
763					
177					
9					

Application Data:

	\triangle		Aiming Horizor Footcan	ntal
	D	FC	L	W
	5.0'	281	1.9	1.9
Spot	7.5'	156	2.6	2.6
S	10.0'	98	3.2	3.2
	12.5'	66	3.7	3.7
р	D	FC	L	W
0	5.0'	215	2.2	2.2
>	7.5'	112	3.0	3.0
Narrow Flood	10.0'	67	3.7	3.8
Ra	12.5'	44	4.6	4.7
	D	FC	L	W
-	5.0'	151	2.6	2.6
Flood	7.5'	73	3.6	3.5
正	10.0'	43	4.8	4.7
	12.5'	28	5.9	5.8
_	D	FC	L	W
Wide Flood	5.0'	95	3.3	3.3
Ĕ	7.5'	45	4.9	4.6
ide	10.0'	26	6.4	6.0
>	12.5'	17	7.9	7.4



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).

CB=Distance across or down to center beam location.



Hornet HP Square Pinhole Adjustable:

FIXTURE DATA: (Complete photometric data (.ies format) available upon request)

MULTIPLYING FACTORS: (Multiplying Factor is based on 3000K-83120V IES file on website)

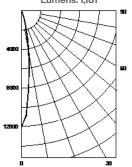
Wattage:	13W	18W	20W
Factor:	0.65	0.90	1.0

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

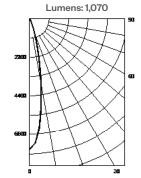
Spot (SP) Distribution, 15° LTL #818198 Lumens: 1,181



Candelas at Nadir
Deg Candela
0 11999

11999
8118
1462
65
6
0

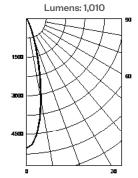
Narrow Flood (NF) Distribution, 22° LTL#818199



Candelas at Nadir

Deg	Candela
0	7421
5	6260
15	1564
25	126
35	11
45	1

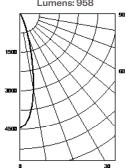
Medium Flood (MFL) Distribution, 25° LTL # 818200



Candelas at Nadir

Deg	Candela				
0	5022				
5	4486				
15	1651				
25	210				
35	12				
45	0				

Flood (FL) Distribution, 28° LTL # 818201 Lumens: 958



Candelas at Nadir

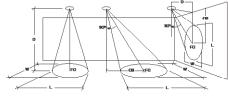
Deg	Candela
0	4416
5	3999
15	1623
25	218
35	12
45	0

Application Data:



0° Aiming Angle Horizontal Footcandles

Spot	D	FC	L	W	
	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	
Narrow Flood	D	FC	L	W	
	5.0'	212	2.1	2.1	
``	7.5'	111	2.9	2.9	
10	10.0'	67	3.6	3.6	
\mathbb{N}	12.5'	44	4.5	4.4	
	D	FC	L	W	
~	5.0'	167	2.4	2.3	
Flood	7.5'	82	3.3	3.2	
Ĕ	10.0'	48	4.3	4.2	
	12.5'	31	5.3	5.2	
_	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	



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). **CB**=Distance across or down to center beam location.



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.

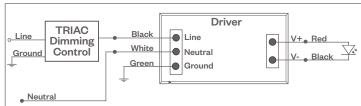
Notes:

- 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

Compatible Dimmers†:

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

TRIAC Wiring Diagram



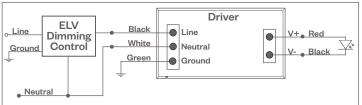
ELV - Electronic Low Voltage (Reverse Phase) DIMMING (Standard)

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

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 "Vareo"		
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 manufacturer 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:

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 ---

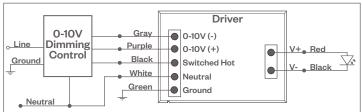
0-10V DIMMING

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" - DVTV with PP-120H Interface
 Leviton Renoir II 0-10V
 Lutron Grafik Eye with GRX-TVI Interface

LUTRON H-SERIES / ECOSYSTEM DIMMING

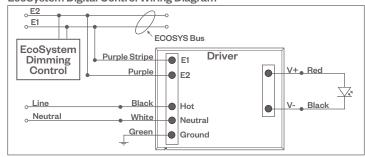
Integrates into Lutron EcoSystem building management

Notes:

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

HILUME-H-ECO, HILUME-5-ECO

EcoSystem Digital Control Wiring Diagram



Compatible Dimmers[†]:

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

DALI DIMMING

Digital control protocol allows individual fixture control

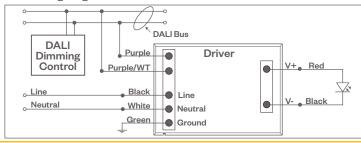
Notes:

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

Compatible Dimmers[†]:

Wall Box (3-Wire Fluorescent)	Central System
Leviton CD250 Controller	Dynalite
	Fifth Light

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 manufacturer 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 DIMMING (-EM OPTION)

Wiring Diagram

