

BeveLED^{2.1} RETROFIT



DOWNLIGHT 3110RT



1" Regress

PROJECT INFORMATION

PROJECT _____

 DATE _____
 TYPE _____

BeveLED 2.1 Retrofit Recessed Downlight - The BeveLED 2.1 Retrofit provides maximum delivered lumens and optical performance through the optimization of thermal, optical and LED science in the smallest possible aperture, without compromising existing construction.

DELIVERED PERFORMANCE

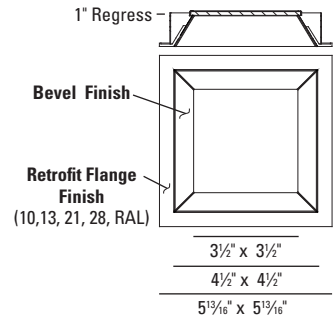
BeveLED 2.1 1" REGRESS DOWNLIGHT	9 Watts		12 Watts		16 Watts		24 Watts		33 Watts	
Color Rendering Index	80+ CRI	90+ HIGH CRI	80+ CRI	90+ HIGH CRI	80+ CRI	90+ HIGH CRI	80+ CRI	90+ HIGH CRI	80+ CRI	90+ HIGH CRI
Lumens per Watt	100	74	93	73	93	72	86	67	77	62
Source Lumens	1150	900	1300	1025	1725	1350	2400	1875	3025	2350
Delivered Lumens	850	675	1125	875	1475	1150	2050	1600	2600	2025
Color Consistency	2-Step MacAdam Ellipse									

Performance based on 3000K

CCT MULTIPLIER	2200K		2700K		3000K		3500K		4000K	
Color Rendering Index	80+ CRI	80+ CRI	90+ HIGH CRI	80+ CRI	90+ HIGH CRI	80+ CRI	80+ CRI	80+ CRI	80+ CRI	80+ CRI
Multiplier for Lumen Output	0.72	0.94	0.78	1.00	.78	1.00	1.06			

90+ CRI is not available for 2200K, 3500K, or 4000K

1" Regress



HOW TO SPECIFY

Ordering Example: Specify trim code and housing code to order:

Example: **3110RT - B1 - S - 10 - LSTD4 - 9012 - C3 - 27KS - 25 - RT10 - 120V - DIML2**

TRIM ORDERING INFORMATION

TRIM	OPTION	BEVEL STYLE	LENS	B1 BEVEL FINISH
3110RT	_____	_____	_____	_____
3110RT Square Retrofit Downlight 1" Regress	W Wet location ¹ ¹ Wet location, use with B1 trims only.	B1 1" Regress Bevel, Painted Die Cast	S Solite (provided standard) F Frosted	10 White 13 Statuary Bronze 21 Black 28 Metalized Grey RAL Custom Color (specify RAL #)
		AB1 1" Regress Bevel, Black Anodized Finish AC1 1" Regress Bevel, Clear Matte Anodized Finish	S Solite (provided standard) F Frosted	(Leave blank for AB1 and AC1 Bevel Styles)

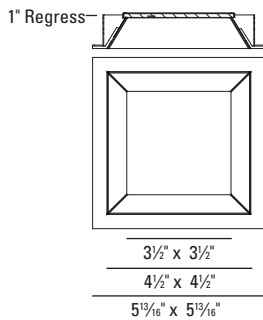


HOUSING ORDERING INFORMATION

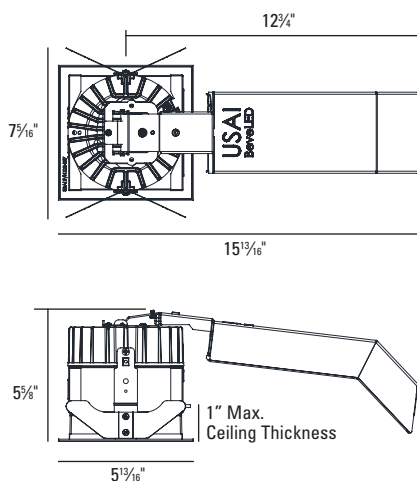
HOUSING CODE	WATTAGE	ENGINE CODE	COLOR	REFLECTOR	RETROFIT FLANGE FINISH	SELECT ONE VOLTAGE	OPTIONAL DIMMING DRIVER
LSTD4	_____	C3	_____	_____	RT _____	_____	_____
LSTD4 9009 9W LED 9012 12W LED 9016 16W LED 9024 24W LED 9033 33W LED See performance chart for precise lumen information.		C3	22KS 2200K, 80+ CRI	25 25° beam	10 White	120V 277V	For use with 120V or 277V DIML2 0-10V dim, 10% (provided standard) DIML4 Lutron A 3-wire/ECO, 1% DIML4H Lutron H ECO, 1% Fade ² DIML6A EldoLED 0-10V, 0.1%, logarithmic / Lutron controls DIML6B EldoLED 0-10V Linear, 0.1%, linear controls DIML6E EldoLED 0-10V, 1%, logarithmic/Lutron controls DIML6F EldoLED 0-10V, 1%, linear controls DIML7 EldoLED DALI, 0.1%
			27KS 2700K, 80+ CRI	50 50° beam	13 Statuary Bronze		
			30KS 3000K, 80+ CRI	90 90° beam	21 Black		
			35KS 3500K, 80+ CRI		28 Metalized Grey		
			40KS 4000K, 80+ CRI		RAL Custom Color (specify RAL #)		
			27KH 2700K, 90+ CRI			120V	For use with 120V only DIML3 Lutron A 2-wire, 1%, 120V only DIML19 Phase 2-wire dimming, 1%, 120V only ^{2,3}
			30KH 3000K, 90+ CRI			347V	For use with 347V only DIML15 0-10V dim, 1%, 347 only

² N/A with 9W
³ N/A with 33W

TRIM INFORMATION



HOUSING INFORMATION



SPECIFICATIONS

TRIM: 4-1/2" square aperture with a 1" regressed bevel, retained by four mounting clips. Die cast aluminum bevel is available in white, statuary bronze, black, and metalized grey finishes. Retrofit flange finish is available in white, statuary bronze, black, and metalized gray painted finishes; flange is part of the housing and the flange color is specified in the housing part number. If no color is selected, white will be provided. Custom colors available (provide RAL#).

TRIM LENS: Trim is shipped with integral solite lens standard; frosted lens available as an option.

REFLECTOR: Interchangeable precision injection molded specular polycarbonate reflector optimized for 25°, 50° or 90° beam distribution.

FIELD REPLACEABLE LIGHT ENGINE: Available in 5 lumen packages: 9W, 12W, 16W, 24W and 33W. Engine is field replaceable through the aperture without tools. See performance chart for precise lumen output information.

COLOR: BeveLED 2.1 is available in 5 color temperatures (2200K, 2700K, 3000K, 3500K, 4000K). All color options are tightly binned for fixture-to-fixture color consistency within a 2-Step MacAdam Ellipse. 80+ color rendering index provided standard. 90+ CRI available for 2700K and 3000K CCTs.

RATED LIFE: Based on IESNA LM80-2008 50,000 hours at 70% lumen maintenance (L70).

THERMAL MANAGEMENT: Proprietary high performance aluminum die cast heatsink for maximum LED life. Ambient temperatures at fixture location should not exceed 40°C during normal operation.

FIELD REPLACEABLE DRIVER: 0-10V, 100%-10% solid state electronic constant current driver with a high power factor provided standard and sources 2mA. Specify 120V or 277V. Driver complies with IEEE C62.41 surge protection.

DIMMING OPTIONS: Multiple dimming drivers available. See compatibility chart attached. Some on-time delay may be experienced depending on control system used. Note: DIML6A and DIML6E logarithmic control are intended for use with Lutron control systems; DIML6B and 6F linear control are intended for use with non-Lutron controls. DIML15 and DIML6 dimming drivers source 2mA.

EMERGENCY: No emergency options available.

MOUNTING: Installs from below. Fixture is held in place with (2) leaf springs attached to flanged die cast aluminum mounting collar, powder-coated with finish color of choice (specify color). If no color is selected, white will be provided.

HOUSING: Flanged die cast aluminum mounting collar is attached to die cast aluminum heatsink with 20 gauge black powder-coated steel sleeve. 16 gauge galvanized steel junction box contains driver and has (2) 7/8" knock outs.

CEILING CUT OUT: 5-1/2" x 5-1/2"

MAXIMUM CEILING THICKNESS: As per drawings above.

LISTINGS: Dry/Damp. Wet location option available with B1 trim only. NRTL/CSAUS tested to UL standards. IBEW union made.

WARRANTY: 5 years



NOTES:

- Not for use in corrosive environment.
- Use of pressure washer voids warranty.
- Not for use with acoustical ceiling tiles.

PHOTOMETRICS: Consult factory or website for IES files. Tested in accordance with IESNA LM79-2008.

DELIVERED PERFORMANCE

3110RT 16W 30KS 25°

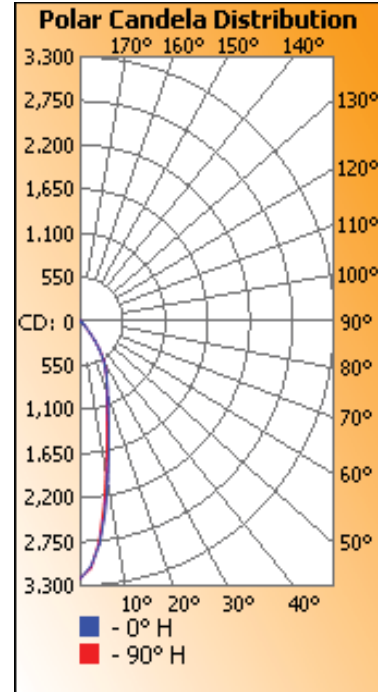
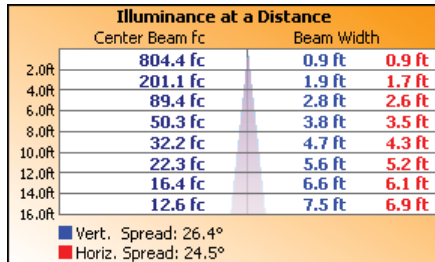
Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0			
RW %:	70	50	30	0	70	50	30	0	50	30	20	0	50	30	20	0	50	30	20	0	50	30	20	0
RCR: 0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.06	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.00	1.02	1.02	1.02	1.00
1	1.13	1.10	1.08	1.06	1.11	1.08	1.06	.94	1.04	1.02	1.01	1.01	.99	.98	.97	.96	.96	.96	.95	.93	.97	.96	.95	.93
2	1.08	1.03	.99	.95	1.05	1.01	.97	.87	.98	.95	.92	.95	.92	.90	.88	.86	.86	.84	.82	.80	.87	.84	.82	.80
3	1.02	.96	.91	.87	1.00	.94	.90	.81	.92	.88	.84	.89	.86	.83	.81	.79	.78	.74	.71	.70	.82	.79	.76	.75
4	.97	.89	.84	.80	.95	.88	.83	.76	.86	.82	.78	.84	.80	.77	.75	.72	.78	.74	.71	.70	.77	.74	.71	.70
5	.92	.84	.78	.74	.91	.83	.77	.71	.81	.76	.73	.79	.75	.72	.70	.67	.74	.70	.67	.65	.72	.69	.67	.65
6	.88	.79	.73	.69	.86	.78	.72	.67	.76	.72	.68	.75	.71	.67	.65	.62	.70	.66	.63	.62	.67	.64	.62	.61
7	.84	.74	.68	.64	.82	.74	.68	.63	.72	.67	.64	.71	.67	.63	.61	.58	.66	.62	.59	.58	.64	.60	.57	.56
8	.80	.70	.64	.60	.78	.70	.64	.59	.69	.63	.60	.68	.63	.60	.58	.55	.62	.58	.55	.54	.60	.56	.53	.52
9	.76	.67	.61	.57	.75	.66	.60	.56	.65	.60	.56	.64	.60	.56	.54	.51	.58	.54	.51	.50	.57	.53	.50	.49
10	.73	.63	.58	.54	.72	.63	.57	.53	.62	.57	.53	.61	.57	.53	.51	.48	.56	.52	.49	.48	.55	.51	.48	.47

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,001.9	67.6%
0-40	1,309.7	88.3%
0-60	1,450.7	97.9%
60-90	31.7	2.1%
70-100	12.1	0.8%
90-120	0	0%



3110RT 33W 30KS 25°

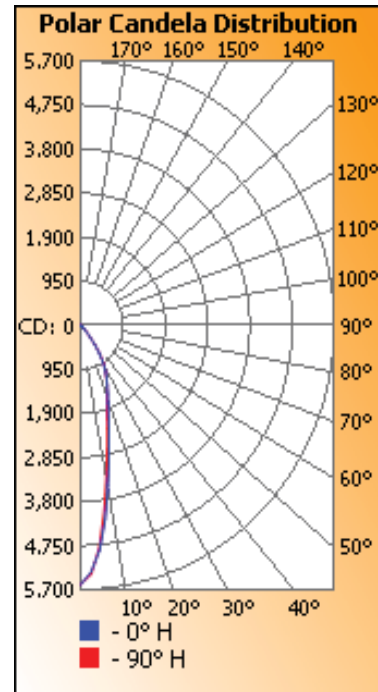
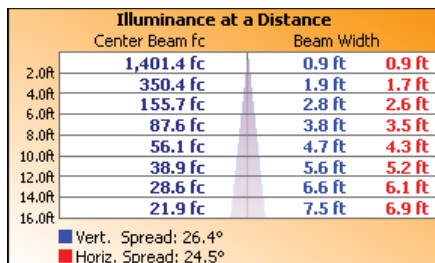
Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0			
RW %:	70	50	30	0	70	50	30	0	50	30	20	0	50	30	20	0	50	30	20	0	50	30	20	0
RCR: 0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.06	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.00	1.02	1.02	1.02	1.00
1	1.13	1.10	1.08	1.06	1.11	1.08	1.06	.94	1.04	1.02	1.01	1.01	.99	.98	.97	.96	.96	.96	.95	.93	.97	.96	.95	.93
2	1.08	1.03	.99	.95	1.05	1.01	.97	.87	.98	.95	.92	.95	.92	.90	.88	.86	.86	.84	.82	.80	.87	.84	.82	.80
3	1.02	.96	.91	.87	1.00	.94	.90	.81	.92	.88	.84	.89	.86	.83	.81	.79	.78	.74	.71	.70	.82	.79	.76	.75
4	.97	.89	.84	.80	.95	.88	.83	.76	.86	.82	.78	.84	.80	.77	.75	.72	.78	.74	.71	.70	.77	.74	.71	.70
5	.92	.84	.78	.74	.91	.83	.77	.71	.81	.76	.73	.79	.75	.72	.70	.67	.74	.70	.67	.65	.72	.69	.67	.65
6	.88	.79	.73	.69	.86	.78	.72	.67	.76	.72	.68	.75	.71	.67	.65	.62	.70	.66	.63	.62	.67	.64	.62	.61
7	.84	.74	.68	.64	.82	.74	.68	.63	.72	.67	.64	.71	.67	.63	.61	.58	.66	.62	.59	.58	.64	.60	.57	.56
8	.80	.70	.64	.60	.78	.70	.64	.59	.69	.63	.60	.68	.63	.60	.58	.55	.62	.58	.55	.54	.60	.56	.53	.52
9	.76	.67	.61	.57	.75	.66	.60	.56	.65	.60	.56	.64	.60	.56	.54	.51	.58	.54	.51	.50	.57	.53	.50	.49
10	.73	.63	.58	.54	.72	.63	.57	.53	.62	.57	.53	.61	.57	.53	.51	.48	.56	.52	.49	.48	.55	.51	.48	.47

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,745.5	67.6%
0-40	2,281.6	88.3%
0-60	2,527.3	97.9%
60-90	55.3	2.1%
70-100	21.0	0.8%
90-120	0	0%



DELIVERED PERFORMANCE

3110RT 16W 30KS 50°

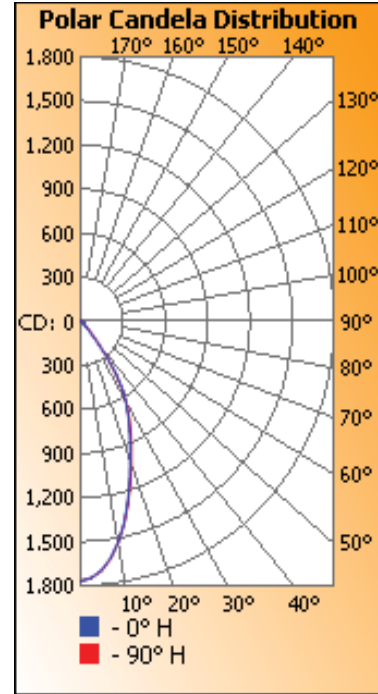
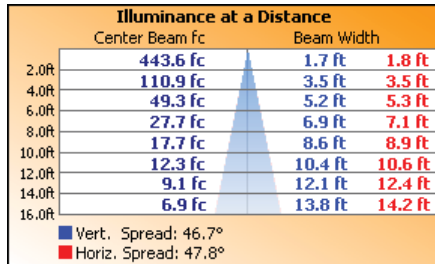
Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0			
RW %:	70	50	30	0	70	50	30	0	50	30	20	0	50	30	20	0	50	30	20	0	50	30	20	0
RCR: 0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.06	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.00	1.02	1.02	1.02	1.00
1	1.13	1.10	1.07	1.05	1.11	1.08	1.06	.93	1.04	1.02	1.00	1.00	.99	.97	.97	.96	.96	.94	.94	.93	.97	.96	.94	.93
2	1.07	1.02	.98	.94	1.05	1.00	.96	.86	.97	.94	.91	.94	.91	.89	.91	.89	.91	.89	.87	.85	.91	.89	.87	.85
3	1.01	.94	.89	.85	.99	.93	.88	.80	.90	.86	.83	.88	.84	.82	.86	.83	.86	.83	.80	.79	.86	.83	.80	.79
4	.96	.88	.82	.78	.94	.87	.81	.74	.84	.80	.76	.82	.78	.75	.81	.77	.74	.74	.73	.73	.81	.77	.74	.73
5	.91	.82	.76	.71	.89	.81	.75	.69	.79	.74	.70	.77	.73	.70	.76	.72	.69	.67	.66	.66	.76	.72	.69	.67
6	.86	.77	.70	.66	.84	.76	.70	.64	.74	.69	.65	.73	.68	.65	.71	.67	.64	.63	.63	.63	.71	.67	.64	.63
7	.82	.72	.66	.61	.80	.71	.65	.60	.70	.65	.61	.69	.64	.60	.67	.63	.60	.59	.59	.58	.67	.63	.60	.58
8	.77	.68	.61	.57	.76	.67	.61	.56	.66	.60	.57	.65	.60	.56	.64	.59	.56	.55	.55	.55	.64	.59	.56	.55
9	.74	.64	.57	.53	.72	.63	.57	.53	.62	.57	.53	.61	.56	.53	.60	.56	.53	.51	.51	.51	.60	.56	.53	.51
10	.70	.60	.54	.50	.69	.60	.54	.49	.59	.54	.50	.58	.53	.50	.57	.53	.50	.48	.48	.48	.57	.53	.50	.48

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	927.0	64.5%
0-40	1,252.7	87.2%
0-60	1,402.0	97.6%
60-90	34.9	2.4%
70-100	13.1	0.9%
90-120	0	0%



3110RT 33W 30KS 50°

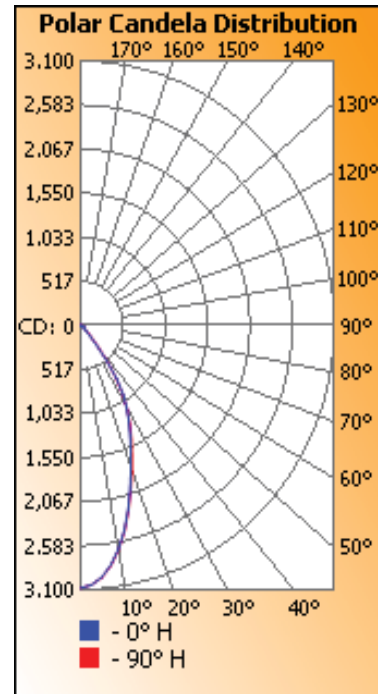
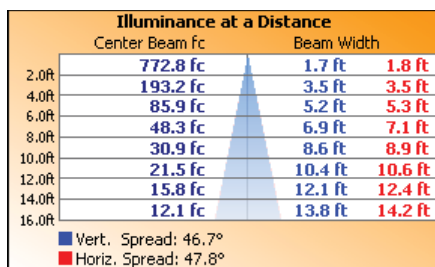
Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0			
RW %:	70	50	30	0	70	50	30	0	50	30	20	0	50	30	20	0	50	30	20	0	50	30	20	0
RCR: 0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.06	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.00	1.02	1.02	1.02	1.00
1	1.13	1.10	1.07	1.05	1.11	1.08	1.06	.93	1.04	1.02	1.00	1.00	.99	.97	.97	.96	.96	.94	.94	.93	.97	.96	.94	.93
2	1.07	1.02	.98	.94	1.05	1.00	.96	.86	.97	.94	.91	.94	.91	.89	.91	.89	.91	.89	.87	.85	.91	.89	.87	.85
3	1.01	.94	.89	.85	.99	.93	.88	.80	.90	.86	.83	.88	.84	.82	.86	.83	.86	.83	.80	.79	.86	.83	.80	.79
4	.96	.88	.82	.78	.94	.87	.81	.74	.84	.80	.76	.82	.78	.75	.81	.77	.74	.74	.73	.73	.81	.77	.74	.73
5	.91	.82	.76	.71	.89	.81	.75	.69	.79	.74	.70	.77	.73	.70	.76	.72	.69	.67	.66	.66	.76	.72	.69	.67
6	.86	.77	.70	.66	.84	.76	.70	.64	.74	.69	.65	.73	.68	.65	.71	.67	.64	.63	.63	.63	.71	.67	.64	.63
7	.82	.72	.66	.61	.80	.71	.65	.60	.70	.65	.61	.69	.64	.60	.67	.63	.60	.59	.59	.58	.67	.63	.60	.58
8	.77	.68	.61	.57	.76	.67	.61	.56	.66	.60	.57	.65	.60	.56	.64	.59	.56	.55	.55	.55	.64	.59	.56	.55
9	.74	.64	.57	.53	.72	.63	.57	.53	.62	.57	.53	.61	.56	.53	.60	.56	.53	.51	.51	.51	.60	.56	.53	.51
10	.70	.60	.54	.50	.69	.60	.54	.49	.59	.54	.50	.58	.53	.50	.57	.53	.50	.48	.48	.48	.57	.53	.50	.48

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,615.0	64.5%
0-40	2,182.4	87.2%
0-60	2,442.6	97.6%
60-90	60.8	2.4%
70-100	22.8	0.9%
90-120	0	0%



DELIVERED PERFORMANCE

3110RT 16W 30KS 90°

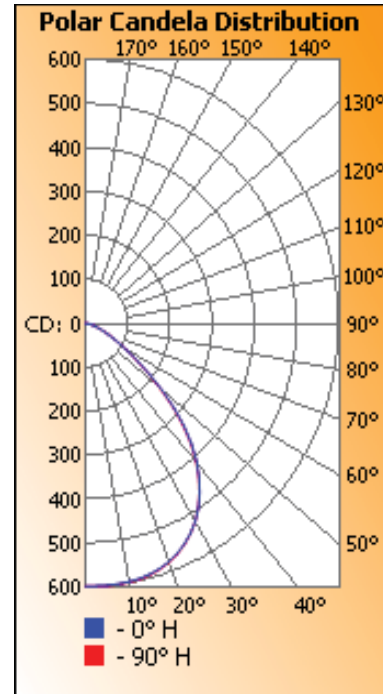
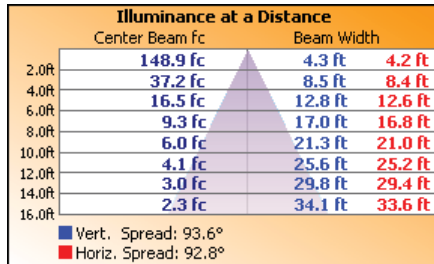
Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0			
RW %:	70	50	30	0	70	50	30	0	50	30	20	0	50	30	20	0	50	30	20	0	50	30	20	0
RCR: 0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.11	1.06	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.00	1.00	1.00	1.00
1	1.11	1.07	1.04	1.01	1.09	1.05	1.02	.89	1.01	.99	.96	.96	.97	.95	.93	.93	.94	.92	.91	.89	.89	.89	.89	.89
2	1.03	.96	.91	.86	1.01	.95	.89	.79	.91	.87	.83	.83	.88	.84	.81	.81	.85	.82	.80	.78	.78	.78	.78	.78
3	.95	.87	.80	.74	.93	.85	.79	.69	.82	.77	.72	.72	.80	.75	.71	.71	.77	.73	.70	.68	.68	.68	.68	.68
4	.88	.78	.71	.65	.86	.77	.70	.62	.74	.68	.64	.64	.72	.67	.63	.63	.70	.66	.62	.60	.60	.60	.60	.60
5	.82	.71	.63	.57	.80	.70	.62	.55	.68	.61	.56	.56	.66	.60	.56	.56	.64	.59	.55	.53	.53	.53	.53	.53
6	.76	.64	.56	.51	.74	.63	.56	.49	.62	.55	.50	.50	.60	.54	.50	.50	.59	.53	.49	.47	.47	.47	.47	.47
7	.71	.59	.51	.45	.69	.58	.51	.44	.57	.50	.45	.45	.55	.49	.45	.45	.54	.48	.44	.43	.43	.43	.43	.43
8	.66	.54	.46	.41	.65	.53	.46	.40	.52	.45	.41	.41	.51	.45	.40	.40	.50	.44	.40	.38	.38	.38	.38	.38
9	.62	.50	.42	.37	.61	.49	.42	.36	.48	.41	.37	.37	.47	.41	.37	.37	.46	.41	.36	.35	.35	.35	.35	.35
10	.58	.46	.39	.34	.57	.46	.39	.33	.45	.38	.34	.34	.44	.38	.33	.33	.43	.37	.33	.32	.32	.32	.32	.32

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	480.2	37.3%
0-40	779.3	60.5%
0-60	1,198.0	92.9%
60-90	91.0	7.1%
70-100	28.0	2.2%
90-120	0	0%



3110RT 33W 30KS 90°

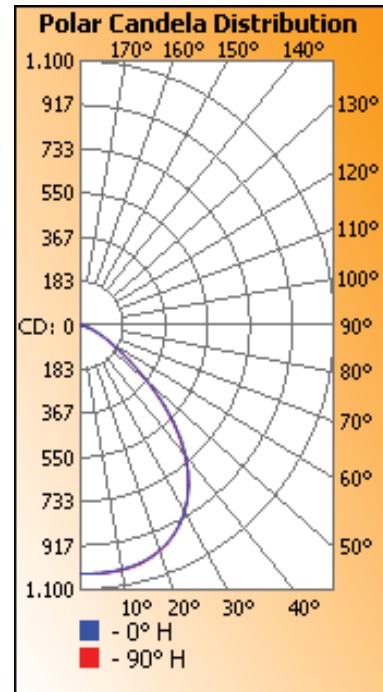
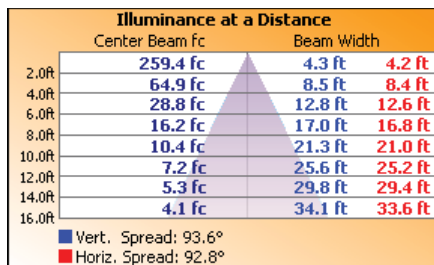
Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0			
RW %:	70	50	30	0	70	50	30	0	50	30	20	0	50	30	20	0	50	30	20	0	50	30	20	0
RCR: 0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.11	1.06	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.00	1.00	1.00	1.00
1	1.11	1.07	1.04	1.01	1.09	1.05	1.02	.89	1.01	.99	.96	.96	.97	.95	.93	.93	.94	.92	.91	.89	.89	.89	.89	.89
2	1.03	.96	.91	.86	1.01	.95	.89	.79	.91	.87	.83	.83	.88	.84	.81	.81	.85	.82	.80	.78	.78	.78	.78	.78
3	.95	.87	.80	.74	.93	.85	.79	.69	.82	.77	.72	.72	.80	.75	.71	.71	.77	.73	.70	.68	.68	.68	.68	.68
4	.88	.78	.71	.65	.86	.77	.70	.62	.74	.68	.64	.64	.72	.67	.63	.63	.70	.66	.62	.60	.60	.60	.60	.60
5	.82	.71	.63	.57	.80	.70	.62	.55	.68	.61	.56	.56	.66	.60	.56	.56	.64	.59	.55	.53	.53	.53	.53	.53
6	.76	.64	.56	.51	.74	.63	.56	.49	.62	.55	.50	.50	.60	.54	.50	.50	.59	.53	.49	.47	.47	.47	.47	.47
7	.71	.59	.51	.45	.69	.58	.51	.44	.57	.50	.45	.45	.55	.49	.45	.45	.54	.48	.44	.43	.43	.43	.43	.43
8	.66	.54	.46	.41	.65	.53	.46	.40	.52	.45	.41	.41	.51	.45	.40	.40	.50	.44	.40	.38	.38	.38	.38	.38
9	.62	.50	.42	.37	.61	.49	.42	.36	.48	.41	.37	.37	.47	.41	.37	.37	.46	.41	.36	.35	.35	.35	.35	.35
10	.58	.46	.39	.34	.57	.46	.39	.33	.45	.38	.34	.34	.44	.38	.33	.33	.43	.37	.33	.32	.32	.32	.32	.32

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	836.5	37.3%
0-40	1,357.7	60.5%
0-60	2,087.1	92.9%
60-90	158.6	7.1%
70-100	48.8	2.2%
90-120	0	0%



DIMMING DRIVER WIRING SCHEMES:

NOTES:

Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.

**IMPORTANT SAFETY INSTRUCTIONS
- SAVE THESE INSTRUCTIONS**

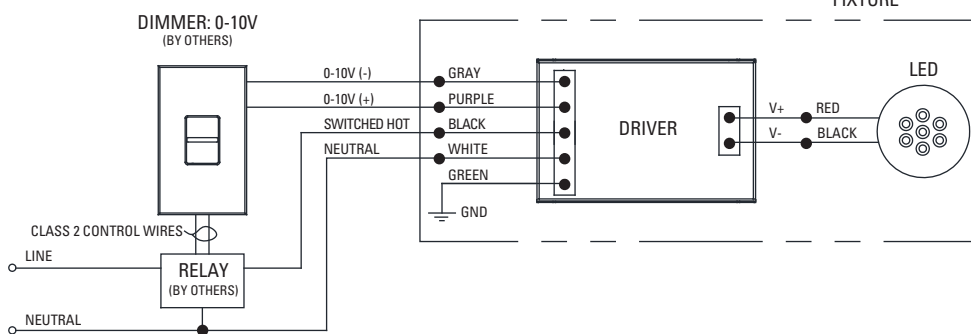
1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
3. De-energize the electrical circuit at the circuit breaker prior to installation process or servicing.
4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

D2 / DIML2 LED: 0-10V Dimming Driver Wiring (Dims down to 10%)

D2 / DIML2 Dimmer Compatibility Chart				
Manufacturer	Product	Part Number	Dimmed Light Output Range	Qty Fixtures Per Dimmer*
120V / 277V				
Crestron	iLux dimmer expansion module	CLS-EXP-DIMFLV	100% - 10%	Use source current per fixture specification sheet to determine number of fixtures per dimmer. Max number of fixtures is limited by dimmer load rating.
Crestron	DIN Rail dimmer	DIN-4DIMFLV4	100% - 10%	
Crestron	DIN Rail analog output module	DIN-A08	100% - 10%	
Crestron	8 Channel dimmer module	GLX-DIMFLV8	100% - 10%	
Crestron	8 Channel dimmer module	GLXP-DIMFLV8	100% - 10%	
Leviton	IlumaTech dimmer	IP710-DLX	100% - 10%	
Lightolier (Philips)	Vega	V2000FAMU	100% - 10%	
Lutron	Diva	DVTV-XX	100% - 10%	

* NOTE: Refer to dimmer manufacturer's documentation for installation instructions and circuit details.

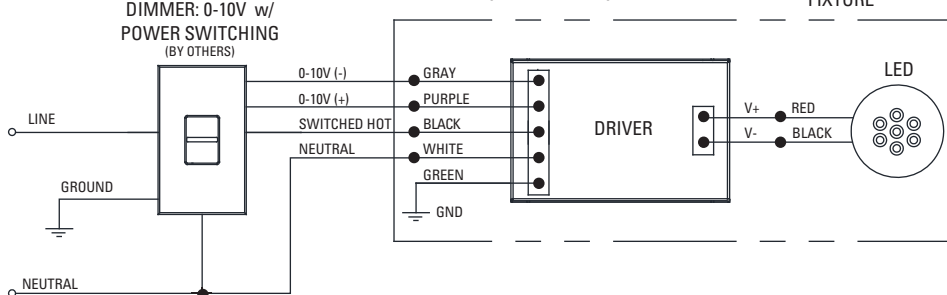
**D2 / DIML2
0-10V DIMMING W/RELAY TO SWITCH POWER**



NOTE:

If switched, non-dimming operation is desired, cap off purple and gray wires individually at installation. Do NOT cap purple and gray wires together.

**D2 / DIML2
0-10V DIMMING (NO RELAY)**



NOTE:

If switched, non-dimming operation is desired, cap off purple and gray wires individually at installation. Do NOT cap purple and gray wires together.

DIMMING DRIVER WIRING SCHEMES:

NOTES:

Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.

**IMPORTANT SAFETY INSTRUCTIONS
- SAVE THESE INSTRUCTIONS**

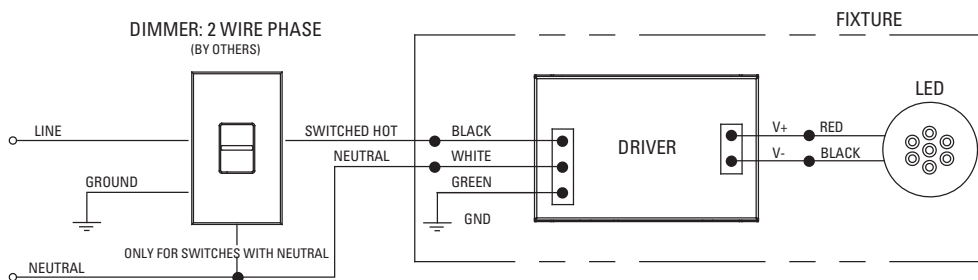
1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
3. De-energize the electrical circuit at the circuit breaker prior to installation process or servicing.
4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

D3 / DIML3 LED: Lutron Hi-Lume A-Series 2 Wire Fwd Phase (with neutral) / LED Dimming Driver Wiring (Dims down to 1%) 120V

D3 / DIML3 Dimmer Compatibility Chart					
Manufacturer	Product	Part Number	Dimmed Light Output Range	Qty Fixtures Per Dimmer*	
				Fixture Wattage	
120V Only					
				39W and Less	40W - 80W
ETC	Sensor+ Cabinet	ELV10	100% - 1%	1 - 26	1 - 13
ETC	Unison DRd Cabinet	ELV10	100% - 1%	1 - 26	1 - 13
Lutron	Maestro Wireless® 600W dimmer	MRF2-6ND-120-	100% - 1%	1 - 8	1 - 4
Lutron	Maestro Wireless® 1000W dimmer	MRF2-10ND-120-	100% - 1%	1 - 13	1 - 6
Lutron	HomeWorks® QS adaptive dimmer	HQRD-6NA-	100% - 1%	1 - 8	1 - 4
Lutron	HomeWorks® QS 600W dimmer	HQRD-6ND-	100% - 1%	1 - 8	1 - 4
Lutron	HomeWorks® QS 1000 W dimmer	HQRD-10ND-	100% - 1%	1 - 13	1 - 6
Lutron	Caseta Wireless® Pro 1000W dimmer	PD-10NXD-	100% - 1%	1 - 13	1 - 6
Lutron	Stanza® dimmer	SZ-6ND-	100% - 1%	1 - 8	1 - 4
Lutron	RadioRA® 2 adaptive dimmer	RRD-6NA-	100% - 1%	1 - 8	1 - 4
Lutron	RadioRA® 2 1000 W dimmer	RRD-10ND-	100% - 1%	1 - 6	1 - 3
Lutron	myRoom DIN power module	MQSE-4A1-D	100% - 1%	1 - 6	1 - 3
Lutron	HomeWorks® QS wallbox power module	HQRJ-WPM-6D-120-	100% - 1%	1 - 26	1 - 13
Lutron	Homeworks® DIN power module	LQSE-4A1-D	100% - 1%	1 - 6	1 - 3
Lutron	HomeWorks® wallbox power module	HV1-WPM-6D-120	100% - 1%	1 - 26	1 - 13
Lutron	GRAFIK Eye® QS control unit	QSGR-, QSGRJ-	100% - 1%	1 - 26	1 - 13
Lutron	GRAFIK Eye® 3000 control unit	GRX-3100-, GRX-3500-	100% - 1%	1 - 26	1 - 13
Lutron	RPM-4U module	HW-RPM-4U-120, LP-RPM-4U-120	100% - 1%	1 - 26	1 - 13
Lutron	RPM-4A module	HW-RPM-4A-120, LP-RPM-4A-120	100% - 1%	1 - 26	1 - 13
Lutron	GP dimming panels	Various	100% - 1%	1 - 26	1 - 13
Lutron	Ariadni CL 250W dimmer	AYCL-253P-	100%-1%	1 - 8	1 - 4
Lutron	Diva CL 250W dimmer	DVCL-253P-, DVSCCL-253P-	100%-1%	1 - 8	1 - 4
Lutron	Grafik T CL or RF CL dimmer	GT-250M-, GTJ-250M-	100%-1%	1 - 8	1 - 4
Lutron	Nova T CL 250W dimmer	NTCL-250-	100%-1%	1 - 10	1 - 5

* NOTE: Refer to dimmer manufacturer's documentation for installation instructions and circuit details.

**D3 / DIML3
2 WIRE PHASE DIMMING**



DIMMING DRIVER WIRING SCHEMES:

NOTES:

Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.

**IMPORTANT SAFETY INSTRUCTIONS
- SAVE THESE INSTRUCTIONS**

1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
3. De-energize the electrical circuit at the circuit breaker prior to installation process or servicing.
4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

D4 / DIML4 LED: Lutron Hi-Lume A-Series LED Driver with 3-Wire FL Control / LED Dimming Driver Wiring (Dims down to 1%)

D4 / DIML4 3-Wire Dimmer Compatibility Chart					
Manufacturer	Product	Part Number	Dimmed Light Output Range	Qty Fixtures Per Control*	
				Fixture Wattage	
120V Only				39W and Less	40W - 80W
ETC	Sensor+ Cabinet	D20 Dimming module	100% - 1%	1-53	1-26
ETC	Unison DRd Cabinet	D20F Dimming module	100% - 1%	1-53	1-26
Lutron	Nova T	NTF-10-	100%-1%	1-41	1-20
Lutron	Nova T	NTF-103P-	100%-1%	1-20	1-10
Lutron	Nova	NF-10-	100%-1%	1-41	1-20
Lutron	Nova	NF-103P-	100%-1%	1-20	1-10
Lutron	Vareo	VF-10-	100%-1%	1-20	1-10
Lutron	Skylark	SF-10P-, SF-103P-	100%-1%	1-20	1-10
Lutron	Diva	DVF-103P-, DVSCF-103P-	100%-1%	1-20	1-10
Lutron	Ariadni	AYF-103P-	100%-1%	1-20	1-10
Lutron	Vierti	VTF-6A-	100%-1%	1-15	1-7
Lutron	Maestro	MAF-6AM-, MSCF-6AM-	100%-1%	1-15	1-7
Lutron	Maestro Wireless	MRF2-F6AN-DV-	100%-1%	1-15	1-7
Lutron	RadioRA 2	RRD-F6AN-DV-	100%-1%	1-15	1-7
Lutron	HomeWorks QS	HQRD-F6AN-DV	100%-1%	1-15	1-7
Lutron	Interfaces	PHPM-3F-120, PHPM-3F-DV	100%-1%	1-41	1-20
Lutron	GP Dimming Panels	Various	100%-1%	1-41	1-20
277V Only				40W and Less	41W - 80W
ETC	Sensor+ Cabinet	D20 Dimming module	100% - 1%	1-53	1-26
ETC	Unison DRd Cabinet	D20F Dimming module	100% - 1%	1-53	1-26
Lutron	Nova T	NTF-10-277-	100%-1%	1-44	1-22
Lutron	Nova T	NTF-103P-277-	100%-1%	1-33	1-16
Lutron	Nova	NF-10-277-	100%-1%	1-44	1-22
Lutron	Nova	NF-103P-277-	100%-1%	1-33	1-16
Lutron	Skylark	SF-12P-277-, SF-12P-277-3	100%-1%	1-33	1-16
Lutron	Diva	DVF-103P-277-, DVSCF-103P-277-	100%-1%	1-33	1-16
Lutron	Ariadni	AYF-103P-277-	100%-1%	1-44	1-22
Lutron	Vierti	VTF-6A-	100%-1%	1-33	1-16
Lutron	Maestro	MAF-6AM-277-, MSCF-6AM-277-	100%-1%	1-20	1-10
Lutron	Maestro Wireless	MRF2-F6AN-DV-	100%-1%	1-33	1-16
Lutron	RadioRA 2	RRD-F6AN-DV-	100%-1%	1-33	1-16
Lutron	HomeWorks QS	HQRD-F6AN-DV	100%-1%	1-33	1-16
Lutron	Interfaces	PHPM-3F-DV	100%-1%	1-88	1-44
Lutron	GP Dimming Panels	Various	100%-1%	1-88	1-44

* NOTE: Number of fixtures may be higher if wattage is less than maximum values shown. Refer to dimmer manufacturer's documentation for installation instructions and circuit details.

DIML4 wiring diagrams continued on next page

DIMMING DRIVER WIRING SCHEMES:

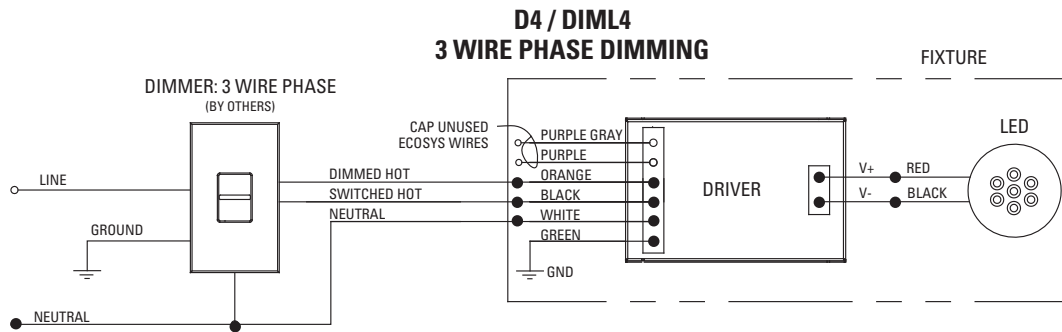
NOTES:

Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.

**IMPORTANT SAFETY INSTRUCTIONS
- SAVE THESE INSTRUCTIONS**

1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
3. De-energize the electrical circuit at the circuit breaker prior to installation process or servicing.
4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

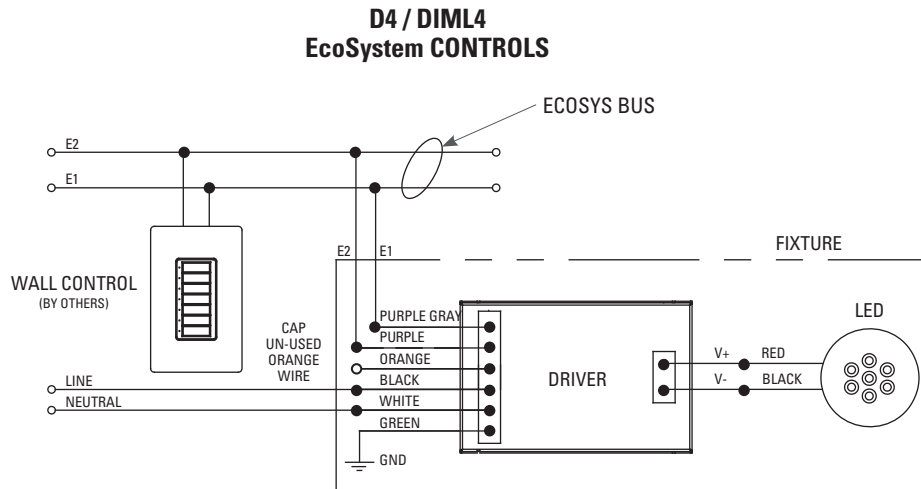
D4 / DIML4 LED: Lutron Hi-Lume A-Series LED Driver with 3-Wire FL Control / LED Dimming Driver Wiring (Dims down to 1%)



D4 / DIML4 LED: Lutron Hi-Lume A-Series LED Driver with EcoSystem Control / LED Dimming Driver Wiring (Dims down to

D4 / DIML4 EcoSystem Dimmer Compatibility Chart					
Manufacturer	Product	Part Number	Dimmed Light Output Range	Qty Fixtures Per Control*	
				Fixture Wattage	
120V / 277V					
				39W and Less	40W - 80W
Lutron	PowPak dimming module	RMJ-ECO32-DV-B	100%-1%	1-32	1-16
Lutron	Energi Savr Node	QSN-1ECO-S, QSN-2ECO-S	100%-1%	1-64	1-32
Lutron	GRAFIK Eye QS (120V ONLY)	QSGRJ- E, QSGR- E	100%-1%	1-64	1-32
Lutron	Quantum	Various	100%-1%	1-64	1-32

* NOTE: Number of fixtures may be higher if wattage is less than maximum values shown. Refer to dimmer manufacturer's documentation for installation instructions and circuit details.



DIMMING DRIVER WIRING SCHEMES:

NOTES:

Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.

**IMPORTANT SAFETY INSTRUCTIONS
- SAVE THESE INSTRUCTIONS**

1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
3. De-energize the electrical circuit at the circuit breaker prior to installation process or servicing.
4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

D4E / DIML4E LED: Lutron 5 Series EcoSystem LED Driver / LED Dimming Driver Wiring (Dims down to 5%)

D4E / DIML4E EcoSystem Dimmer Compatibility Chart					
Manufacturer	Product	Part Number	Dimmed Light Output Range	Qty Fixtures Per Control*	
				Fixture Wattage	
120V / 277V				39W and Less	40W - 80W
Lutron	PowPak dimming module	RMJ-ECO32-DV-B	100%-5%	1-32	1-16
Lutron	Energi Savr Node	QSN-1ECO-S, QSN-2ECO-S	100%-5%	1-64	1-32
Lutron	GRAFIK Eye QS (120V ONLY)	QSGRJ- E, QSGR- E	100%-5%	1-64	1-32
Lutron	Quantum	Various	100%-5%	1-64	1-32

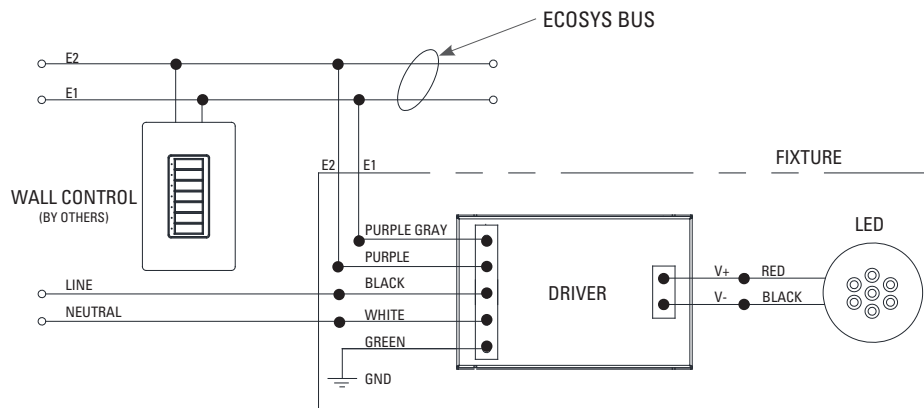
* NOTE: Number of fixtures may be higher if wattage is less than maximum values shown. Refer to dimmer manufacturer's documentation for installation instructions and circuit details.

D4H / DIML4H LED: Lutron H Series EcoSystem LED Driver with Fade to Black (dims down to 1%)

D4H / DIML4H EcoSystem Dimmer Compatibility Chart					
Manufacturer	Product	Part Number	Dimmed Light Output Range	Qty Fixtures Per Control*	
				Fixture Wattage	
120V / 277V				39W and Less	40W - 80W
Lutron	PowPak dimming module	RMJ-ECO32-DV-B	100%-1%	1-32	1-16
Lutron	Energi Savr Node	QSN-1ECO-S, QSN-2ECO-S	100%-1%	1-64	1-32
Lutron	GRAFIK Eye QS (120V ONLY)	QSGRJ- E, QSGR- E	100%-1%	1-64	1-32
Lutron	Quantum	Various	100%-1%	1-64	1-32

* NOTE: Number of fixtures may be higher if wattage is less than maximum values shown. Refer to dimmer manufacturer's documentation for installation instructions and circuit details.

**D4E / DIML4E and D4H / DIML 4H
EcoSystem CONTROLS**



IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS

1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
3. De-energize the electrical circuit at the circuit breaker prior to installation process or servicing.
4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

D6A / DIML6A and D6E / DIML6E LED Dimming Compatibility Table

D6A / DIML6A and D6E / DIML6E are linearly programmed dimming drivers for use with logarithmic-style dimming controls (e.g., Lutron and others listed in the table below)

D6A / DIML6A = EldoLED SOLOdrive 0-10V control dims from 100% to 0.1%

D6E / DIML6E = EldoLED ECOdrive 0-10V control dims from 100% to 1%

D6A / DIML6A and D6E / DIML6E Dimmer Compatibility Chart					
Manufacturer	Product	Part Number	Dimmed Light Output Range		Qty Fixtures Per Dimmer*
			DIML6A	6E	
120V & 277V					
Lutron	Diva	DVTV/NFTV with PP-20	99% - 0.1%	1%	Refer to manufacturer's dimmer load rating for maximum and minimum fixture quantities per dimmer. Enlightened compatible.
Lutron	Nova T	NTFTV with PP-20	99% - 0.1%	1%	
Lutron	Energi Savr Node	QSN-4T16-S	100% - 0.1%	1%	
Lutron	GP Dimming Panels	TVM2 Module	99% - 0.1%	1%	
Lutron	Interfaces	GRX-TV1 w/ GRX3503	100% - 0.1%	1%	
Sensor Switch	nIO	nIO EZ	100% - 0.1%	1%	
enlighted	Control Unit	CU-3E-1R	100% - 0.1%	1%	

* NOTE: Refer to dimmer manufacturer's documentation for installation instructions and circuit details.

D6B / DIML6B and D6F / DIML6F LED Dimming Compatibility Table

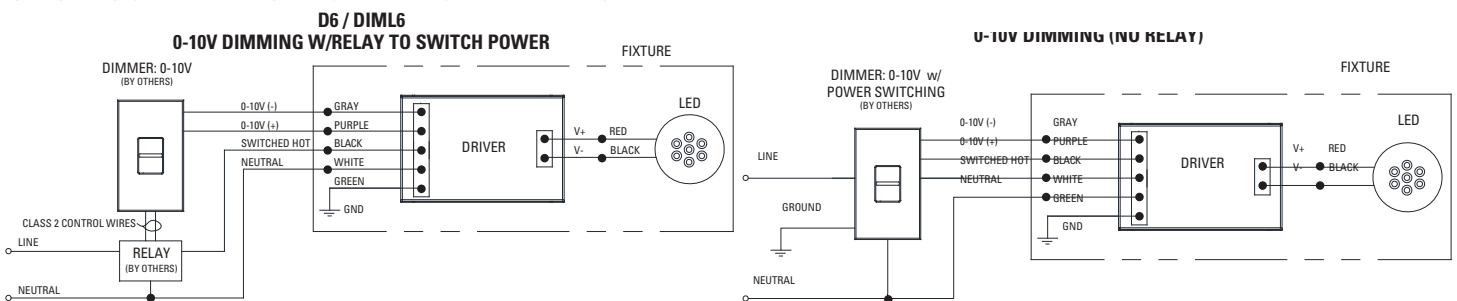
D6B / DIML6B and D6F / DIML6F are logarithmic-programmed dimming drivers for use with linear-style dimming controls (e.g., Crestron, non-Lutron and others listed below)

D6B / DIML6B = EldoLED SOLOdrive 0-10V control dims from 100% to 0.1% D6F / DIML6F = EldoLED ECOdrive 0-10V control dims from 100% to 1%

D6B / DIML6B and D6F / DIML6F Dimmer Compatibility Chart					
Manufacturer	Product	Part Number	Dimmed Light Output Range		Qty Fixtures Per Dimmer*
			DIML6B	6F	
120V & 277V					
Bush-Jaeger	Electronic potentiometer	2112U-101	100% - 0.1%	1%	Refer to manufacturer's dimmer load rating for maximum and minimum fixture quantities per dimmer. Enlightened compatible.
Jung	Electronic potentiometer	240-10	100% - 0.1%	1%	
Leviton	Iluma Tech dimmer	IP710-DLX	100% - 0.1%	1%	
Lightolier (Philips)	Momentum (120V ONLY)	ZP600FAM120	100% - 0.1%	1%	
Merten	Electronic potentiometer	5729	100% - 0.1%	1%	
Pass & Seymour	Titan	CD4FB-W	100% - 0.1%	1%	
Watt Stopper	Miro	DCLV1	100% - 0.1%	1%	
Synergy	Wallbox Dimmers	ISD BC	100% - 0.1%	1%	
ABB	i-bus	SD/S 2.16.1	100% - 0.1%	1%	
Crestron	Modules	GLX-DIMFLV8, GLXP-DIMFLV8	100% - 0.1%	1%	
Crestron	Green Light	GLPAC-DIMFLV4-, GLPAC-DIMFLV8-	100% - 0.1%	1%	
Crestron	Green Light Power Pack	GLPP-DIMFLVEX-PM, GLPP-1DIMFLV2EX-PM, GLPP-1DIMFLV3EX-PM	100% - 0.1%	1%	
Crestron	DIN Rail Analog Output Module	DIN-A08	100% - 0.1%	1%	
Crestron	DIN Rail 0-10V Fluorescent Dimmer	DIN-4DIMFLV4	100% - 0.1%	1%	
Crestron	iLux 0-10V Dimmer Expansion Module	CLS-EXP-DIMFLV	100% - 0.1%	1%	
enlighted	Control Unit	CU-3E-1R	100% - 0.1%	1%	

DIMMING DRIVER WIRING SCHEMES:

NOTES: Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.



DIMMING DRIVER WIRING SCHEMES:

NOTES:

Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.

IMPORTANT SAFETY INSTRUCTIONS

- SAVE THESE INSTRUCTIONS

1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
3. De-energize the electrical circuit at the circuit breaker prior to installation process or servicing.
4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

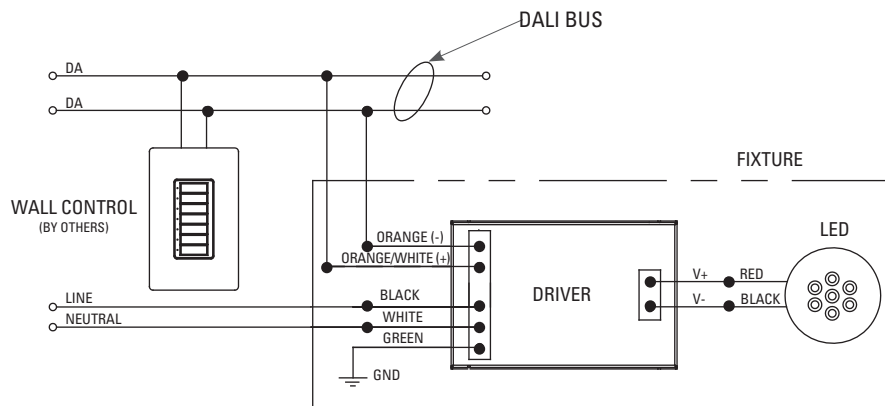
D7 / DIML7 and D7E Dimming Driver Wiring

D7 / DIML7 and D7E are linearly programmed dimming drivers.

D7 / DIML7 = EldoLED SOLOdrive DALI control dims from 100% to 0.1%

D7E = EldoLED ECOdrive DALI control dims from 100% to 1%

**D7 / DIML7 / D7E
DALI CONTROLS**



DIMMING DRIVER WIRING SCHEMES:

NOTES:

Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.

**IMPORTANT SAFETY INSTRUCTIONS
- SAVE THESE INSTRUCTIONS**

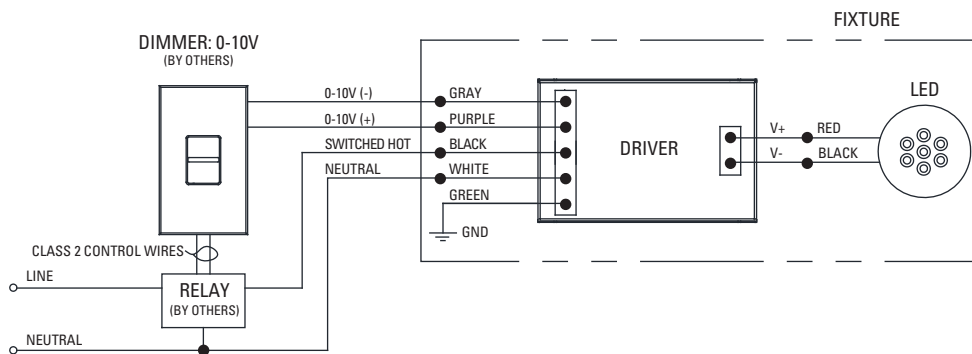
1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
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4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

D15 / DIML15 LED: 0-10V, 347V Dimming Driver Wiring (Dims down to 1%) 347V Only

D15 / DIML15 Dimmer Compatibility Chart			
Manufacturer	Product	Dimmed Light Output Range	Qty Fixtures Per Dimmer*
347			Use source current per fixture specification sheet to determine number of fixtures per dimmer. Max number of fixtures is limited by dimmer load rating.
Acuity	Synergy ISD-BC	100% - 1%	
Douglas Lighting	WPN-5721, WPN-5822	100% - 1%	
Hubbell	Light Hawk2 LHD-IRS3-N347-xx	100% - 1%	
Leviton	Illumatech IP710-DLZ with 347V relay	100% - 1%	
Leviton	Centura Fluorescent Control System	100% - 1%	
Lutron	Nova NFTV-* dimmer plus 347V relay	100% - 1%	
Lutron	Diva DDTV-* dimmer plus 347V relay	100% - 1%	

* NOTE: Refer to dimmer manufacturer's documentation for installation instructions and circuit details.

**D15 / DIML15
0-10V DIMMING W/RELAY TO SWITCH POWER**



NOTE:
If switched, non-dimming operation is desired, cap off purple and gray wires individually at installation. Do NOT cap purple and gray wires together.

DIMMING DRIVER WIRING SCHEMES:

NOTES:

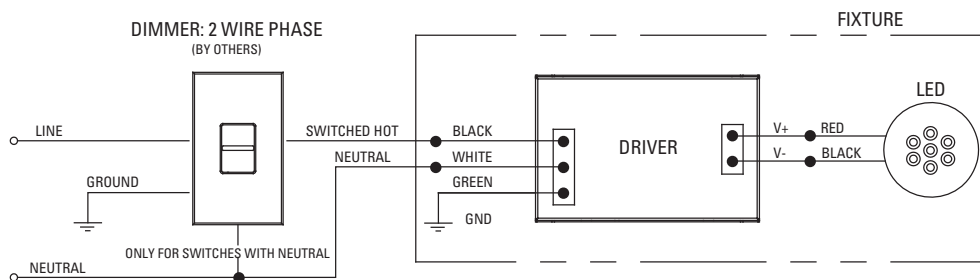
Wiring diagrams are examples of typical installations intended to illustrate the number of wires that must be run to fixture. These diagrams are not intended to specify all equipment necessary for a given dimming circuit. Refer to specific dimmer manufacturer's documentation for details.

**IMPORTANT SAFETY INSTRUCTIONS
- SAVE THESE INSTRUCTIONS**

1. Keep these instructions in a safe place for future reference.
2. Only qualified electricians in accordance to local codes should install these fixtures.
3. De-energize the electrical circuit at the circuit breaker prior to installation process or servicing.
4. Make sure all connections are in accordance with the National Electrical Code and any local regulations.
5. Cap any wires not used separately (not together).

**D19 / DIML19 LED: Hatch XTC series or equivalent - Forward and Reverse Phase Dimming Driver.
Dims down to 1% contingent upon dimmer specification and load. 120V only.**

**D19 / DIML19
2 WIRE PHASE DIMMING**



D19 / DIML19 Dimmer Compatibility Chart

120V ONLY		
Forward Phase / TRIAC Dimming		
Manufacturer	Product	Qty Fixtures Per Dimmer
Leviton	IPL06-10Z	Use fixture wattage per fixture specification sheet to determine number of fixtures per dimmer. Max number of fixtures is limited by dimmer load rating.
	6613-xxx	
Lutron	S-600P	
	S-603P	
	DV-600P	
	DV-603P	
	DVSC-603P	
	CT-600P	
	CT-603P	

120V ONLY		
Reverse Phase / ELV Dimming		
Manufacturer	Product	Qty Fixtures Per Dimmer
Leviton	6615	Use fixture wattage per fixture specification sheet to determine number of fixtures per dimmer. Max number of fixtures is limited by dimmer load rating.
	IPE04-xxx	
Lutron	NTELV-300	
	NTELV-600	
	SELV-300P	
	SELV-303P	
	DVELV-300P	
	DVELV-303P	