

Linea® 1.5" Mini Direct

Linear, Remote Driver



Features

Linea drives your design scenario, seamlessly. Streamlined and flexible, these architectural LED pendants provide the freedom to create truly dynamic spaces. A synthesis of aesthetics, performance and energy efficiency, the Linea family delivers on its promises. Our tiny new Linea 1.5" pendant proves when it comes to lighting, less really is more. Linea. The power of disciplined design.

Product Overview

- Type: Direct, Remote Driver
- Wattage: 5W/ft, 10W/ft (other wattages available see p2)
- Color Temp: 2700K, 3000K, 3500K, 4000K
- CRI: 83 typ. or 90+ typ
- Dimming: 0-10V, 1% dimming (standard)
Lutron LDE1 Hi-lume® 1% Soft-On/Fade-to-Black
DALI dimming, 1% dim
- Dimming (wireless): Enlighted Sensor
Lutron Athena (integral wireless RF node)

PROJECT:

TYPE:

Fixture Summary *(see following pages for more information)*

Performance Chart

Nominal Wattage/Foot	Delivered Lumens	LPW	Color Temp-CRI
5	1920	105.2	3500K-83
10	3691	101.1	3500K-83

*Data is based on 3500K-83 IES files available on website
Data is based on 4' fixture with performance lens*

Runs

Individual Runs: 2' - 8' (whole foot standard)
 Continuous Runs: Available (whole foot standard)
 Custom: Made to measure available (nearest 1/8" of field dimensions).
Requires approval drawings. Added cost & lead time.

Electrical Data

Wattage Per Foot		4'		8'	
		System Watts	Amps	System Watts	Amps
5	120V	18.2	0.15	36.5	0.30
	277V	18.2	0.07	36.5	0.13
10	120V	36.5	0.30	73.0	0.61
	277V	36.5	0.13	73.0	0.26

Electronic multi-volt (120-277VAC), constant current LED driver

Standard Patterns

"L"	"J"	"U"	"O"	"Z"	Wall to Ceiling	Custom*
Yes	Yes	Yes	Yes	Yes	No	Yes

** Submit drawing, consult factory*



Linea® 1.5" Mini Direct

Linear Mini Direct, Remote Driver



PROJECT:

TYPE:

Ordering Information

LIN1.5MD-A17 **120/277**

1 **2** **3** **4** **5** **6** **7** **8** **9** **10**

<p>1 Model LIN1.5MD-A17* (Mini Direct, remote driver)</p> <p>2 Optics PL - performance lens (standard) SLDW - straight blade louver, white aluminum, solid blades w/overlay SLDB - straight blade louver, black, solid blades w/overlay SLDS - straight blade louver, silver, solid blades w/overlay ASY - asymmetric lens GRZ - grazer lens (suggest cove installation, see page 4) DRP1 - 1" drop lens</p> <p>3 Mounting (Mini Cable Suspension) MASW10 - through ceiling tile or gyp board, white, 10' MASW10SF - through ceiling tile or gyp board, silver foil cord, white canopy, 10' MASB10 - through ceiling tile or gyp board, black, 10' MASB10SF - through ceiling tile or gyp board, silver foil cord, black canopy, 10' MASW10T - over ceiling tee, white, 10' MASW10SFT - over ceiling tee, silver foil cord, white canopy, 10' MASB10T - over ceiling tee, black, 10' MASB10SFT - over ceiling tee, silver foil cord, black canopy, 10' SM - surface mount</p> <p>4 Wattage (per foot) Standard: 5 - 5W/ft 10 - 10W/ft Optional: 3 - 3W/ft (4' minimum length required) 4 - 4W/ft (4' minimum length required) 6 - 6W/ft 7 - 7W/ft 8 - 8W/ft 9 - 9W/ft</p> <p>5 Color Temp 83 CRI: <u>90+ CRI:</u> 27 - 2700K-83 279 - 2700K-90+ 30 - 3000K-83 309 - 3000K-90+ 35 - 3500K-83 359 - 3500K-90+ 40 - 4000-83 409 - 4000K-90+</p> <p>6 Finish HW - high reflectance matte white BT - black texture ST - silver texture <i>For other RAL color, consult factory</i></p>	<p>7 Voltage 120/277</p> <p>8 Length</p> <table border="1"><thead><tr><th>(Length A)</th><th>(Length B)</th><th>(Length C)</th></tr><tr><th>Length A (used for)</th><th>Length B (used for)</th><th>Length C (used for)</th></tr></thead><tbody><tr><td>- all patterns</td><td>- all patterns</td><td>- PU</td></tr><tr><td>- IND</td><td>- PR - 2 lengths</td><td>- PZ</td></tr><tr><td>- CON</td><td>of 2</td><td></td></tr><tr><td>- CUS</td><td></td><td></td></tr></tbody></table> <p>9 Configuration IND - individual fixture, 2' to 8' in 1' increments CON - continuous run > than 8', specify to nearest foot CUS - custom made to measure, +/- 1/8" of customer supplied field dimensions Standard Patterns (see page 6 for details): PLL - L left, (2) straights + (1) 90° corner, leg right PLR - L right, (2) straights + (1) 90° corner, leg left PU - U shape, (3) straight lengths + (2) 90° corners PR - Rectangle, (4) straight lengths + (4) 90° corners PZ - Z shape, (3) straight lengths + (2) 90° corners For custom patterns, submit EDR on amerlux.com</p> <p>10 Drivers Wired: 0-10V - 1% analogue dimming, 120-277VAC, Dim to off when selected with wireless dimming control HILUME-H-ECO - Lutron LDE1 Hi-lume® 1% Soft-On/Fade-to-Black DALI - DALI Dimming 120-277VAC, 1% dim Wireless: ENLS-SR - Enlighted sensor, energy metering ENLS-010 - Enlighted sensor with controller unit AWNR-WH-SR - Lutron Athena wireless node, RF only, white, D4i/DALI-2 AWNR-BL-SR - Lutron Athena wireless node, RF only, black, D4i/DALI-2 AWNR-WH-010 - Lutron Athena wireless node, RF only, white, 0-10V AWNR-BL-010 - Lutron Athena wireless node, RF only, black, 0-10V AWNS-OCC-WH-SR - Lutron Athena wireless node, Occupancy & Daylight sensor, white, D4i/DALI-2 AWNS-OCC-BL-SR - Lutron Athena wireless node, Occupancy & Daylight sensor, black, D4i/DALI-2</p>	(Length A)	(Length B)	(Length C)	Length A (used for)	Length B (used for)	Length C (used for)	- all patterns	- all patterns	- PU	- IND	- PR - 2 lengths	- PZ	- CON	of 2		- CUS		
(Length A)	(Length B)	(Length C)																	
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- all patterns	- all patterns	- PU																	
- IND	- PR - 2 lengths	- PZ																	
- CON	of 2																		
- CUS																			

1 - Lengths less than 4' may have restrictions based upon wattage, lengths, drivers or other options.
† 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.

Linea® 1.5" Mini Direct

Linear Mini Direct, Remote Driver



PROJECT:

TYPE:

Specifications

Application

Open office plan, conference rooms, corridors or any indoor space where the higher light levels of a direct ambient lighting system are required. Remote location of the driver allows for a small housing with the full power of Linea 1.5 Direct.

Construction

One piece extruded aluminum housing is (1 1/2" wide X 1 7/8" high). Die-cast End Caps match fixture body finish. Painted die-formed, cold-rolled steel internal components are protected against rust and corrosion.

Optical

All lenses are snap-in, extruded acrylic, with a maximum length of 8'. Fixtures shipped with lenses installed. Amerlux's proprietary acrylic lens provides excellent transmission while effectively concealing source image.

All louvers are retained with spring clips attached to louver side rails, for good fit and retention.

PL - Performance Lens provides high efficiency with greater lens surface brightness.

SLD - Straight blade Louver Direct has 1/2" high blades 1/2" on center with overlay. Available in white aluminum (light gray, appears white when lit), black or silver

ASY - Asymmetric 20° throw lens is backed high diffusion film that eliminates striations.

GRZ - Grazer lens for highlighting wall surfaces. Suggest surface mounting and cove installation to avoid high angle brightness. No overlay is used to enhance grazing performance. (see page 4)

DRP1 - 1" Drop lens with illuminated end caps

LED

Amerlux's boards and patented connectors with industry recognized LEDs chips enables excellent thermal management and allows Amerlux to offer a 5 year warranty. Our LED binning is within 3 MacAdam ellipse. LED boards are easily replaced in the field with just a Philips screw driver.

Color Temperature Options: 2700K, 3000K, 3500K, 4000K

CRI: 83 typical, 90+ typical

R9: 16 @ CRI 83

R9: >50 @ CRI 92

Life: 50,000+ hr., > 70% of initial lumens (L70)

Electrical

Remote Driver Wiring:

Driver is supplied installed in remote driver box, (one driver per box), with 5' of low voltage plenum rated cable. Fixture supplied with power cord ready to be connected to J-Box (by others) over cable canopy. Amerlux recommends a maximum of 25' between the fixture and the remote driver box. Consult factory with job specific electrical spec if more than 15' is required. Feeds are added as required by specified wattage and driver maximums.

See page 4 for wiring illustration

Standard Wattage: 5W/ft, 10W/ft.

Optional Wattages: 3W/ft, 4W/ft, 6W/ft, 7W/ft, 8W/ft, 9W/ft. (3W & 4W have a minimum length of 4'). For other wattages consult factory.

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 damage is not covered under warranty.

Emergency circuit via remote inverter or auxiliary emergency power supply (by others).

Finish

All painted surfaces are premium powder coated baked on for maximum durability and color stability.

For special paint colors, supply RAL and/or actual paint chip for factory consultation.

Configurations/Lengths

IND - Individuals are stand alone fixtures made of single lengths of 2' to 8' (in 1' increments). They are supplied with matching painted End Caps and the required mounting hardware. Lengths less than 4' may have restrictions based upon wattage, lengths, drivers or other options.

CON - Continuous runs are longer than 8', specified to the nearest whole foot. Continuous runs less than 16' are made of 2 lengths. Continuous runs longer than 16' start with a 8' Beginning of Row (BoR) fitted with an End Cap. The majority of the runs are made up of 8' Middle of Run (MoR) lengths. End of Run (EoR) units are made up of 2' to 8' units to the nearest whole foot or a combination of a last 4' MoR and a 5', 6' or 7' EoR. Factory installed pins and splines simplify fixture alignment. Lengths are quickly joined with "catch and latch" mechanisms or screws and sturdy brackets. Quick connectors simplify field wiring.

CUS - Custom made to measure runs are made to nearest 1/8" of customer supplied field measurements. They can be a single custom length or runs configured as described above only EoR's are 2' to 8' out to the nearest 1/8" exact length or a combination of a last 4' MoR with an EoR cut to exact length to the nearest 1/8".

PXX - Standard patterns consist of 90° corners with standard lengths (3' to 8' in 1' increments) or custom lengths. Depending upon complexity of the pattern, drawings may be required. When ordering please give overall lengths.

See page 7 for layouts.

PC - Custom patterns use standard or custom lengths, 90° or other corner angles with some limitations. Please provide drawings and consult factory.

Mounting

LN1.5MD-A17....MASW10 - Mini Direct pendant mount is only 1.5" wide x 1.875" high. The remote driver box is 15" long and can be located up to 15' from fixture with a 0-10V driver or Lutron driver. 15' of low voltage plenum rated cable supplied (10' off fixture/5' off box). (see page 4)

Mini Cable Suspension:

Thinner cable, smaller gripper and cable coupler are all scaled down to match the reduced size of the LN1.5 Mini series. 5" diameter by 0.25" canopy is used for both feed and non-feed Mini Cable Kits. Low Voltage power feeds are 22 gauge 2 conductor SJT cords supplied in same color as canopy or with optional silver foil clear jacketed cords. Amerlux supplies the required feed and non-feed suspension kits based upon length, electrical options and customer requirements. Suspension kit options include: color, length and mounting condition.

LN1.5MD-A17....SM - Direct Surface Mounted - Housing needs to be attached to solid structure above. Mounting holes are pre-drilled at factory. Some fixture disassembly and reassembly required. Mounting hardware by others.

Certifications

Approved to UL standards for damp locations as tested by OSA. Intended for indoor use only

Warranty

Amerlux's 5 year limited warranty. Please consult Amerlux website for details.

Linea[®] 1.5" Mini Direct

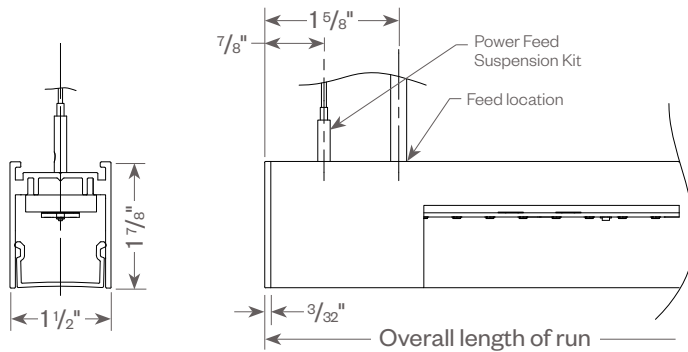
Linear Mini Direct, Remote Driver



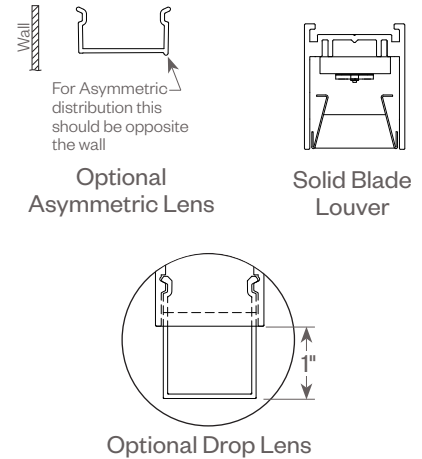
PROJECT:

TYPE:

LINEA 1.5" MINI DIRECT

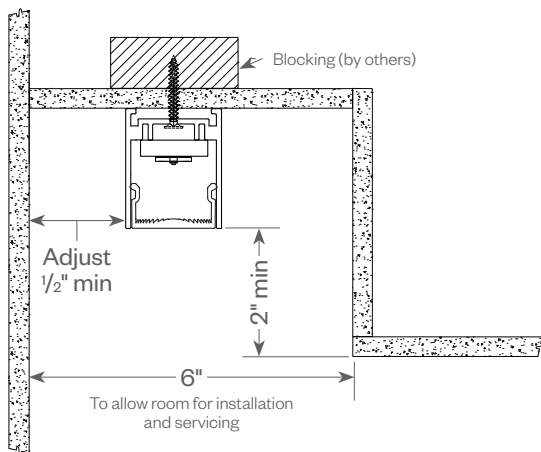


OPTIONAL LENS/LOUVERS

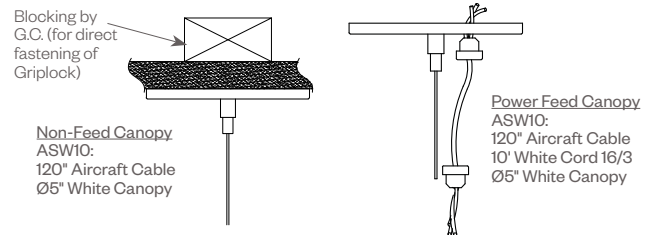


LINEA 1.5" MINI DIRECT GRAZER SURFACE MOUNT

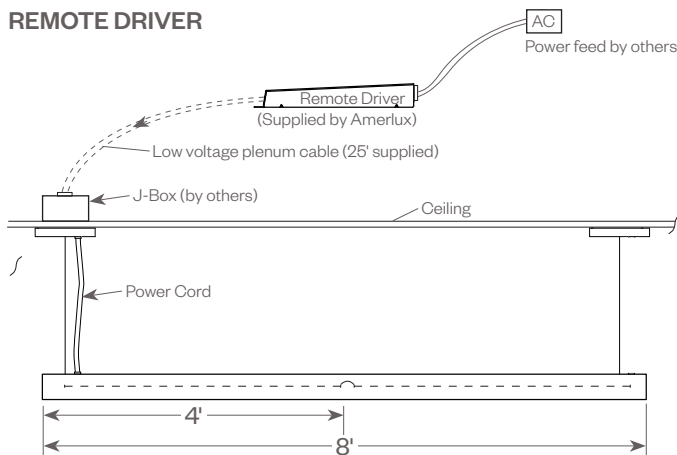
The Grazer Lens for the Linea 1.5 Mini Direct was created to provide an effective and low cost wall grazing lighting tool. A cove or valance is recommended to block direct glare at mid to high angles. Surface mounting requires the housing to be attached to the structure above. Some fixture disassembly and reassembly required.



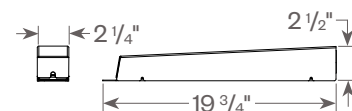
SUSPENSION DETAIL



REMOTE DRIVER



REMOTE DRIVER BOX



Linea[®] 1.5" Mini Direct

Linear Mini Direct, Remote Driver



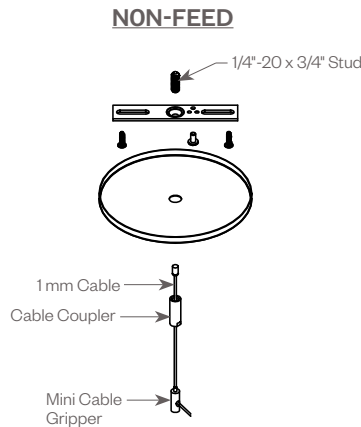
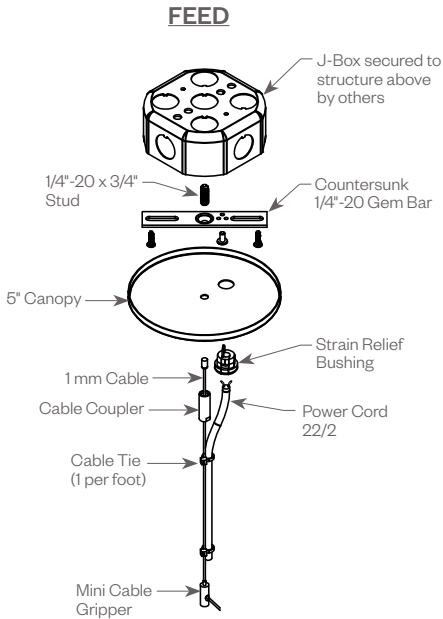
PROJECT:

TYPE:

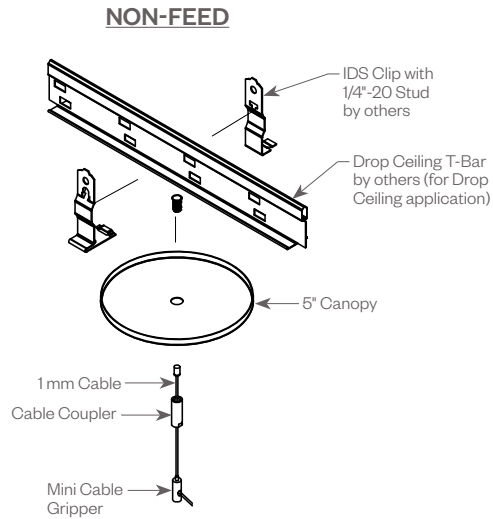
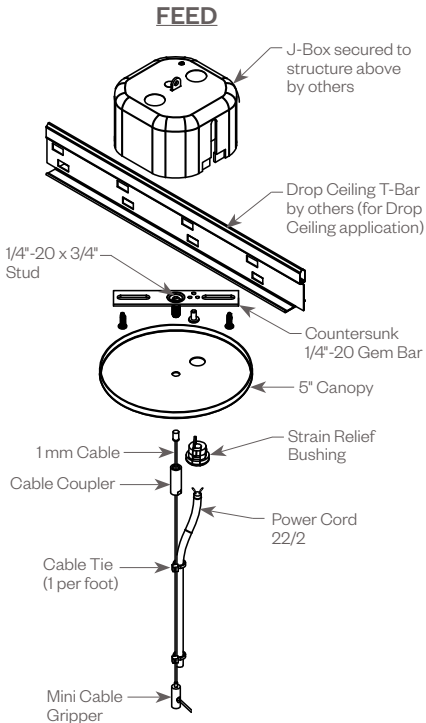
MINI CABLE KIT SUSPENSION OPTIONS:

CEILING OR GYPSUM BOARD (MASW10, MASB10)

Cat#	Length	Cord/Canopy	Application
MASW10	10'	white/white	ceiling tile/gypsum
MASB10	10'	black/black	ceiling tile/gypsum
MASW10T	10'	white/white	ceiling tee
MASB10T	10'	black/black	ceiling tee



TEE GRID OR SCREW SLOT (MASW10T, MASB10T)



Linea[®] 1.5" Mini Direct

Linear Mini Direct, Remote Driver



PROJECT:

TYPE:

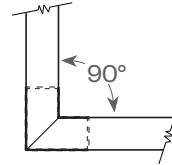
LINEA 1.5" PATTERNS:

Standard Patterns

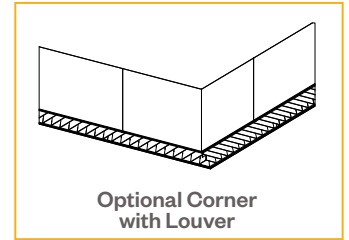
All corners are standard 90°, standard length legs.
 Use standard lengths: 4' min to 8' in 1 foot increments.
 Continuous runs must be the same length in pairs for closed configuration.

Custom Patterns

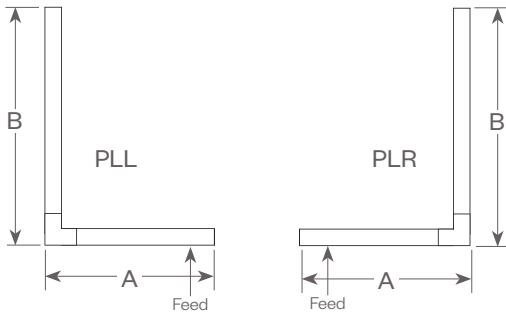
Please provide drawings of your configuration.
 Made to Measure: +/- 1/8", consult factory.
 PC - custom pattern, please provide drawings and consult factory



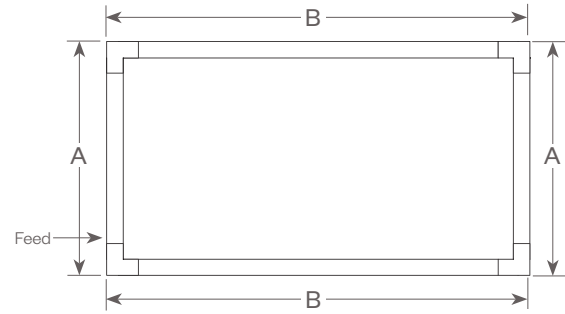
Gruv 1.5 Lens
Mitered Lens



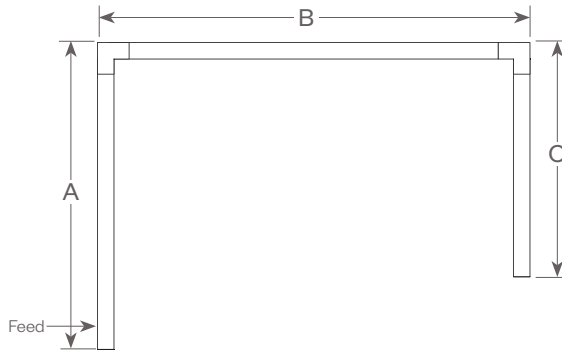
Optional Corner
with Louver



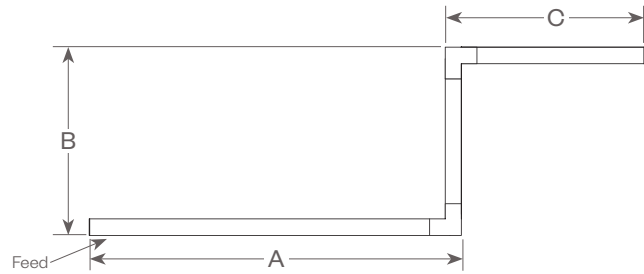
PLL - L Left, (2) straights + (1) 90° corner, leg right
PLR - L Right, (2) straights + (1) 90° corner, leg left
 Provide overall lengths: A' & B'
 Nomenclature: A-B-PLL A-B-PLR



PR - Closed Rectangle, (4) straight lengths + (4) 90° corners
 Provide overall lengths: A' & B'
 Nomenclature: A-B-PR



PU - Open U, (3) straight lengths + (2) 90° corners
 Provide overall lengths: A', B' & C'
 Nomenclature: A-B-C-PU



PZ - Open Z, (3) straight lengths + (2) 90° corners
 Provide overall lengths: A', B' & C'
 Nomenclature: A-B-C-PZ

Linea[®] 1.5" Mini Direct

Linear Mini Direct, Remote Driver



PROJECT:

TYPE:

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

MULTIPLYING FACTORS: (Multiplying Factor is based on 3500K-83 120V IES file on website)

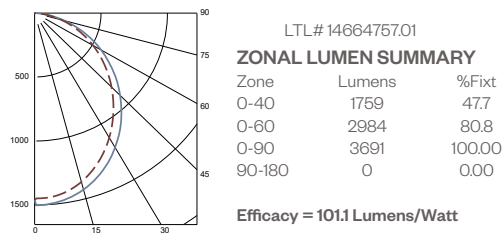
Wattage:	3W	4W	5W	6W	7W	8W	9W	10W
Factor:	0.31	0.42	0.53	0.63	0.72	0.81	0.90	1.0

Finish:	Louver	
	SLV	BLK
Factor:	1.0	.65

CCT-CRI:	2700K-83	3000K-83	3500K-83	4000K-83	2700K-90+	3000K-90+	3500K-90+	4000K-90+
Factor:	0.92	0.97	1.0	1.02	0.81	0.84	0.86	0.89

LINEA 1.5" PERFORMANCE LENS 10W 3500K 4FT

Total Watts: 37 Total Lumens: 3691
Source: 96 White LED's



COEFFICIENTS OF UTILIZATION

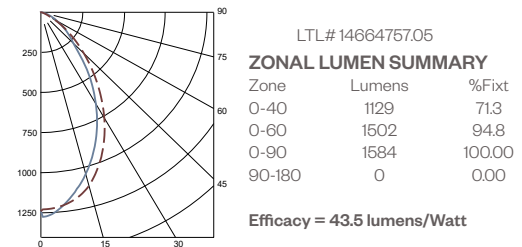
Effective Floor Cavity Reflectance 20%

RC	RW			
	70	50	30	10
0	119	119	119	119
1	109	105	100	97
2	100	92	85	79
3	91	81	73	66
4	83	72	63	57
5	77	64	55	49
6	71	58	49	43
7	66	53	44	38
8	62	48	40	34
9	58	44	36	31
10	54	41	33	28

Note: Values are expressed as percent of total lumen output delivered to the task surface.

LINEA 1.5" STRAIGHT BLADE LOUVER (SLV) 10W 3500K 4FT

Total Watts: 37 Total Lumens: 1584
Source: 96 White LED's



COEFFICIENTS OF UTILIZATION

Effective Floor Cavity Reflectance 20%

RC	RW			
	70	50	30	10
0	119	119	119	119
1	112	109	106	103
2	105	99	94	89
3	98	90	84	79
4	91	82	75	70
5	86	75	68	63
6	80	70	62	57
7	75	64	57	52
8	71	60	53	48
9	67	56	49	44
10	63	52	45	41

Note: Values are expressed as percent of total lumen output delivered to the task surface.

Linea[®] 1.5" Mini Direct

Linear Mini Direct, Remote Driver



PROJECT:

TYPE:

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

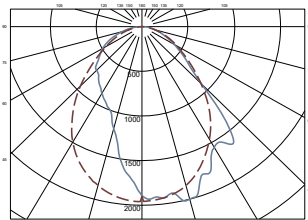
MULTIPLYING FACTORS: (Multiplying Factor is based on 3000K-83 120V IES file on website)

Wattage:	3W	4W	5W	6W	7W	8W	9W	10W
Factor:	0.31	0.42	0.53	0.63	0.72	0.81	0.90	1.0

CCT-CRI:	2700K-83	3000K-83	3500K-83	4000K-83	2700K-90+	3000K-90+	3500K-90+	4000K-90+
Factor:	0.92	0.97	1.0	1.02	0.81	0.84	0.86	0.89

LINEA 1.5" ASYMMETRIC LENS 10W 3500K 4FT

Total Watts: 37 Total Lumens: 4046
Source: 96 White LED's



LTL# 14664757.02

ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-40	2048	50.6
0-60	3358	83.0
0-90	4046	100.00
90-180	0	0.00

Efficacy = 110.8 Lumens / Watt

COEFFICIENTS OF UTILIZATION

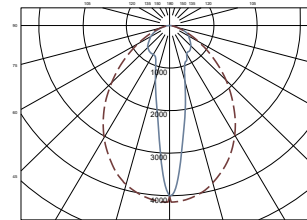
Effective Floor Cavity Reflectance 20%

RC	80			
	70	50	30	10
RCR				
0	119	119	119	119
1	110	105	101	97
2	100	92	86	81
3	92	82	74	68
4	85	73	65	58
5	78	66	57	51
6	72	60	51	45
7	67	54	46	40
8	63	50	41	36
9	59	46	38	32
10	55	42	35	30

Note: Values are expressed as percent of total lumen output delivered to the task surface.

LINEA 1.5" GRAZER LENS 10W 3500K 4FT

Total Watts: 37 Total Lumens: 4065
Source: 96 White LED's



LTL# 14664757.04

ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-40	2219	54.6
0-60	3418	84.1
0-90	4065	100.00
90-180	0	0.00

Efficacy = 111.3 Lumens / Watt

COEFFICIENTS OF UTILIZATION

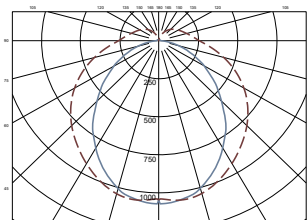
Effective Floor Cavity Reflectance 20%

RC	80			
	70	50	30	10
RCR				
0	119	119	119	119
1	110	106	102	98
2	101	94	88	82
3	93	84	76	70
4	86	75	67	61
5	80	68	60	54
6	75	62	54	48
7	70	57	49	44
8	65	53	45	40
9	62	49	42	36
10	58	46	39	34

Note: Values are expressed as percent of total lumen output delivered to the task surface.

LINEA 1.5" DROP LENS 10W 3500K 4FT

Total Watts: 37 Total Lumens: 4014
Source: 96 White LED's



LTL# 14664757.03

ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixt
0-40	1339	33.4
0-60	2397	59.7
0-90	3427	85.4
90-180	588	14.6

Efficacy = 109.9 Lumens / Watt

COEFFICIENTS OF UTILIZATION

Effective Floor Cavity Reflectance 20%

RC	80			
	70	50	30	10
RCR				
0	116	116	116	116
1	103	98	93	88
2	93	84	77	70
3	85	73	65	58
4	77	65	55	48
5	71	58	48	41
6	65	52	42	36
7	60	47	38	32
8	56	43	34	28
9	52	39	31	25
10	49	36	28	23

Note: Values are expressed as percent of total lumen output delivered to the task surface.

Linea[®] 1.5" Mini Direct

Linear Mini Direct, Remote Driver



PROJECT:

TYPE:

STATIC WHITE - DIMMING COMPATIBILITY:

Amerlux[®] Linea 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 ---

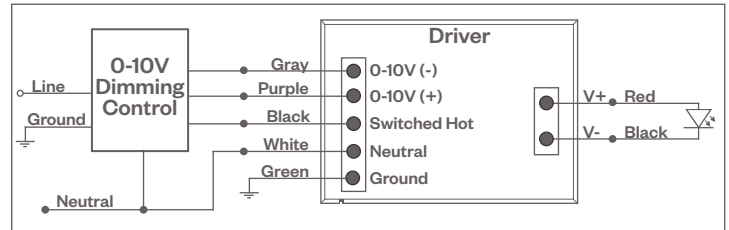
0-10V - DIMMING (Standard)

Integrates into a variety of building management and daylighting controls

Notes:

- 120V or 277V*
- 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

<u>Lutron:</u> Diva - DVSTV Maestro - MS-Z101 Nova-T - NTSTV-DV	<u>Wattstopper:</u> ADF-120277	<u>Leviton:</u> Renoir II
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Center System

Lutron Grafik Eye with GRX-TV1 Interface

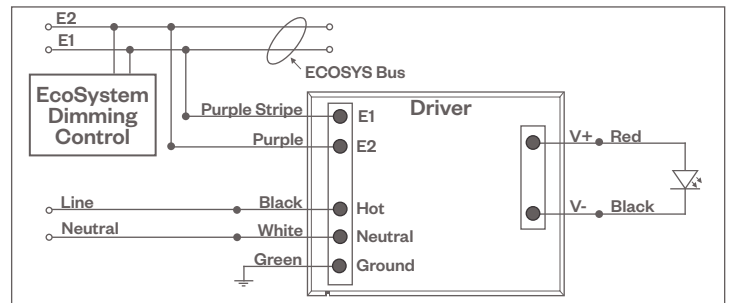
LUTRON LDE1 DIMMING

Integrates into Lutron EcoSystem building management

Notes:

- 120VAC or 277VAC*
- Dims down to 1% Soft-On/Fade-to-Black
- EcoSystem Control
- Consult Dimming manufacturer for installation instructions - DO NOT SHARE NEUTRALS!

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



Compatible Dimmers*:

Lutron ECO System

Pow Pak Dimming Modules
Energi Savr Node
Grafik Eye QS/Homeworks
QS Control Unit
Quantum Hub
Homeworks QS/My Room

Central System

Lutron EcoSystem compatible controls

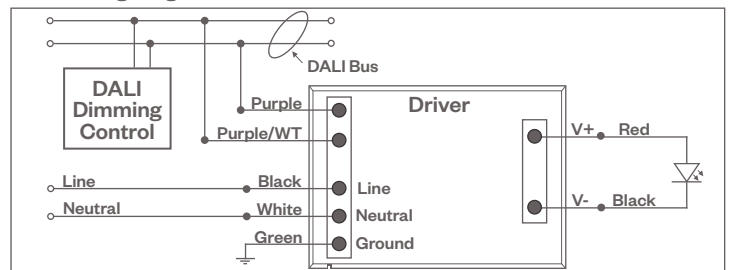
DALI - DALI DIMMING 120V-277V

Digital control protocol allows individual fixture control

Notes:

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

DALI Wiring Diagram



Compatible Dimmers*:

Wall Box

Leviton CD250 Controller

Center System

Dynalite
Fifth Light

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.