



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-19.2-1-3528-24-IP20-27K ALU-013-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] ALU-013-DFR
[LAMPCAT] 1
[LAMP] 3528 240LED CRI90 PCB 10MM
[BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	1010.5 (1 lamp)
Total Lamp Lumens	1010.5
Luminaire Lumens	1181
Total Luminaire Efficiency	117 %
Luminaire Efficacy Rating (LER)	63
Total Luminaire Watts	18.8
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	2.00
Spacing Criterion (Diagonal)	1.48
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	6301	10363	12650
55	6187	12173	15461
65	6014	15069	20159
75	5865	21090	28314
85	6423	49141	75218

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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	254.435	254.435	254.435	254.435	254.435	254.435	254.435	254.435	254.435	254.435
5	259.650	265.790	269.180	271.300	268.030	263.870	257.980	244.740	233.730	230.910
10	256.640	272.900	284.670	289.790	283.780	271.940	253.180	230.910	213.820	209.220
15	251.070	277.570	297.920	306.180	297.340	277.440	245.820	215.360	193.280	187.200
20	243.200	279.740	309.120	320.770	308.930	280.580	236.480	198.660	172.860	165.890
25	235.520	280.130	317.820	333.180	318.140	281.150	224.640	180.480	152.000	144.640
30	223.300	280.060	323.970	342.980	324.610	279.360	210.940	161.540	131.650	124.290
35	208.900	274.940	327.740	350.590	328.770	275.070	195.840	142.530	112.510	105.730
40	193.980	267.520	329.020	355.650	330.500	268.610	178.940	123.010	94.080	88.130
45	178.300	258.300	328.190	357.950	329.660	260.220	160.770	104.000	80.190	72.580
50	159.490	247.870	326.020	357.760	326.340	250.050	142.720	85.180	61.950	58.500
55	142.020	237.250	321.540	354.880	320.580	239.550	122.690	64.380	48.380	46.140
60	121.660	222.850	313.790	349.440	312.640	225.860	102.780	51.580	36.800	35.900
65	101.700	206.590	303.100	340.930	302.340	210.240	82.880	37.180	27.520	27.200
70	80.450	189.250	288.450	323.580	287.360	195.200	61.950	25.280	19.070	19.970
75	60.740	173.310	263.550	293.250	263.040	178.180	41.860	16.380	12.990	13.950
80	40.380	153.410	225.660	277.380	227.580	158.910	24.190	10.240	8.830	10.300
85	22.400	132.860	209.920	262.340	209.730	138.940	10.940	6.780	6.980	7.740
90	9.860	113.150	206.210	243.900	205.570	121.470	2.750	5.310	5.440	6.140
95	5.890	89.280	159.490	223.620	158.720	92.290	2.820	4.420	4.420	4.990
100	4.610	59.390	145.980	203.010	146.370	63.100	1.920	4.160	4.290	4.670
105	3.460	51.460	137.470	181.500	138.300	55.100	1.980	3.900	4.290	4.740
110	2.690	40.190	121.470	158.400	123.070	44.220	2.110	3.650	4.420	4.860
115	2.690	28.800	104.130	135.680	105.340	32.900	2.300	3.650	4.420	4.930
120	2.750	18.180	83.970	112.060	85.250	23.040	2.500	3.780	4.480	4.990
125	2.880	9.470	63.360	88.450	64.320	14.080	2.620	3.840	4.480	5.060
130	3.070	3.520	46.910	66.180	48.190	6.780	2.820	3.970	4.480	5.060
135	3.200	2.430	29.180	47.170	32.770	3.070	3.010	4.030	4.480	5.060
140	3.330	2.500	15.810	30.460	19.650	2.500	3.140	4.100	4.480	4.990
145	3.460	2.620	6.400	16.830	8.900	2.620	3.330	4.160	4.480	4.930
150	3.650	2.820	3.330	5.760	3.710	2.880	3.460	4.160	4.420	4.860
155	3.780	3.010	3.390	2.690	3.390	3.010	3.580	4.220	4.420	4.740
160	3.840	3.200	3.520	2.940	3.460	3.200	3.650	4.220	4.350	4.610
165	3.970	3.390	3.650	3.140	3.650	3.390	3.780	4.160	4.220	4.480
170	4.030	3.580	3.780	3.460	3.780	3.580	3.900	4.100	4.100	4.350
175	4.100	3.780	3.970	3.650	3.970	3.710	3.970	4.030	3.970	4.160
180	3.973	3.973	3.973	3.973	3.973	3.973	3.973	3.973	3.973	3.973

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	254.435	254.435	254.435
5	232.060	241.280	259.650
10	212.030	226.820	256.640
15	191.360	210.750	251.070
20	170.880	194.180	243.200
25	150.080	177.220	235.520
30	129.790	157.890	223.300
35	110.850	138.620	208.900
40	92.610	118.980	193.980
45	75.650	100.030	178.300
50	60.930	81.470	159.490
55	47.620	64.190	142.020
60	36.290	48.960	121.660
65	27.140	35.460	101.700
70	18.690	24.380	80.450
75	12.860	16.190	60.740
80	8.580	10.430	40.380

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85	6.980	7.100	22.400
90	5.500	5.630	9.860
95	4.480	4.930	5.890
100	4.290	4.540	4.610
105	4.350	4.290	3.460
110	4.420	4.030	2.690
115	4.480	3.900	2.690
120	4.480	3.900	2.750
125	4.540	3.970	2.880
130	4.540	4.100	3.070
135	4.540	4.100	3.200
140	4.610	4.160	3.330
145	4.540	4.160	3.460
150	4.540	4.220	3.650
155	4.480	4.220	3.780
160	4.350	4.160	3.840
165	4.290	4.160	3.970
170	4.160	4.100	4.030
175	3.970	4.030	4.100
180	3.973	3.973	3.973

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Zone	Lumens	%Lamp	%Fixt
0-20	93.59	9.30	7.90
0-30	201.05	19.90	17.00
0-40	335.33	33.20	28.40
0-60	633.76	62.70	53.70
0-80	892.70	88.30	75.60
0-90	986.61	97.60	83.50
10-90	962.52	95.30	81.50
20-40	241.74	23.90	20.50
20-50	390.15	38.60	33.00
40-70	438.84	43.40	37.20
60-80	258.94	25.60	21.90
70-80	118.52	11.70	10.00
80-90	93.91	9.30	8.00
90-110	121.86	12.10	10.30
90-120	157.69	15.60	13.40
90-130	178.02	17.60	15.10
90-150	191.25	18.90	16.20
90-180	194.48	19.20	16.50
110-180	72.62	7.20	6.10
0-180	1181.09	116.90	100.00

Total Luminaire Efficiency = 116.90%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	24.09
10-20	69.50
20-30	107.46
30-40	134.28
40-50	148.41
50-60	150.01
60-70	140.42
70-80	118.52
80-90	93.91
90-100	70.22
100-110	51.64
110-120	35.83
120-130	20.33
130-140	9.52
140-150	3.71
150-160	1.77
160-170	1.09
170-180	0.38

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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	135	135	135	135	129	129	129	129	119	119	119	110	110	110	102	102	102	98
1	119	112	105	99	113	107	101	96	98	94	89	90	87	83	83	80	77	73
2	107	95	86	78	101	91	83	76	84	77	71	77	71	66	71	66	62	58
3	96	82	72	63	92	79	69	61	73	65	58	67	60	54	61	56	51	47
4	88	72	61	53	83	69	59	51	64	55	48	59	52	46	54	48	43	40
5	80	64	53	45	76	62	51	43	57	48	41	53	45	39	48	42	37	34
6	74	57	46	38	70	55	45	37	51	42	36	47	40	34	44	37	32	29
7	68	52	41	34	65	50	40	33	46	38	31	43	35	30	40	33	28	25
8	63	47	37	30	60	45	36	29	42	34	28	39	32	26	36	30	25	22
9	59	43	33	26	56	42	32	26	39	30	25	36	29	24	34	27	22	20
10	55	40	30	24	53	38	29	23	36	28	22	33	26	21	31	25	20	18

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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	17.3	18.7	17.8	19.3	20.0	22.8	24.2	23.4	24.9	25.5
	3H	19.3	20.6	19.9	21.2	21.9	26.2	27.5	26.8	28.1	28.8
	4H	20.2	21.4	20.8	22.0	22.8	27.8	29.0	28.4	29.7	30.4
	6H	20.9	22.1	21.5	22.7	23.4	29.6	30.7	30.2	31.4	32.1
	8H	21.2	22.3	21.8	23.0	23.7	30.5	31.6	31.2	32.3	33.1
	12H	21.4	22.5	22.1	23.1	23.9	31.7	32.7	32.3	33.4	34.2

UGR Viewed Endwise

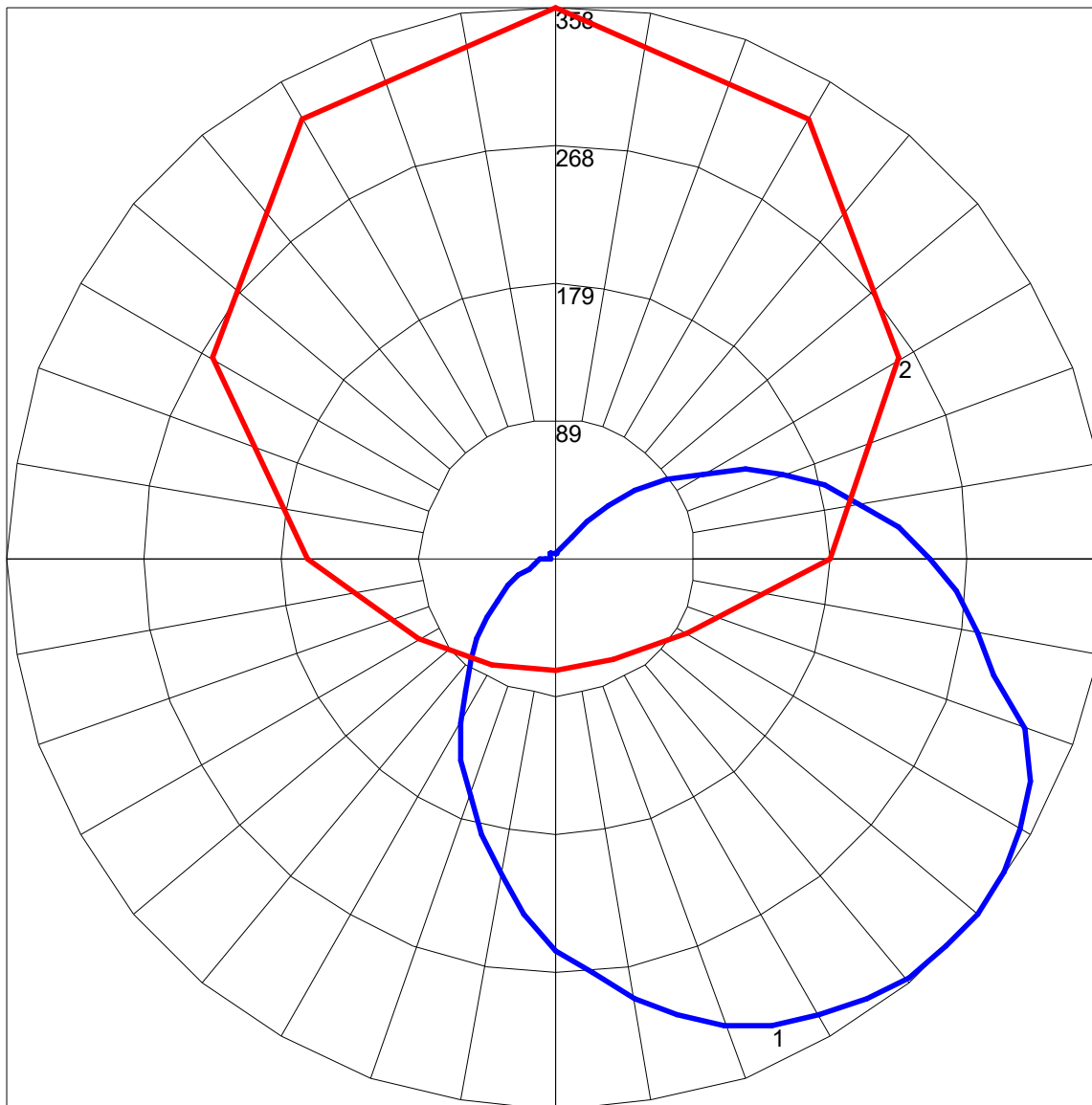
4H	2H	18.9	20.1	19.5	20.8	21.5	23.5	24.7	24.1	25.3	26.1
	3H	21.3	22.4	21.9	23.0	23.8	27.1	28.2	27.8	28.9	29.6
	4H	22.4	23.4	23.0	24.0	24.8	29.0	29.9	29.6	30.6	31.4
	6H	23.3	24.2	24.0	24.9	25.7	30.9	31.8	31.6	32.5	33.3
	8H	23.7	24.5	24.4	25.2	26.0	32.0	32.8	32.7	33.5	34.3
	12H	24.0	24.8	24.7	25.5	26.3	33.3	34.1	34.0	34.8	35.6
8H	4H	23.8	24.6	24.5	25.3	26.1	29.4	30.2	30.1	30.9	31.7
	6H	25.2	25.9	25.9	26.6	27.4	31.6	32.3	32.3	33.1	33.9
	8H	25.8	26.4	26.5	27.2	28.0	32.9	33.6	33.6	34.3	35.1
	12H	26.3	26.9	27.0	27.6	28.5	34.5	35.0	35.2	35.8	36.6
12H	4H	24.2	25.0	24.9	25.7	26.5	29.5	30.2	30.2	30.9	31.7
	6H	25.8	26.4	26.5	27.2	28.0	31.8	32.4	32.5	33.1	34.0
	8H	26.6	27.2	27.3	27.9	28.8	33.2	33.8	33.9	34.5	35.4

Maximum UGR = 36.6

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POLAR GRAPH



Maximum Candela = 357.95 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.)