



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-9.6-8MM-3528-24-IP20-27K ALU-016R-DCL\_IESNA95.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-1995  
[TEST] 01  
[TESTLAB] LED-123 LAB  
[TESTDATE] 12-15-2020  
[ISSUEDATE] XX-XXX-1995  
[NEARFIELD]  
[LAMPPOSITION] 0,0  
[OTHER] LED123  
[MANUFAC] LED123  
[LUMCAT] FLX-9.6-8MM-3528-24-IP20-27K  
[LUMINAIRE] ALU-016R-DCL  
[LAMPCAT] 1  
[LAMP] 3528 120LED CRI90 PCB 8MM  
[BALLAST] DC24V

### CHARACTERISTICS

Lumens Per Lamp	667.9 (1 lamp)
Total Lamp Lumens	667.9
Luminaire Lumens	668
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	71
Total Luminaire Watts	9.4
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.32
Spacing Criterion (90-270)	2.14
Spacing Criterion (Diagonal)	1.38
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.00 m
Luminous Width (90-270)	0.04 m
Luminous Height	0.00 m



### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4008	7263	8805
55	3848	8546	10612
65	3595	10541	13741
75	3090	14154	18563
85	2882	32498	49104

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## CANDELA TABULATION

	<u>0</u>	<u>30</u>	<u>60</u>	<u>90</u>	<u>120</u>	<u>150</u>	<u>180</u>	<u>210</u>	<u>240</u>	<u>270</u>
0	158.891	158.891	158.891	158.891	158.891	158.891	158.891	158.891	158.891	158.891
5	160.770	165.820	168.900	172.220	167.870	171.460	159.230	153.340	143.940	144.320
10	158.660	174.460	183.230	187.970	182.720	179.010	155.580	142.660	127.230	123.840
15	156.220	179.070	188.160	197.250	188.290	182.780	151.550	131.140	111.230	101.760
20	153.150	181.440	201.600	211.390	201.730	180.990	147.330	119.170	77.500	40.700
25	147.710	180.540	210.370	225.340	209.980	185.790	140.160	108.990	19.580	20.540
30	140.990	185.020	221.180	233.090	220.610	188.030	131.330	88.130	15.100	6.020
35	132.800	184.260	222.720	242.620	222.530	187.200	121.790	47.490	4.670	4.860
40	124.350	183.100	229.500	242.880	229.120	187.010	112.380	15.230	3.580	3.070
45	113.410	182.660	228.350	249.150	226.690	182.720	99.650	12.160	2.050	2.370
50	101.380	173.310	229.950	248.260	229.250	174.660	87.740	7.170	1.790	2.110
55	88.320	168.320	224.000	243.580	224.510	166.660	73.090	4.420	1.660	2.050
60	75.330	155.840	217.020	237.500	217.660	157.950	59.460	3.200	1.660	1.980
65	60.800	147.330	209.220	232.380	210.110	147.140	44.670	2.750	1.730	2.050
70	46.210	131.650	199.810	217.920	200.900	129.660	30.460	2.560	1.790	2.180
75	32.000	116.930	176.260	192.260	177.790	115.140	17.980	2.370	1.920	2.240
80	19.520	101.700	150.720	185.920	151.870	98.880	8.960	2.180	1.980	2.300
85	10.050	84.740	141.950	171.260	142.270	83.330	3.650	2.050	2.050	2.430
90	5.380	68.290	133.820	153.860	132.100	64.060	1.220	2.050	2.180	2.560
95	2.880	41.980	90.560	135.420	88.130	36.420	1.280	2.110	2.370	2.750
100	1.980	32.960	97.020	130.560	96.000	20.350	1.150	2.180	2.500	2.880
105	1.920	5.950	93.440	119.550	91.200	4.740	1.220	2.240	2.620	3.070
110	1.860	3.900	17.730	52.480	17.340	2.880	1.280	2.300	2.750	3.200
115	1.730	1.980	6.400	10.880	6.400	1.860	1.410	2.370	2.880	3.260
120	1.730	1.280	4.480	4.290	4.290	1.410	1.470	2.500	2.940	3.330
125	1.790	1.090	3.520	3.140	3.650	1.220	1.600	2.560	2.940	3.330
130	1.980	1.020	2.180	2.300	2.180	1.150	1.660	2.620	3.010	3.330
135	2.050	1.220	1.730	1.280	1.860	1.220	1.790	2.620	3.010	3.390
140	2.110	1.280	1.540	1.150	1.660	1.340	1.860	2.690	3.010	3.330
145	2.180	1.410	1.540	1.090	1.540	1.470	1.920	2.690	3.010	3.330
150	2.180	1.470	1.600	1.150	1.600	1.600	2.050	2.690	2.940	3.260
155	2.240	1.600	1.730	1.280	1.730	1.730	2.110	2.690	2.880	3.140
160	2.300	1.730	1.860	1.470	1.860	1.860	2.180	2.620	2.820	3.070
165	2.370	1.860	1.920	1.660	1.980	1.980	2.240	2.620	2.750	2.940
170	2.430	1.980	2.110	1.860	2.110	2.110	2.300	2.500	2.560	2.750
175	2.430	2.180	2.240	2.050	2.300	2.240	2.370	2.430	2.430	2.560
180	2.366	2.366	2.366	2.366	2.366	2.366	2.366	2.366	2.366	2.366

## Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	158.891	158.891	158.891
5	143.360	155.460	160.770
10	125.440	146.750	158.660
15	108.540	137.730	156.220
20	75.390	124.100	153.150
25	18.880	107.900	147.710
30	14.720	87.940	140.990
35	4.420	59.650	132.800
40	3.520	22.340	124.350
45	1.980	12.670	113.410
50	1.660	11.140	101.380
55	1.600	4.930	88.320
60	1.600	3.390	75.330
65	1.660	2.820	60.800
70	1.730	2.560	46.210
75	1.860	2.370	32.000
80	1.920	2.180	19.520

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<b>85</b>	2.110	2.050	10.050
<b>90</b>	2.240	2.050	5.380
<b>95</b>	2.370	2.180	2.880
<b>100</b>	2.500	2.240	1.980
<b>105</b>	2.690	2.370	1.920
<b>110</b>	2.820	2.430	1.860
<b>115</b>	2.880	2.500	1.730
<b>120</b>	3.010	2.560	1.730
<b>125</b>	3.070	2.690	1.790
<b>130</b>	3.070	2.750	1.980
<b>135</b>	3.070	2.750	2.050
<b>140</b>	3.070	2.820	2.110
<b>145</b>	3.070	2.820	2.180
<b>150</b>	3.010	2.820	2.180
<b>155</b>	2.940	2.820	2.240
<b>160</b>	2.880	2.750	2.300
<b>165</b>	2.750	2.750	2.370
<b>170</b>	2.560	2.620	2.430
<b>175</b>	2.430	2.560	2.430
<b>180</b>	2.366	2.366	2.366

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : FLX-9.6-8MM-3528-24-IP20-27K ALU-016R-DCL\_IESNA95.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	57.87	8.70	8.70
0-30	119.41	17.90	17.90
0-40	194.62	29.10	29.10
0-60	369.08	55.30	55.30
0-80	530.68	79.50	79.40
0-90	589.63	88.30	88.30
10-90	574.52	86.00	86.00
20-40	136.75	20.50	20.50
20-50	221.43	33.20	33.20
40-70	261.76	39.20	39.20
60-80	161.60	24.20	24.20
70-80	74.30	11.10	11.10
80-90	58.95	8.80	8.80
90-110	66.21	9.90	9.90
90-120	71.07	10.60	10.60
90-130	73.35	11.00	11.00
90-150	76.41	11.40	11.40
90-180	78.32	11.70	11.70
110-180	12.11	1.80	1.80
0-180	667.95	100.00	100.00

Total Luminaire Efficiency = 100.00%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	15.11
10-20	42.76
20-30	61.53
30-40	75.22
40-50	84.68
50-60	89.77
60-70	87.31
70-80	74.30
80-90	58.95
90-100	40.45
100-110	25.76
110-120	4.86
120-130	2.28
130-140	1.70
140-150	1.37
150-160	1.04
160-170	0.65
170-180	0.22

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## COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	116	116	116	116	112	112	112	112	105	105	105	98	98	98	91	91	91	88
1	102	96	90	85	98	92	87	83	86	82	78	80	76	73	74	72	69	66
2	91	81	73	66	88	79	71	65	73	67	61	68	63	58	63	59	55	52
3	83	70	61	54	79	68	59	52	63	56	50	59	53	47	55	49	45	42
4	75	62	52	44	72	60	50	43	55	48	42	52	45	40	48	42	38	35
5	69	55	45	38	66	53	44	37	49	41	35	46	39	34	43	37	32	30
6	63	49	39	32	61	47	38	32	44	36	31	41	35	29	39	33	28	26
7	59	44	35	28	56	43	34	28	40	32	27	38	31	26	35	29	25	23
8	54	40	31	25	52	39	31	25	37	29	24	34	28	23	32	26	22	20
9	51	37	28	22	49	36	28	22	34	26	21	32	25	21	30	24	20	18
10	48	34	26	20	46	33	25	20	31	24	19	29	23	19	28	22	18	16

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## UGR TABLE - CORRECTED

### Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

### Room Size

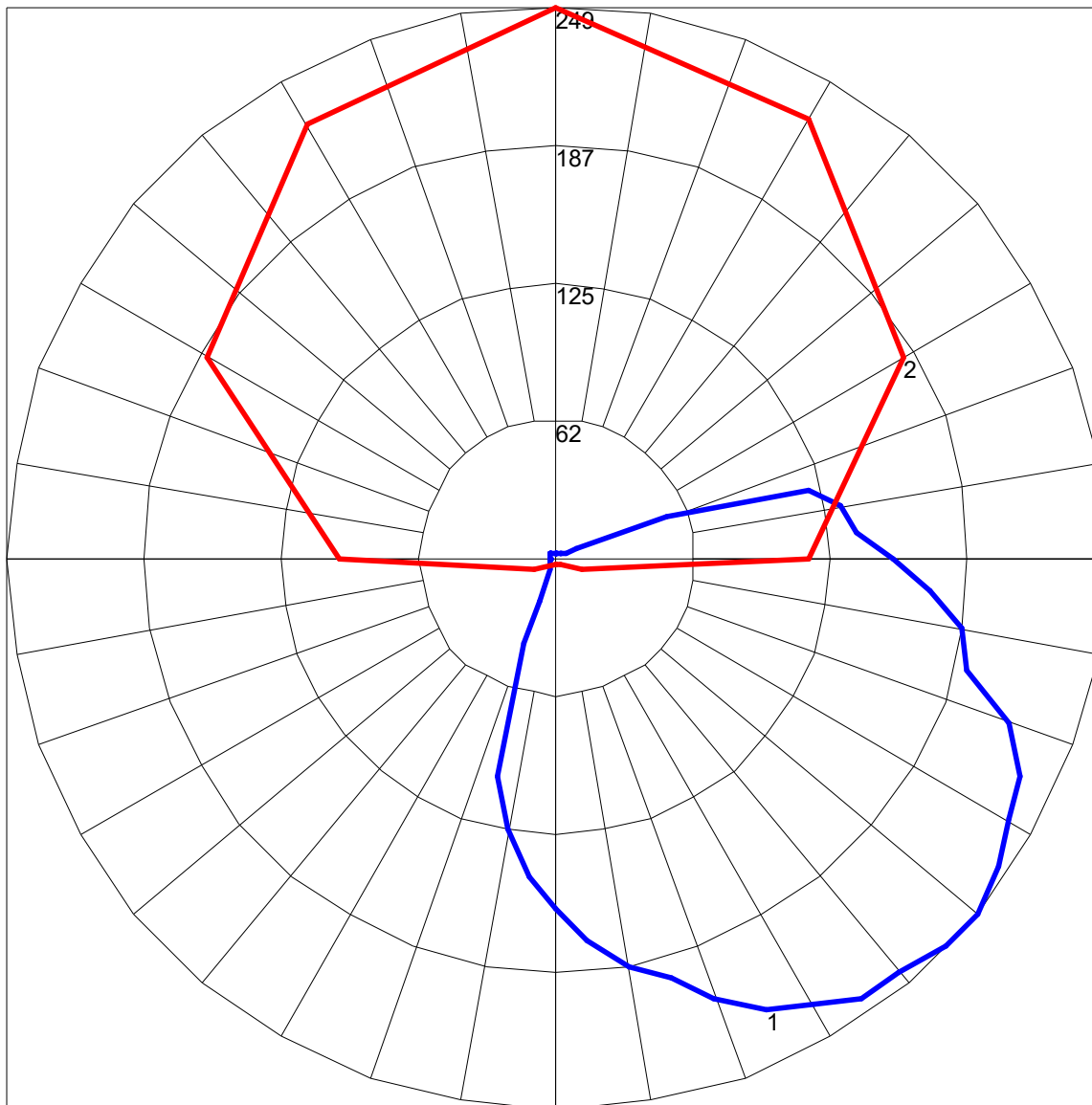
		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	16.3	17.8	16.8	18.4	19.0	22.4	23.9	22.9	24.4	25.0
	3H	18.3	19.7	18.8	20.2	20.8	25.7	27.1	26.2	27.6	28.3
	4H	19.0	20.3	19.6	20.9	21.5	27.2	28.5	27.8	29.1	29.8
	6H	19.6	20.8	20.2	21.4	22.1	28.9	30.2	29.5	30.8	31.4
	8H	19.8	21.0	20.4	21.6	22.3	29.9	31.1	30.5	31.7	32.4
	12H	20.0	21.1	20.5	21.7	22.4	31.0	32.1	31.6	32.7	33.4
4H	2H	18.2	19.5	18.7	20.1	20.7	23.0	24.4	23.6	24.9	25.6
	3H	20.5	21.7	21.1	22.3	23.0	26.7	27.8	27.3	28.4	29.1
	4H	21.5	22.6	22.1	23.2	23.9	28.4	29.5	29.0	30.1	30.8
	6H	22.3	23.3	22.9	23.9	24.6	30.3	31.3	30.9	31.9	32.6
	8H	22.6	23.5	23.3	24.2	24.9	31.4	32.3	32.0	32.9	33.6
	12H	22.9	23.7	23.5	24.4	25.1	32.6	33.5	33.3	34.1	34.8
8H	4H	23.0	23.9	23.7	24.6	25.3	28.8	29.7	29.4	30.4	31.1
	6H	24.3	25.1	25.0	25.8	26.5	31.0	31.8	31.6	32.4	33.2
	8H	24.9	25.6	25.5	26.3	27.0	32.3	33.0	32.9	33.7	34.4
	12H	25.4	26.0	26.0	26.7	27.5	33.8	34.4	34.5	35.1	35.9
12H	4H	23.5	24.3	24.1	25.0	25.7	28.9	29.7	29.5	30.4	31.1
	6H	25.0	25.7	25.7	26.3	27.1	31.2	31.9	31.8	32.5	33.3
	8H	25.8	26.4	26.4	27.1	27.9	32.5	33.2	33.2	33.8	34.6

Maximum UGR = 35.9

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## POLAR GRAPH



Maximum Candela = 249.15 Located At Horizontal Angle = 90, Vertical Angle = 45

# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)

# 2 - Horizontal Cone Through Vertical Angle (45) (Through Max. Cd.)