



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-14.4-10MM-3528-24-IP20-27K LL 0710 ALU-DOP_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 0710 ALU LL 0710 DOP
[LAMPCAT] 1
[LAMP] 3528 180LED 2700K CRI90 PCB 10MM
[BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	463.4 (1 lamp)
Total Lamp Lumens	463.4
Luminaire Lumens	967
Total Luminaire Efficiency	209 %
Luminaire Efficacy Rating (LER)	68
Total Luminaire Watts	14.2
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.32
Spacing Criterion (90-270)	2.12
Spacing Criterion (Diagonal)	1.40
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	11494	20582	25142
55	10930	24197	30510
65	9786	29908	39250
75	7786	40159	54069
85	6606	94650	148086

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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	230.878	230.878	230.878	230.878	230.878	230.878	230.878	230.878	230.878	230.878
5	237.120	246.400	251.970	255.360	251.330	246.210	236.420	220.290	210.240	207.870
10	234.690	254.780	266.940	271.620	267.010	256.320	232.770	208.700	195.710	194.370
15	230.460	260.290	280.700	290.620	281.600	262.780	227.260	194.430	182.720	178.430
20	224.700	264.900	295.420	312.130	297.920	267.010	220.030	183.810	157.890	134.460
25	216.260	266.430	309.570	327.100	312.320	269.380	211.260	172.990	97.920	58.620
30	205.380	266.940	317.760	335.870	320.510	273.150	199.740	154.690	46.660	20.610
35	193.150	267.780	321.470	343.740	324.860	275.140	185.920	126.080	15.230	10.620
40	179.260	263.550	324.800	351.420	328.510	272.510	169.790	80.130	8.700	7.300
45	162.620	255.810	326.590	355.710	330.880	264.770	151.300	43.970	6.020	5.440
50	144.510	246.850	325.890	355.460	330.620	256.060	131.710	23.100	4.670	4.670
55	125.440	235.200	320.190	350.140	324.740	243.330	110.850	12.480	4.100	4.220
60	103.490	220.160	310.270	342.780	314.880	229.890	87.940	8.450	3.710	3.900
65	82.750	206.340	299.460	331.900	303.810	216.320	64.580	6.400	3.390	3.710
70	60.800	186.050	283.070	312.450	286.080	194.430	43.460	5.060	3.200	3.580
75	40.320	163.710	252.220	280.000	254.720	172.990	24.830	3.970	3.010	3.520
80	23.490	141.060	219.200	268.800	228.100	150.340	11.650	3.200	2.940	3.520
85	11.520	120.770	209.340	258.240	209.860	129.150	4.220	2.880	3.010	3.520
90	5.310	103.940	209.730	238.980	208.770	111.810	1.600	2.750	3.070	3.580
95	3.580	49.090	132.480	218.620	137.980	59.140	1.600	2.820	3.200	3.710
100	2.500	22.400	110.460	168.900	117.310	23.100	1.540	3.070	3.460	3.970
105	2.430	4.930	40.260	100.740	37.630	4.420	1.660	3.010	3.710	4.220
110	2.500	1.600	9.020	10.180	8.260	1.600	1.790	3.070	3.970	4.480
115	2.370	1.340	4.740	5.120	4.740	1.090	1.920	3.260	4.100	4.610
120	2.430	1.280	2.500	2.560	2.500	1.220	2.050	3.390	4.160	4.740
125	2.690	1.410	1.730	1.090	1.730	1.340	2.180	3.520	4.220	4.800
130	2.940	1.730	1.730	0.900	1.660	1.470	2.370	3.580	4.220	4.800
135	3.070	1.860	1.790	1.090	1.730	1.660	2.500	3.710	4.290	4.800
140	3.140	2.050	1.920	1.280	1.860	1.860	2.620	3.710	4.290	4.800
145	3.260	2.240	2.050	1.470	2.050	2.050	2.750	3.780	4.220	4.740
150	3.520	2.370	2.240	1.730	2.240	2.240	2.940	3.780	4.220	4.610
155	3.650	2.560	2.430	1.980	2.430	2.430	3.010	3.840	4.160	4.480
160	3.710	2.750	2.560	2.240	2.620	2.690	3.200	3.840	4.100	4.350
165	3.780	2.940	2.820	2.500	2.820	2.880	3.330	3.780	3.970	4.220
170	3.780	3.140	3.070	2.820	3.010	3.070	3.460	3.710	3.780	4.030
175	3.780	3.330	3.330	3.140	3.260	3.260	3.580	3.650	3.580	3.780
180	3.555	3.555	3.555	3.555	3.555	3.555	3.555	3.555	3.555	3.555

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	230.878	230.878	230.878
5	208.380	217.280	237.120
10	193.410	204.930	234.690
15	179.840	191.420	230.460
20	153.860	182.080	224.700
25	91.970	168.000	216.260
30	42.180	147.070	205.380
35	14.080	108.860	193.150
40	8.380	59.580	179.260
45	5.760	33.920	162.620
50	4.540	16.700	144.510
55	3.970	10.110	125.440
60	3.650	7.300	103.490
65	3.390	5.820	82.750
70	3.200	4.800	60.800
75	3.070	3.900	40.320
80	3.070	3.330	23.490

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85	3.200	3.010	11.520
90	3.260	3.010	5.310
95	3.390	3.140	3.580
100	3.580	3.260	2.500
105	3.840	3.460	2.430
110	4.100	3.460	2.500
115	4.290	3.580	2.370
120	4.350	3.710	2.430
125	4.420	3.840	2.690
130	4.420	3.900	2.940
135	4.480	3.970	3.070
140	4.480	4.030	3.140
145	4.420	4.030	3.260
150	4.350	4.030	3.520
155	4.290	4.030	3.650
160	4.160	3.970	3.710
165	4.030	3.900	3.780
170	3.840	3.780	3.780
175	3.580	3.650	3.780
180	3.555	3.555	3.555

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Zone	Lumens	%Lamp	%Fixt
0-20	87.00	18.80	9.00
0-30	183.38	39.60	19.00
0-40	297.78	64.30	30.80
0-60	553.39	119.40	57.20
0-80	785.96	169.60	81.30
0-90	873.95	188.60	90.40
10-90	851.81	183.80	88.10
20-40	210.77	45.50	21.80
20-50	336.22	72.60	34.80
40-70	381.21	82.30	39.40
60-80	232.56	50.20	24.10
70-80	106.97	23.10	11.10
80-90	88.00	19.00	9.10
90-110	79.85	17.20	8.30
90-120	83.40	18.00	8.60
90-130	85.91	18.50	8.90
90-150	90.11	19.40	9.30
90-180	92.92	20.10	9.60
110-180	13.07	2.80	1.40
0-180	966.87	208.60	100.00

Total Luminaire Efficiency = 208.60%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	22.14
10-20	64.86
20-30	96.38
30-40	114.40
40-50	125.45
50-60	130.17
60-70	125.59
70-80	106.97
80-90	88.00
90-100	59.07
100-110	20.78
110-120	3.55
120-130	2.52
130-140	2.25
140-150	1.94
150-160	1.51
160-170	0.97
170-180	0.33

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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	244	244	244	244	236	236	236	236	221	221	221	207	207	207	194	194	194	189
1	214	201	189	178	206	194	183	173	181	172	164	169	162	155	158	153	147	141
2	192	171	154	139	184	165	149	136	154	141	130	144	133	124	135	126	118	112
3	173	148	128	113	166	143	125	110	134	118	106	125	112	101	117	106	97	91
4	158	130	109	94	151	126	107	92	118	101	88	110	96	85	103	91	82	76
5	145	115	95	80	138	112	92	78	105	88	75	98	84	73	92	80	70	65
6	133	103	83	69	128	100	81	68	94	78	65	89	74	63	83	71	61	56
7	123	93	74	60	118	91	72	59	85	69	57	81	66	56	76	63	54	49
8	115	85	66	53	110	83	65	53	78	62	51	74	60	49	70	57	48	44
9	107	78	60	48	103	76	59	47	72	56	46	68	54	44	64	52	43	39
10	100	72	54	43	96	70	53	42	66	52	41	63	50	40	60	48	39	35

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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	19.8	21.4	20.4	21.9	22.5	26.1	27.6	26.6	28.1	28.7
	3H	21.7	23.2	22.2	23.7	24.3	29.3	30.8	29.9	31.3	31.9
	4H	22.4	23.8	23.0	24.3	24.9	30.9	32.3	31.4	32.8	33.4
	6H	22.9	24.2	23.5	24.7	25.4	32.7	33.9	33.2	34.5	35.1
	8H	23.1	24.3	23.7	24.9	25.5	33.6	34.9	34.2	35.4	36.1
	12H	23.2	24.4	23.8	25.0	25.6	34.8	36.0	35.4	36.5	37.2

UGR Viewed Endwise

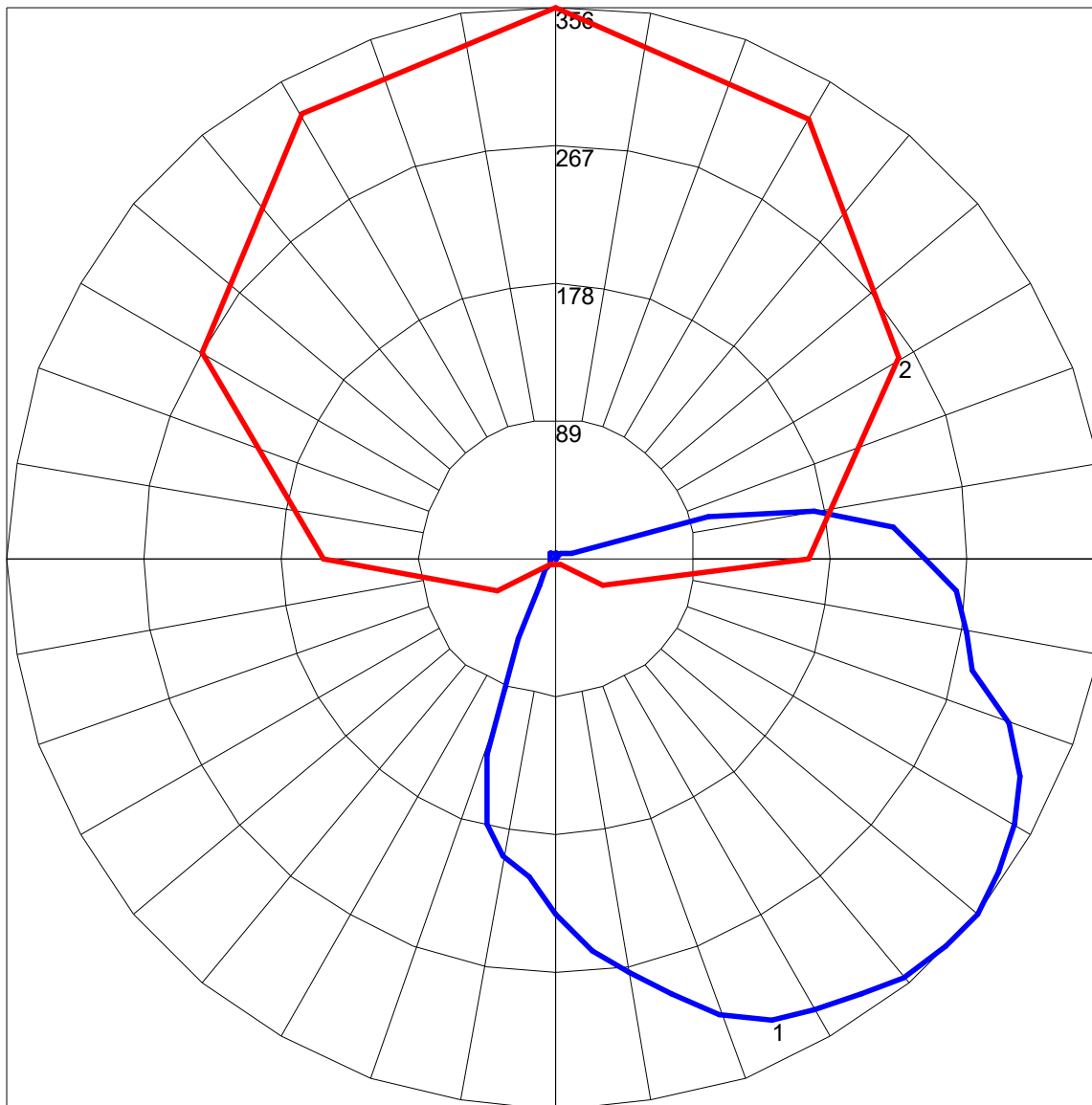
4H	2H	21.7	23.1	22.3	23.6	24.2	26.7	28.1	27.3	28.6	29.2
	3H	24.1	25.3	24.6	25.8	26.4	30.3	31.5	30.9	32.1	32.7
	4H	25.0	26.1	25.6	26.7	27.3	32.1	33.2	32.6	33.8	34.4
	6H	25.8	26.7	26.3	27.3	28.0	34.0	35.0	34.6	35.6	36.3
	8H	26.0	27.0	26.6	27.6	28.2	35.1	36.1	35.7	36.7	37.3
	12H	26.3	27.1	26.9	27.7	28.4	36.5	37.3	37.1	37.9	38.6
8H	4H	26.6	27.5	27.2	28.1	28.8	32.5	33.4	33.1	34.0	34.7
	6H	27.8	28.6	28.4	29.2	29.9	34.7	35.5	35.4	36.2	36.9
	8H	28.3	29.1	29.0	29.7	30.4	36.1	36.8	36.7	37.4	38.1
	12H	28.8	29.5	29.4	30.1	30.9	37.6	38.3	38.3	38.9	39.7
12H	4H	27.1	27.9	27.7	28.5	29.2	32.6	33.4	33.2	34.1	34.7
	6H	28.5	29.3	29.2	29.9	30.6	34.9	35.6	35.5	36.2	37.0
	8H	29.3	29.9	29.9	30.6	31.3	36.3	37.0	37.0	37.6	38.4

Maximum UGR = 39.7

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POLAR GRAPH



Maximum Candela = 355.71 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.)