



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-19.2-1-3528-24-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-19.2-1-3528-24-IP20-27K
[LUMINAIRE] ALU-016R-DFR
[LAMPCAT] 1
[LAMP] 3528 240LED CRI90 PCB 10MM
[BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	1150.1 (1 lamp)
Total Lamp Lumens	1150.1
Luminaire Lumens	1150
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	61
Total Luminaire Watts	18.9
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	1.92
Spacing Criterion (Diagonal)	1.38
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	7244	11888	14222
55	6720	13370	16788
65	6187	15765	20973
75	5852	20676	27900
85	7102	44637	68922

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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	304.489	304.489	304.489	304.489	304.489	304.489	304.489	304.489	304.489	304.489
5	310.080	317.630	321.730	324.160	320.580	315.840	306.180	291.330	278.400	275.520
10	307.970	326.460	338.820	343.810	337.020	323.200	299.460	273.150	250.880	245.180
15	302.590	332.480	352.900	360.580	350.140	327.300	289.410	251.900	220.480	211.840
20	293.180	334.400	365.310	375.620	360.900	328.260	276.670	228.670	188.670	177.280
25	281.730	332.990	374.590	388.030	369.020	325.700	260.350	202.620	155.390	141.700
30	266.500	329.470	380.420	397.180	373.950	319.680	241.920	175.680	123.460	108.860
35	248.510	321.220	382.850	403.070	375.740	310.910	220.670	149.120	95.550	81.860
40	227.330	309.700	381.500	404.860	373.760	298.940	197.250	122.820	72.000	60.670
45	204.990	296.260	376.510	402.430	368.000	283.260	172.740	99.010	53.760	45.380
50	179.710	278.210	367.870	395.900	358.140	265.540	147.650	77.630	40.450	34.180
55	154.240	258.110	355.650	385.340	344.770	244.220	122.300	59.200	30.400	26.240
60	129.340	236.290	340.220	371.900	328.700	222.660	98.110	43.970	22.980	20.480
65	104.640	211.900	321.340	354.690	309.820	198.080	75.710	31.360	17.410	16.000
70	81.660	187.580	298.500	327.940	288.830	174.080	54.460	21.380	12.610	12.350
75	60.610	162.690	265.600	288.960	258.180	149.700	35.780	14.020	9.020	9.280
80	41.150	138.370	218.430	264.770	210.560	126.270	20.480	8.830	6.530	7.420
85	24.770	114.370	196.990	240.380	186.430	103.300	8.770	5.760	5.440	6.020
90	13.570	92.800	181.250	210.560	171.650	82.820	5.630	4.420	4.480	5.120
95	6.020	64.000	126.270	178.050	118.400	54.590	2.940	3.840	3.970	4.610
100	4.350	41.470	106.820	144.000	99.900	36.030	1.860	3.840	3.840	4.420
105	3.200	31.230	87.810	111.230	82.300	27.710	1.920	3.840	4.100	4.540
110	2.620	19.900	63.940	82.500	63.420	18.430	2.110	3.780	4.290	4.800
115	2.620	9.600	47.940	58.500	45.250	9.860	2.300	3.780	4.480	4.990
120	2.750	3.520	31.810	39.680	30.460	4.800	2.560	3.900	4.610	5.120
125	3.010	1.980	18.690	25.660	18.690	2.560	2.750	4.030	4.740	5.250
130	3.140	2.110	10.110	15.170	10.240	2.180	2.940	4.160	4.800	5.310
135	3.330	2.300	4.610	7.940	5.570	2.370	3.140	4.350	4.860	5.380
140	3.520	2.560	2.880	4.100	3.460	2.620	3.330	4.420	4.930	5.440
145	3.650	2.750	2.880	2.560	2.940	2.880	3.520	4.540	4.990	5.440
150	3.900	3.010	3.070	2.500	3.140	3.070	3.710	4.540	4.930	5.380
155	4.030	3.200	3.260	2.750	3.330	3.330	3.840	4.610	4.930	5.310
160	4.160	3.460	3.520	3.070	3.520	3.520	4.030	4.610	4.860	5.180
165	4.290	3.650	3.710	3.390	3.780	3.780	4.160	4.610	4.740	5.060
170	4.420	3.900	3.970	3.710	4.030	3.970	4.290	4.540	4.610	4.860
175	4.480	4.100	4.220	4.030	4.290	4.160	4.420	4.480	4.480	4.670
180	4.387	4.387	4.387	4.387	4.387	4.387	4.387	4.387	4.387	4.387

Vert. Angles Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	304.489	304.489	304.489
5	278.400	291.260	310.080
10	251.710	274.880	307.970
15	222.340	254.460	302.590
20	191.170	232.000	293.180
25	158.020	207.300	281.730
30	125.950	180.420	266.500
35	97.730	154.240	248.510
40	73.790	127.680	227.330
45	55.230	103.620	204.990
50	41.600	81.090	179.710
55	31.300	62.080	154.240
60	23.550	46.270	129.340
65	17.860	32.900	104.640
70	12.800	22.400	81.660
75	9.150	14.660	60.610
80	6.460	9.150	41.150

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85	5.500	5.890	24.770
90	4.480	4.420	13.570
95	3.900	3.970	6.020
100	3.780	3.970	4.350
105	4.030	4.030	3.200
110	4.220	4.030	2.620
115	4.420	4.030	2.620
120	4.610	4.100	2.750
125	4.740	4.160	3.010
130	4.800	4.290	3.140
135	4.930	4.350	3.330
140	4.990	4.480	3.520
145	4.990	4.540	3.650
150	4.990	4.610	3.900
155	4.990	4.610	4.030
160	4.930	4.670	4.160
165	4.800	4.610	4.290
170	4.670	4.610	4.420
175	4.480	4.480	4.480
180	4.387	4.387	4.387

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Zone	Lumens	%Lamp	%Fixt
0-20	110.47	9.60	9.60
0-30	233.32	20.30	20.30
0-40	381.65	33.20	33.20
0-60	695.07	60.40	60.40
0-80	947.22	82.40	82.40
0-90	1030.1	89.60	89.60
10-90	1001.36	87.10	87.10
20-40	271.18	23.60	23.60
20-50	429.68	37.40	37.40
40-70	453.10	39.40	39.40
60-80	252.15	21.90	21.90
70-80	112.47	9.80	9.80
80-90	82.87	7.20	7.20
90-110	86.28	7.50	7.50
90-120	103.03	9.00	9.00
90-130	110.54	9.60	9.60
90-150	116.57	10.10	10.10
90-180	120.03	10.40	10.40
110-180	33.75	2.90	2.90
0-180	1150.13	100.00	100.00

Total Luminaire Efficiency = 100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	28.73
10-20	81.74
20-30	122.85
30-40	148.33
40-50	158.50
50-60	154.92
60-70	139.68
70-80	112.47
80-90	82.87
90-100	54.05
100-110	32.23
110-120	16.76
120-130	7.51
130-140	3.60
140-150	2.42
150-160	1.86
160-170	1.19
170-180	0.41

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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	117	117	117	117	113	113	113	113	105	105	105	99	99	99	92	92	92	90
1	104	98	92	87	100	94	89	85	88	84	80	82	79	76	77	74	72	69
2	93	84	76	69	89	81	74	68	75	69	64	71	66	61	66	62	58	55
3	84	73	64	56	81	70	62	55	66	59	53	61	56	51	58	53	48	46
4	77	64	54	47	74	62	53	46	58	50	45	54	48	43	51	46	41	38
5	71	57	47	40	68	55	46	40	52	44	38	49	42	37	46	40	35	33
6	65	51	42	35	62	49	41	34	47	39	33	44	37	32	41	35	31	29
7	60	46	37	31	58	45	36	30	42	35	29	40	33	28	38	32	27	25
8	56	42	33	27	54	41	33	27	39	31	26	37	30	25	35	29	24	22
9	52	38	30	24	50	37	29	24	35	28	23	34	27	23	32	26	22	20
10	49	35	27	22	47	35	27	22	33	26	21	31	25	20	30	24	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	18.1	19.6	18.6	20.1	20.6	23.7	25.2	24.2	25.7	26.3
	3H	19.9	21.3	20.5	21.8	22.4	26.8	28.2	27.4	28.7	29.3
	4H	20.7	22.0	21.2	22.6	23.2	28.3	29.6	28.9	30.2	30.8
	6H	21.4	22.6	21.9	23.2	23.8	29.9	31.2	30.5	31.7	32.3
	8H	21.7	22.8	22.2	23.4	24.0	30.8	32.0	31.4	32.6	33.2
	12H	21.9	23.0	22.5	23.6	24.3	31.8	33.0	32.4	33.5	34.2

UGR Viewed Endwise

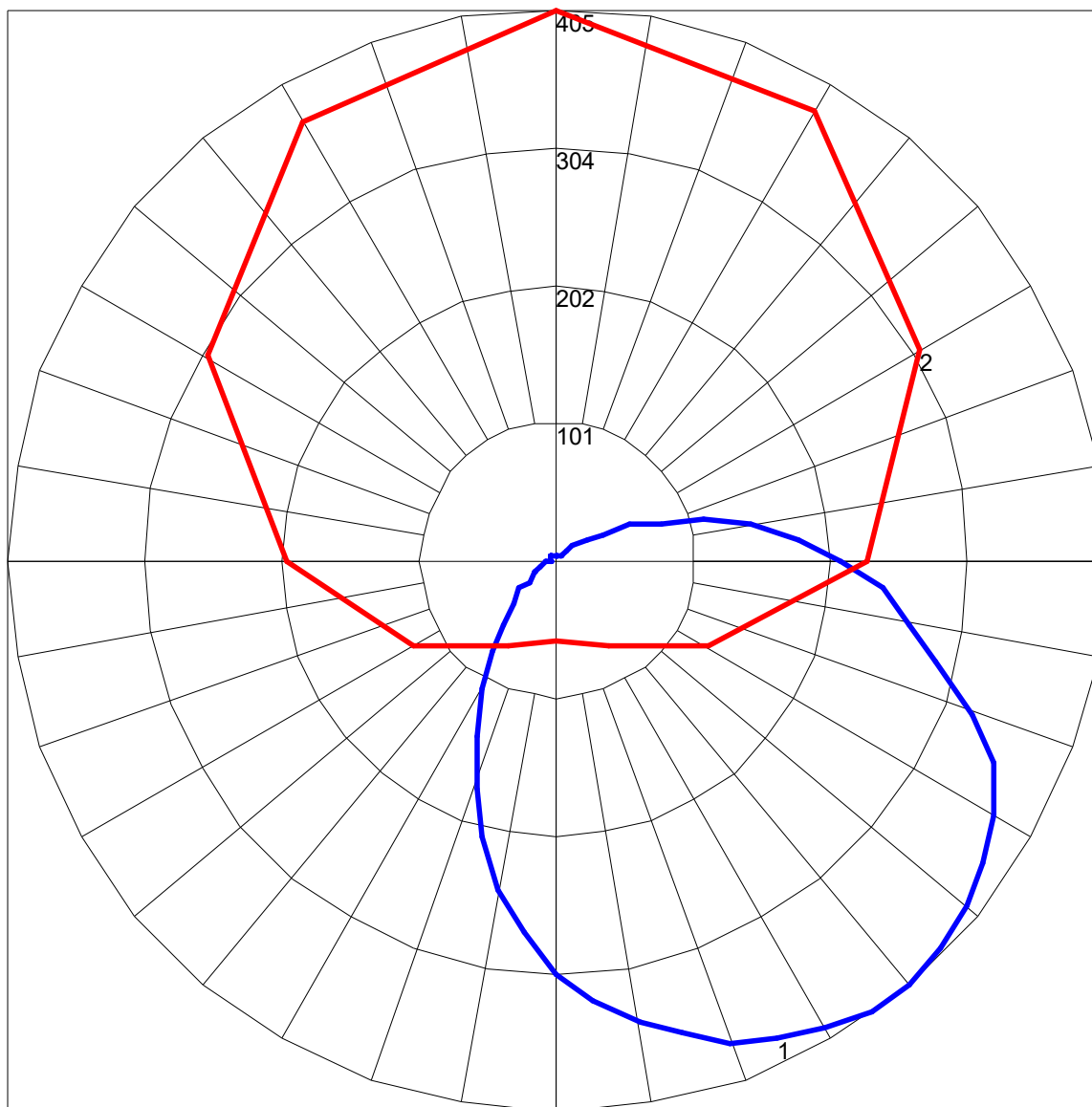
4H	2H	19.6	21.0	20.2	21.5	22.1	24.2	25.6	24.8	26.1	26.7
	3H	21.8	23.0	22.4	23.5	24.2	27.7	28.9	28.3	29.5	30.1
	4H	22.8	23.8	23.4	24.4	25.1	29.5	30.5	30.0	31.1	31.7
	6H	23.6	24.6	24.2	25.2	25.8	31.2	32.2	31.8	32.8	33.5
	8H	24.0	24.9	24.6	25.5	26.2	32.2	33.1	32.8	33.7	34.4
	12H	24.3	25.1	24.9	25.8	26.4	33.4	34.2	34.0	34.8	35.5
8H	4H	24.2	25.0	24.8	25.6	26.3	29.8	30.7	30.4	31.3	32.0
	6H	25.3	26.1	26.0	26.8	27.4	31.9	32.6	32.5	33.3	34.0
	8H	25.9	26.6	26.6	27.2	27.9	33.1	33.8	33.7	34.4	35.1
	12H	26.4	27.0	27.0	27.7	28.4	34.5	35.1	35.1	35.8	36.5
12H	4H	24.6	25.4	25.2	26.0	26.7	29.9	30.7	30.5	31.3	32.0
	6H	26.0	26.7	26.6	27.3	28.0	32.0	32.7	32.7	33.3	34.1
	8H	26.7	27.3	27.3	28.0	28.7	33.3	33.9	33.9	34.6	35.3

Maximum UGR = 36.5

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POLAR GRAPH



Maximum Candela = 404.86 Located At Horizontal Angle = 90, Vertical Angle = 40

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

2 - Horizontal Cone Through Vertical Angle (40) (Through Max. Cd.)