



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-14.4-10MM-3528-24-IP20-27K LL-0746 ALU-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] LL-0746 ALU LL-0746 DFR
 [LAMPCAT] 1
 [LAMP] 3528 180LED CRI90 PCB 10MM
 [BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	710.7 (1 lamp)
Total Lamp Lumens	710.7
Luminaire Lumens	465
Total Luminaire Efficiency	65 %
Luminaire Efficacy Rating (LER)	32
Total Luminaire Watts	14.4
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.42
Spacing Criterion (90-270)	2.10
Spacing Criterion (Diagonal)	1.50
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.00 m
Luminous Width (90-270)	0.02 m
Luminous Height	0.00 m



LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	5546	8939	10314
55	5811	10730	12715
65	6251	13706	16720
75	6994	19532	23617
85	11452	48720	63824

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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	96.198	96.198	96.198	96.198	96.198	96.198	96.198	96.198	96.198	96.198
5	98.560	101.820	103.230	104.580	102.020	100.350	95.300	90.370	85.570	86.020
10	98.620	105.790	110.660	112.770	108.160	102.590	92.930	83.710	76.160	76.480
15	97.920	109.440	117.440	120.450	113.860	104.830	89.660	76.670	66.620	66.110
20	96.260	112.260	123.200	127.230	118.980	106.430	85.700	69.180	57.660	57.340
25	94.080	114.110	128.000	132.930	123.260	107.200	81.090	61.820	49.280	48.640
30	91.840	115.200	131.970	137.790	126.720	107.840	75.970	54.210	41.730	40.320
35	88.450	115.650	135.100	141.570	129.150	107.330	69.950	46.400	33.790	32.960
40	83.840	115.710	137.280	144.320	130.750	105.470	63.420	38.980	27.460	26.880
45	78.460	114.500	138.430	145.920	131.460	102.660	56.700	32.000	22.020	21.700
50	73.340	112.060	138.500	146.500	131.260	99.010	49.020	25.470	17.660	17.410
55	66.690	108.740	137.540	145.920	130.240	94.720	41.730	19.900	14.020	13.890
60	59.780	104.320	135.550	144.190	128.000	90.300	33.540	15.230	11.010	11.010
65	52.860	99.260	132.540	141.380	124.740	84.540	25.470	11.460	8.640	8.640
70	44.540	93.570	126.020	134.590	120.320	78.340	17.920	8.640	6.720	6.850
75	36.220	87.550	114.750	122.300	110.980	69.760	10.820	6.530	5.120	5.180
80	28.160	80.450	104.580	117.060	94.210	62.140	5.310	5.060	4.100	4.350
85	19.970	72.130	97.790	111.300	90.880	53.700	2.560	4.220	3.780	3.840
90	12.290	63.300	95.620	102.780	85.890	44.670	2.500	3.580	3.200	3.330
95	5.250	42.110	75.070	92.540	57.410	28.610	2.050	2.820	2.620	2.820
100	1.790	33.410	71.550	84.290	59.010	17.660	0.900	2.750	2.500	2.500
105	1.470	23.740	62.270	71.300	49.660	8.000	0.960	2.370	2.370	2.370
110	1.470	11.260	48.260	56.000	36.740	0.700	1.020	1.920	2.240	2.240
115	1.340	0.770	32.380	38.910	20.990	0.770	1.090	1.790	2.050	2.240
120	1.340	0.700	15.040	21.310	5.630	0.770	1.150	1.860	1.980	2.240
125	1.470	0.770	1.860	5.440	1.470	0.830	1.220	1.860	1.980	2.240
130	1.540	0.900	1.470	0.700	1.340	0.900	1.280	1.860	1.920	2.240
135	1.600	0.960	1.410	0.770	1.340	0.960	1.340	1.860	1.920	2.240
140	1.660	1.020	1.410	0.830	1.340	1.020	1.340	1.860	1.920	2.180
145	1.660	1.090	1.410	0.900	1.340	1.150	1.470	1.860	1.920	2.180
150	1.660	1.150	1.410	0.960	1.410	1.220	1.470	1.860	1.860	2.110
155	1.730	1.220	1.470	1.090	1.470	1.280	1.540	1.860	1.860	2.050
160	1.730	1.340	1.470	1.150	1.470	1.340	1.600	1.790	1.790	1.980
165	1.790	1.410	1.600	1.280	1.540	1.410	1.660	1.790	1.730	1.920
170	1.790	1.470	1.600	1.340	1.600	1.470	1.730	1.790	1.660	1.860
175	1.790	1.540	1.730	1.470	1.660	1.540	1.730	1.730	1.660	1.730
180	1.678	1.678	1.678	1.678	1.678	1.678	1.678	1.678	1.678	1.678

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	96.198	96.198	96.198
5	86.590	91.780	98.560
10	78.780	86.080	98.620
15	68.670	80.260	97.920
20	60.160	73.790	96.260
25	51.970	66.820	94.080
30	43.900	60.670	91.840
35	36.480	53.250	88.450
40	29.700	45.760	83.840
45	23.680	38.340	78.460
50	18.750	31.300	73.340
55	14.850	24.450	66.690
60	11.520	18.180	59.780
65	8.900	13.250	52.860
70	6.660	9.540	44.540
75	5.120	6.910	36.220
80	4.030	5.250	28.160

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85	3.580	4.420	19.970
90	3.070	3.840	12.290
95	2.620	3.200	5.250
100	2.370	2.560	1.790
105	2.180	1.860	1.470
110	2.050	1.730	1.470
115	1.980	1.730	1.340
120	1.920	1.790	1.340
125	1.920	1.790	1.470
130	1.920	1.790	1.540
135	1.920	1.790	1.600
140	1.920	1.790	1.660
145	1.920	1.790	1.660
150	1.860	1.790	1.660
155	1.860	1.790	1.730
160	1.790	1.790	1.730
165	1.730	1.730	1.790
170	1.660	1.730	1.790
175	1.600	1.660	1.790
180	1.678	1.678	1.678

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Zone	Lumens	%Lamp	%Fixt
0-20	35.29	5.00	7.60
0-30	76.07	10.70	16.40
0-40	127.81	18.00	27.50
0-60	246.83	34.70	53.10
0-80	356.85	50.20	76.80
0-90	399.46	56.20	86.00
10-90	390.38	54.90	84.00
20-40	92.52	13.00	19.90
20-50	150.89	21.20	32.50
40-70	177.70	25.00	38.20
60-80	110.01	15.50	23.70
70-80	51.34	7.20	11.00
80-90	42.61	6.00	9.20
90-110	50.42	7.10	10.90
90-120	59.43	8.40	12.80
90-130	61.68	8.70	13.30
90-150	63.82	9.00	13.70
90-180	65.17	9.20	14.00
110-180	14.76	2.10	3.20
0-180	464.64	65.40	100.00

Total Luminaire Efficiency = 65.40%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	9.09
10-20	26.21
20-30	40.78
30-40	51.73
40-50	58.37
50-60	60.66
60-70	58.68
70-80	51.34
80-90	42.61
90-100	30.46
100-110	19.95
110-120	9.01
120-130	2.25
130-140	1.17
140-150	0.97
150-160	0.74
160-170	0.46
170-180	0.16

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	76	76	76	76	73	73	73	73	68	68	68	63	63	63	58	58	58	56
1	66	62	58	55	64	60	56	53	55	52	50	51	49	47	47	45	44	42
2	59	53	47	43	57	51	46	42	47	43	39	43	40	37	40	37	35	33
3	54	46	39	34	51	44	38	34	40	36	32	37	33	30	34	31	28	26
4	49	40	33	29	46	38	32	28	35	30	26	33	29	25	30	27	24	22
5	45	35	29	24	42	34	28	24	32	26	22	29	25	21	27	23	20	19
6	41	32	25	21	39	30	25	20	28	23	19	26	22	18	24	21	18	16
7	38	28	22	18	36	27	22	18	26	21	17	24	19	16	22	18	15	14
8	35	26	20	16	34	25	19	16	23	18	15	22	17	14	20	17	14	12
9	33	24	18	14	31	23	18	14	21	17	13	20	16	13	19	15	12	11
10	31	22	16	13	29	21	16	12	20	15	12	19	14	12	17	14	11	10

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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	17.6	19.1	18.2	19.7	20.3	22.5	24.0	23.0	24.5	25.2
	3H	20.0	21.4	20.6	22.0	22.7	25.9	27.2	26.4	27.8	28.5
	4H	21.1	22.4	21.7	23.0	23.7	27.5	28.8	28.1	29.4	30.1
	6H	22.2	23.4	22.8	24.0	24.7	29.3	30.5	29.9	31.1	31.8
	8H	22.7	23.8	23.3	24.5	25.2	30.3	31.4	30.9	32.1	32.8
	12H	23.1	24.3	23.8	24.9	25.6	31.4	32.6	32.0	33.2	33.9

UGR Viewed Endwise

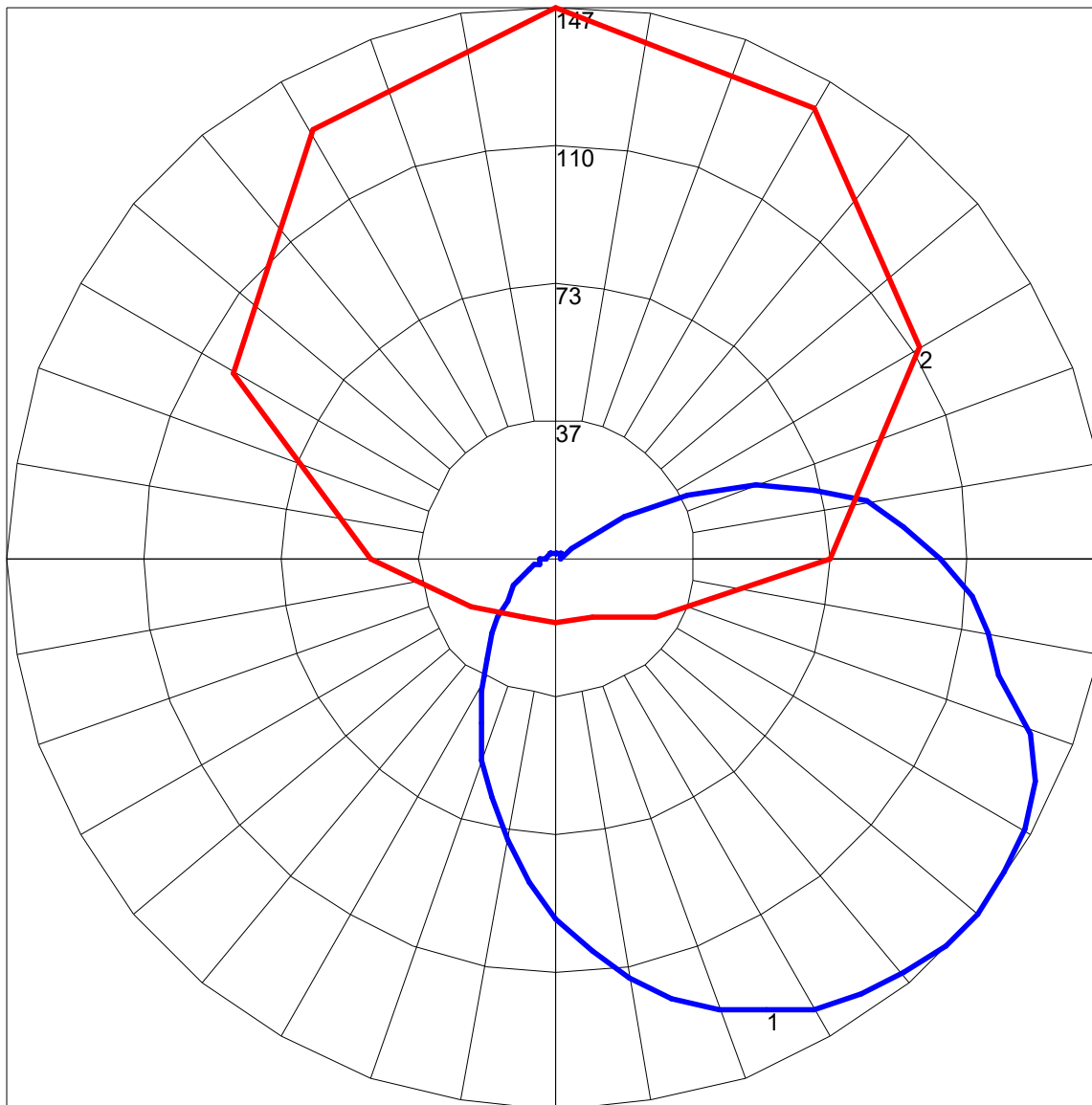
4H	2H	19.2	20.5	19.8	21.1	21.8	23.2	24.5	23.8	25.1	25.7
	3H	22.0	23.1	22.6	23.7	24.4	26.9	28.0	27.5	28.6	29.3
	4H	23.3	24.3	23.9	24.9	25.7	28.7	29.8	29.3	30.4	31.1
	6H	24.5	25.4	25.1	26.1	26.8	30.7	31.6	31.3	32.3	33.0
	8H	25.0	25.9	25.7	26.6	27.3	31.8	32.7	32.5	33.4	34.1
	12H	25.6	26.4	26.3	27.1	27.9	33.1	33.9	33.8	34.6	35.4
8H	4H	24.5	25.4	25.2	26.1	26.8	29.2	30.1	29.8	30.7	31.5
	6H	26.2	26.9	26.8	27.6	28.4	31.4	32.2	32.1	32.9	33.7
	8H	27.0	27.7	27.7	28.4	29.1	32.8	33.5	33.5	34.2	34.9
	12H	27.8	28.4	28.5	29.1	29.9	34.3	35.0	35.0	35.7	36.5
12H	4H	24.9	25.7	25.6	26.4	27.2	29.3	30.1	29.9	30.8	31.5
	6H	26.8	27.5	27.5	28.1	28.9	31.6	32.3	32.3	33.0	33.8
	8H	27.8	28.4	28.5	29.1	29.9	33.1	33.7	33.8	34.4	35.2

Maximum UGR = 36.5

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POLAR GRAPH



Maximum Candela = 146.5 Located At Horizontal Angle = 90, Vertical Angle = 50

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

2 - Horizontal Cone Through Vertical Angle (50) (Through Max. Cd.)