



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-19.2-1-3528-24-IP20-27K LL-1650 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-19.2-1-3528-24-IP20-27K
[LUMINAIRE] LL-1650 ALU / LL-1650 DFR
[LAMPCAT] 1
[LAMP] 3528 240LED 10mm PCB
[BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	771.3 (1 lamp)
Total Lamp Lumens	771.3
Luminaire Lumens	549
Total Luminaire Efficiency	71 %
Luminaire Efficacy Rating (LER)	29
Total Luminaire Watts	18.7
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.36
Spacing Criterion (90-270)	2.08
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	6179	10323	12146
55	6241	12263	14957
65	6358	15527	19634
75	6575	22097	27695
85	8957	53124	74536

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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	114.657	114.657	114.657	114.657	114.657	114.657	114.657	114.657	114.657	114.657
5	117.500	121.020	122.110	123.780	121.600	120.060	116.480	109.820	103.170	102.400
10	116.990	125.570	130.500	133.500	130.050	124.480	113.920	102.460	92.740	90.690
15	115.900	129.600	137.980	142.210	137.470	127.360	110.660	94.340	81.730	79.490
20	113.280	132.420	144.900	150.140	143.940	129.280	106.880	86.140	71.300	68.480
25	109.500	133.820	150.910	156.930	149.120	130.820	102.270	77.380	60.740	57.980
30	105.340	134.140	155.580	162.370	152.960	132.030	96.700	68.670	55.040	48.580
35	100.610	133.500	158.910	166.850	155.780	132.100	90.500	59.710	42.300	39.740
40	94.270	132.350	161.020	169.980	157.570	130.620	83.330	50.500	34.240	32.130
45	87.420	130.300	161.790	171.840	158.270	128.060	75.390	43.900	27.330	26.050
50	80.190	126.720	161.340	172.480	157.950	124.350	67.010	33.470	21.950	20.930
55	71.620	121.790	159.680	171.650	156.420	119.810	57.860	25.730	17.340	16.700
60	63.230	116.030	156.800	169.540	153.860	115.010	48.320	19.390	13.500	13.310
65	53.760	109.890	152.700	166.020	150.080	108.610	38.590	14.210	10.560	10.430
70	43.900	102.720	146.240	157.760	144.700	100.800	28.740	10.240	7.940	8.190
75	34.050	94.270	134.590	143.420	133.180	92.420	19.260	7.420	5.630	6.460
80	24.320	84.740	116.740	136.900	114.620	83.460	10.940	5.570	4.480	5.380
85	15.620	74.880	110.400	129.980	107.260	73.340	4.740	4.420	4.100	4.610
90	9.470	64.770	107.780	120.320	104.830	62.850	2.180	3.780	3.460	4.030
95	3.900	42.940	80.190	110.530	74.560	40.260	1.730	2.940	2.940	3.460
100	1.980	29.500	77.060	99.840	74.180	27.460	0.960	2.940	2.940	3.070
105	1.600	18.500	64.320	83.840	63.420	17.090	1.020	2.300	2.750	2.820
110	1.600	4.480	49.920	64.640	48.000	3.520	1.150	1.980	2.560	2.690
115	1.540	0.900	31.300	44.800	29.440	0.830	1.220	1.980	2.300	2.620
120	1.600	0.900	12.420	24.450	10.820	0.900	1.280	2.050	2.240	2.620
125	1.660	0.900	1.730	5.700	1.660	0.960	1.340	2.050	2.240	2.620
130	1.730	1.090	1.600	0.830	1.600	1.020	1.470	2.110	2.240	2.620
135	1.730	1.220	1.600	0.900	1.540	1.090	1.540	2.110	2.240	2.560
140	1.790	1.280	1.540	0.960	1.540	1.220	1.600	2.110	2.240	2.560
145	1.860	1.340	1.600	1.020	1.540	1.280	1.660	2.180	2.240	2.500
150	1.980	1.470	1.600	1.150	1.600	1.340	1.730	2.110	2.180	2.430
155	2.050	1.540	1.660	1.280	1.660	1.470	1.860	2.180	2.180	2.370
160	2.050	1.600	1.730	1.410	1.730	1.540	1.920	2.110	2.110	2.300
165	2.110	1.730	1.790	1.470	1.790	1.660	1.920	2.110	2.050	2.240
170	2.110	1.790	1.920	1.660	1.860	1.730	1.980	2.110	1.980	2.180
175	2.110	1.860	1.980	1.790	1.920	1.790	2.050	2.050	1.920	2.050
180	1.979	1.979	1.979	1.979	1.979	1.979	1.979	1.979	1.979	1.979

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	114.657	114.657	114.657
5	102.530	108.610	117.500
10	92.220	102.270	116.990
15	81.730	94.980	115.900
20	71.940	86.720	113.280
25	61.570	77.820	109.500
30	55.490	69.570	105.340
35	42.880	60.800	100.610
40	34.620	51.390	94.270
45	27.520	45.500	87.420
50	21.950	34.370	80.190
55	17.340	26.430	71.620
60	13.570	19.840	63.230
65	10.620	14.720	53.760
70	8.130	10.940	43.900
75	6.210	8.320	34.050
80	4.990	6.530	24.320

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85	4.540	5.500	15.620
90	3.970	4.800	9.470
95	3.140	4.030	3.900
100	2.940	3.330	1.980
105	2.690	2.560	1.600
110	2.560	2.110	1.600
115	2.300	2.050	1.540
120	2.300	2.110	1.600
125	2.240	2.180	1.660
130	2.300	2.180	1.730
135	2.300	2.180	1.730
140	2.240	2.180	1.790
145	2.240	2.180	1.860
150	2.240	2.180	1.980
155	2.180	2.110	2.050
160	2.110	2.110	2.050
165	2.050	2.050	2.110
170	1.980	2.050	2.110
175	1.920	1.980	2.110
180	1.979	1.979	1.979

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Zone	Lumens	%Lamp	%Fixt
0-20	42.27	5.50	7.70
0-30	91.19	11.80	16.60
0-40	153.09	19.80	27.90
0-60	294.62	38.20	53.70
0-80	424.24	55.00	77.30
0-90	473.55	61.40	86.30
10-90	462.69	60.00	84.30
20-40	110.82	14.40	20.20
20-50	180.46	23.40	32.90
40-70	210.82	27.30	38.40
60-80	129.62	16.80	23.60
70-80	60.33	7.80	11.00
80-90	49.31	6.40	9.00
90-110	58.36	7.60	10.60
90-120	68.58	8.90	12.50
90-130	71.13	9.20	13.00
90-150	73.61	9.50	13.40
90-180	75.21	9.80	13.70
110-180	16.85	2.20	3.10
0-180	548.76	71.10	100.00

Total Luminaire Efficiency = 71.10%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	10.86
10-20	31.42
20-30	48.92
30-40	61.90
40-50	69.65
50-60	71.89
60-70	69.28
70-80	60.33
80-90	49.31
90-100	35.47
100-110	22.90
110-120	10.21
120-130	2.55
130-140	1.36
140-150	1.13
150-160	0.87
160-170	0.54
170-180	0.19

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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	82	82	82	82	79	79	79	79	74	74	74	68	68	68	64	64	64	61
1	72	68	64	60	69	65	62	58	60	57	55	56	53	51	52	50	48	46
2	65	58	52	47	62	55	50	45	51	47	43	47	44	40	44	41	38	36
3	58	50	43	38	56	48	42	37	44	39	35	41	37	33	38	34	31	29
4	53	44	37	31	51	42	35	30	39	33	29	36	31	28	33	29	26	24
5	49	39	32	26	46	37	31	26	34	29	25	32	27	23	30	26	22	20
6	45	34	28	23	43	33	27	22	31	25	21	29	24	20	27	23	19	18
7	41	31	24	20	39	30	24	19	28	23	19	26	21	18	24	20	17	15
8	38	28	22	17	37	27	21	17	26	20	16	24	19	16	22	18	15	13
9	36	26	20	16	34	25	19	15	23	18	15	22	17	14	21	16	13	12
10	33	24	18	14	32	23	17	14	22	17	13	20	16	13	19	15	12	11

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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	17.7	19.2	18.3	19.8	20.4	23.0	24.5	23.6	25.1	25.7
	3H	19.9	21.3	20.5	21.9	22.6	26.4	27.8	27.0	28.4	29.0
	4H	20.9	22.2	21.5	22.8	23.5	28.0	29.3	28.6	29.9	30.6
	6H	21.8	23.0	22.4	23.6	24.3	29.8	31.0	30.4	31.6	32.3
	8H	22.1	23.3	22.7	23.9	24.6	30.8	32.0	31.4	32.6	33.3
	12H	22.5	23.6	23.1	24.2	25.0	31.9	33.1	32.6	33.7	34.4

UGR Viewed Endwise

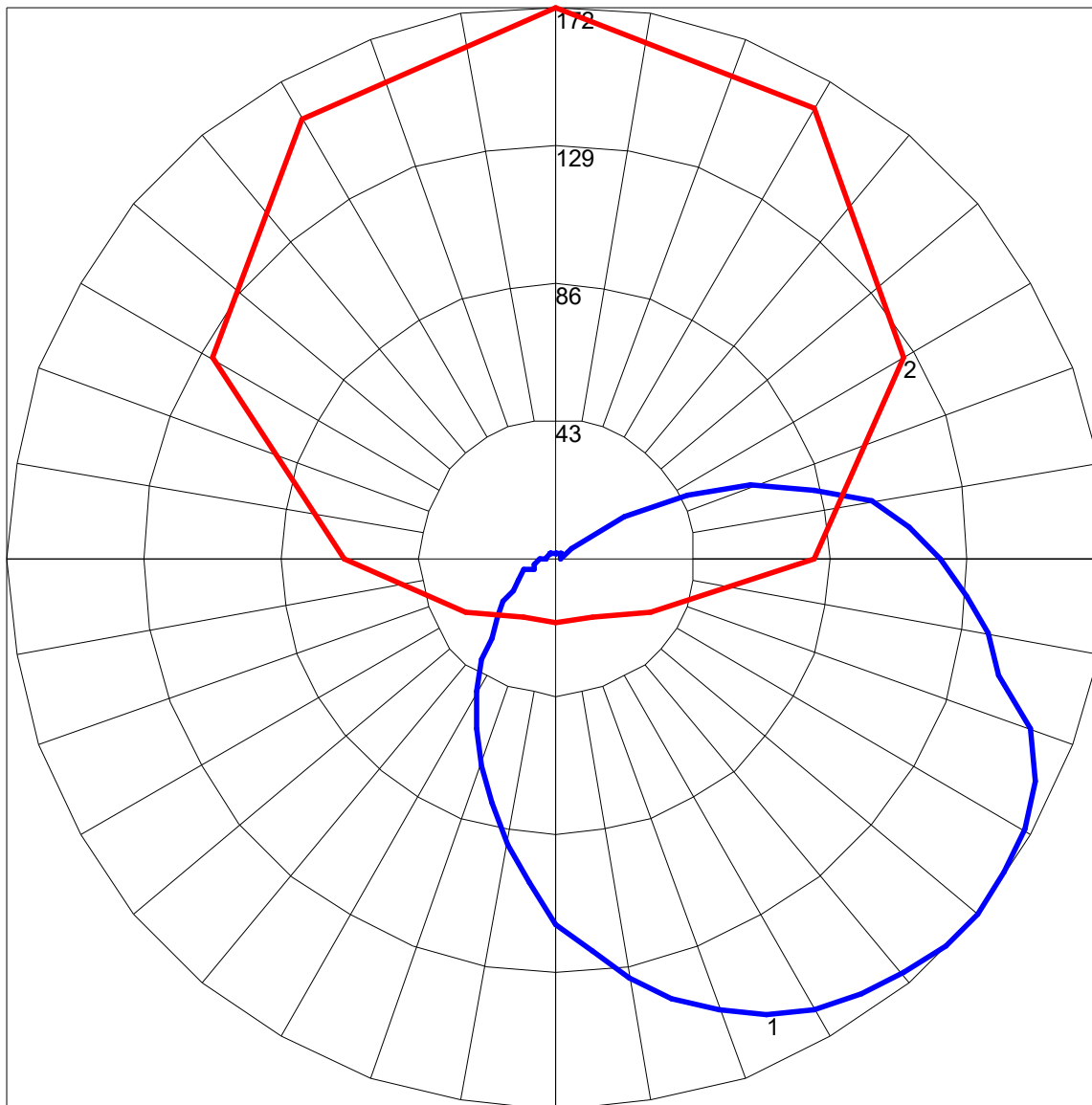
4H	2H	19.4	20.7	20.0	21.3	22.0	23.7	25.0	24.3	25.6	26.3
	3H	22.0	23.1	22.6	23.7	24.4	27.4	28.6	28.0	29.2	29.9
	4H	23.2	24.2	23.8	24.8	25.6	29.3	30.3	29.9	30.9	31.7
	6H	24.2	25.1	24.9	25.8	26.5	31.2	32.2	31.9	32.8	33.6
	8H	24.7	25.5	25.3	26.2	27.0	32.3	33.2	33.0	33.9	34.6
	12H	25.1	25.9	25.8	26.6	27.3	33.6	34.4	34.3	35.1	35.9
8H	4H	24.5	25.4	25.2	26.1	26.9	29.7	30.6	30.4	31.3	32.0
	6H	26.0	26.8	26.7	27.5	28.2	32.0	32.7	32.7	33.4	34.2
	8H	26.7	27.4	27.4	28.1	28.9	33.3	34.0	34.0	34.7	35.5
	12H	27.4	28.0	28.1	28.7	29.5	34.8	35.5	35.5	36.2	37.0
12H	4H	25.0	25.8	25.6	26.5	27.2	29.8	30.6	30.5	31.3	32.1
	6H	26.7	27.3	27.4	28.0	28.8	32.2	32.8	32.9	33.5	34.3
	8H	27.6	28.2	28.3	28.9	29.7	33.6	34.2	34.3	34.9	35.7

Maximum UGR = 37.0

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POLAR GRAPH



Maximum Candela = 172.48 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.)