



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-14.4-10MM-3528-24-IP20-27K ALU-016R-DFR\_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-14.4-10MM-3528-24-IP20-27K  
[LUMINAIRE] ALU-016R-DFR  
[LAMPCAT] 1  
[LAMP] 3528 180LED CRI90 PCB 10MM  
[BALLAST] DC24V

### CHARACTERISTICS

Lumens Per Lamp	950.9 (1 lamp)
Total Lamp Lumens	950.9
Luminaire Lumens	951
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	67
Total Luminaire Watts	14.2
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	2.06
Spacing Criterion (Diagonal)	1.42
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	5392	9622	11895
55	5019	10992	14312
65	4651	13205	18297
75	4400	17843	25106
85	5267	40398	64905

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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	227.719	227.719	227.719	227.719	227.719	227.719	227.719	227.719	227.719	227.719
5	233.090	239.870	243.460	246.660	243.140	238.980	230.400	216.000	203.650	201.790
10	230.850	248.380	260.290	266.370	259.840	247.170	225.410	200.830	180.540	176.130
15	226.300	254.270	274.620	283.710	274.110	252.740	217.980	183.680	155.780	148.740
20	219.140	257.790	287.170	299.390	286.340	256.380	208.450	165.310	130.560	121.090
25	209.540	258.560	297.220	312.770	296.130	257.220	196.480	145.280	105.090	94.210
30	199.170	256.510	304.510	323.260	303.360	254.980	182.210	124.740	81.980	70.980
35	184.960	252.930	309.180	331.070	308.350	249.790	166.460	104.900	62.590	53.250
40	169.150	245.760	310.660	335.550	310.080	242.560	148.670	85.760	47.100	39.550
45	152.580	235.520	308.990	336.580	308.350	232.580	130.240	68.740	35.330	29.890
50	133.950	222.530	304.000	334.140	303.170	219.330	111.810	53.570	26.690	22.590
55	115.200	208.580	296.000	328.510	294.910	204.220	92.670	40.580	19.900	17.220
60	96.900	191.940	285.700	320.380	284.350	188.220	74.370	29.950	14.720	13.180
65	78.660	173.570	273.090	309.440	271.420	169.600	57.860	20.930	10.820	10.050
70	61.380	155.840	257.220	291.200	255.300	151.680	41.860	13.890	7.550	7.550
75	45.570	137.540	232.060	260.030	229.820	133.310	27.840	8.770	5.310	5.570
80	30.660	118.780	196.800	244.290	195.580	114.750	15.940	5.380	3.900	4.420
85	18.370	100.930	180.860	226.370	177.410	97.340	6.980	3.710	3.330	3.780
90	10.370	83.710	169.980	202.110	167.040	80.580	3.520	3.260	3.070	3.460
95	5.440	56.830	118.270	175.680	117.120	52.540	2.180	3.200	3.200	3.650
100	3.390	39.420	105.280	146.620	104.060	37.760	1.540	3.200	3.330	3.840
105	3.070	32.060	89.220	117.180	87.870	29.890	1.660	3.200	3.520	4.030
110	2.820	23.230	69.440	88.960	68.290	21.760	1.790	3.140	3.650	4.160
115	2.500	14.780	52.030	64.320	50.240	13.950	1.920	3.140	3.780	4.290
120	2.300	7.810	35.780	45.060	35.070	8.260	2.050	3.260	3.900	4.420
125	2.430	3.520	24.130	30.340	23.620	4.160	2.180	3.390	3.970	4.480
130	3.200	1.730	15.870	20.030	15.360	2.050	2.370	3.460	3.970	4.540
135	3.260	2.180	8.900	12.740	9.660	1.790	2.500	3.520	4.030	4.540
140	3.330	2.300	4.670	7.550	5.440	1.980	2.620	3.580	4.030	4.540
145	3.460	2.430	2.560	3.780	2.880	2.180	2.750	3.650	4.030	4.480
150	3.580	2.560	2.500	1.980	2.500	2.370	2.880	3.650	4.030	4.420
155	3.650	2.750	2.690	2.110	2.620	2.560	3.010	3.650	3.900	4.290
160	3.710	2.880	2.880	2.300	2.820	2.690	3.140	3.650	3.840	4.160
165	3.780	3.070	3.010	2.560	2.940	2.880	3.330	3.650	3.710	4.030
170	3.840	3.200	3.200	2.820	3.140	3.070	3.460	3.650	3.650	3.840
175	3.840	3.330	3.390	3.140	3.330	3.200	3.580	3.580	3.460	3.650
180	3.510	3.510	3.510	3.510	3.510	3.510	3.510	3.510	3.510	3.510

## Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	227.719	227.719	227.719
5	203.650	215.230	233.090
10	180.540	200.190	230.850
15	155.900	183.170	226.300
20	130.820	164.930	219.140
25	105.340	145.020	209.540
30	82.180	125.310	199.170
35	62.780	105.340	184.960
40	47.230	86.460	169.150
45	35.390	69.570	152.580
50	26.750	54.210	133.950
55	19.970	40.960	115.200
60	14.780	30.080	96.900
65	10.880	20.990	78.660
70	7.550	13.890	61.380
75	5.310	8.900	45.570
80	3.900	5.570	30.660

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<b>85</b>	3.390	3.900	18.370
<b>90</b>	3.140	3.520	10.370
<b>95</b>	3.260	3.580	5.440
<b>100</b>	3.460	3.520	3.390
<b>105</b>	3.650	3.390	3.070
<b>110</b>	3.780	3.330	2.820
<b>115</b>	3.840	3.260	2.500
<b>120</b>	3.970	3.330	2.300
<b>125</b>	4.030	3.460	2.430
<b>130</b>	4.100	3.520	3.200
<b>135</b>	4.160	3.580	3.260
<b>140</b>	4.160	3.710	3.330
<b>145</b>	4.100	3.710	3.460
<b>150</b>	4.100	3.710	3.580
<b>155</b>	4.030	3.710	3.650
<b>160</b>	3.900	3.710	3.710
<b>165</b>	3.840	3.650	3.780
<b>170</b>	3.650	3.650	3.840
<b>175</b>	3.520	3.580	3.840
<b>180</b>	3.510	3.510	3.510

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : FLX-14.4-10MM-3528-24-IP20-27K ALU-016R-DFR\_IESNA95.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	82.93	8.70	8.70
0-30	176.10	18.50	18.50
0-40	290.56	30.60	30.60
0-60	541.08	56.90	56.90
0-80	754.26	79.30	79.30
0-90	829.86	87.30	87.30
10-90	808.35	85.00	85.00
20-40	207.63	21.80	21.80
20-50	332.79	35.00	35.00
40-70	366.70	38.60	38.60
60-80	213.19	22.40	22.40
70-80	97.00	10.20	10.20
80-90	75.59	7.90	7.90
90-110	85.09	8.90	8.90
90-120	103.46	10.90	10.90
90-130	112.01	11.80	11.80
90-150	118.24	12.40	12.40
90-180	121.03	12.70	12.70
110-180	35.94	3.80	3.80
0-180	950.89	100.00	100.00

Total Luminaire Efficiency = 100.00%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	21.50
10-20	61.43
20-30	93.17
30-40	114.46
40-50	125.16
50-60	125.35
60-70	116.19
70-80	97.00
80-90	75.59
90-100	51.83
100-110	33.26
110-120	18.37
120-130	8.54
130-140	4.05
140-150	2.18
150-160	1.50
160-170	0.95
170-180	0.33

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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	104	104	104	97	97	97	90	90	90	87
1	103	96	91	86	98	93	88	83	86	82	78	80	77	74	74	72	69	66
2	92	82	74	68	88	79	72	66	74	68	62	68	63	59	63	59	56	53
3	83	71	62	55	80	69	60	54	64	57	51	59	53	48	55	50	46	43
4	76	63	53	46	72	60	52	45	56	49	43	52	46	41	49	43	39	36
5	69	56	46	39	66	54	45	38	50	42	36	47	40	35	44	38	33	31
6	64	50	40	34	61	48	39	33	45	37	32	42	35	30	39	34	29	27
7	59	45	36	29	57	44	35	29	41	33	28	38	32	27	36	30	26	23
8	55	41	32	26	53	40	31	26	37	30	25	35	28	24	33	27	23	21
9	51	37	29	23	49	36	28	23	34	27	22	32	26	21	30	25	20	18
10	48	34	26	21	46	33	26	21	32	25	20	30	24	19	28	23	19	17

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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

X=2H	Y=2H	16.9	18.3	17.4	18.9	19.5	23.1	24.6	23.6	25.1	25.7
	3H	18.7	20.1	19.3	20.7	21.3	26.4	27.7	26.9	28.3	28.9
	4H	19.5	20.8	20.1	21.4	22.0	27.9	29.2	28.5	29.8	30.5
	6H	20.2	21.4	20.8	22.0	22.6	29.6	30.8	30.2	31.4	32.1
	8H	20.4	21.6	21.0	22.2	22.9	30.6	31.7	31.2	32.3	33.0
	12H	20.7	21.8	21.3	22.4	23.1	31.7	32.8	32.3	33.4	34.1

### UGR Viewed Endwise

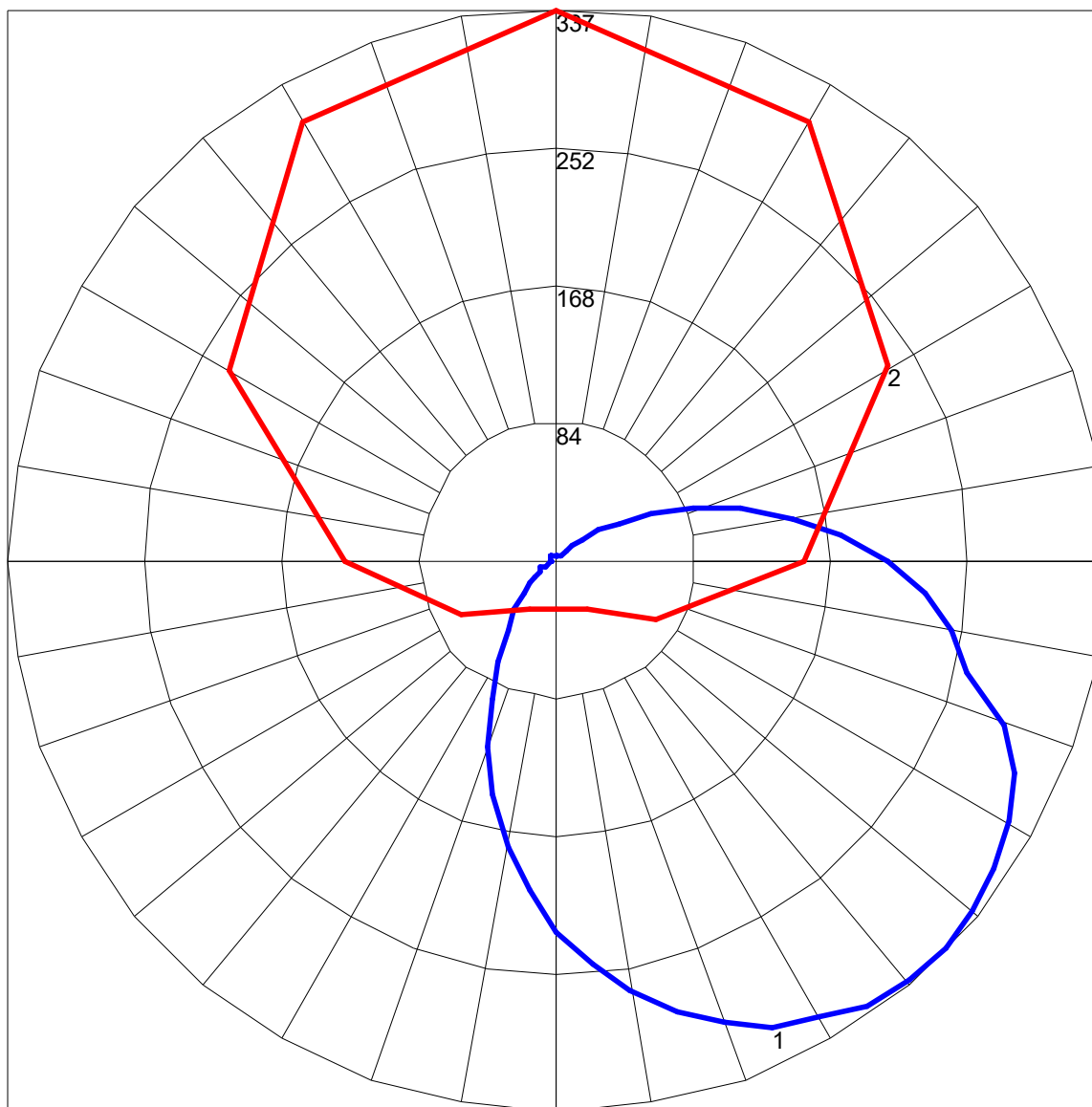
4H	2H	18.6	19.9	19.2	20.5	21.2	23.7	24.9	24.2	25.5	26.2
	3H	20.8	21.9	21.4	22.6	23.3	27.3	28.4	27.9	29.0	29.7
	4H	21.8	22.8	22.4	23.5	24.2	29.0	30.1	29.7	30.7	31.4
	6H	22.7	23.6	23.3	24.2	24.9	31.0	31.9	31.6	32.5	33.3
	8H	23.0	23.9	23.6	24.5	25.3	32.0	32.9	32.7	33.5	34.3
	12H	23.3	24.1	24.0	24.8	25.5	33.3	34.1	33.9	34.7	35.5
8H	4H	23.4	24.2	24.0	24.9	25.6	29.4	30.3	30.1	30.9	31.7
	6H	24.6	25.3	25.2	26.0	26.7	31.6	32.3	32.3	33.0	33.8
	8H	25.1	25.8	25.8	26.5	27.3	32.9	33.5	33.6	34.2	35.0
	12H	25.7	26.2	26.3	26.9	27.8	34.4	35.0	35.1	35.7	36.5
12H	4H	23.8	24.6	24.5	25.3	26.0	29.5	30.3	30.1	30.9	31.7
	6H	25.3	25.9	26.0	26.6	27.4	31.7	32.4	32.4	33.1	33.9
	8H	26.0	26.6	26.7	27.3	28.1	33.1	33.7	33.8	34.4	35.2

Maximum UGR = 36.5

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## POLAR GRAPH



Maximum Candela = 336.58 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.)