



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-9.6-8MM-3528-24-IP20-27K ALU-016R-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-9.6-8MM-3528-24-IP20-27K
[LUMINAIRE] ALU-016R-DOP
[LAMPCAT] 1
[LAMP] 3528 120LED CRI90 PCB 8MM
[BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	555 (1 lamp)
Total Lamp Lumens	555
Luminaire Lumens	555
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	58
Total Luminaire Watts	9.5
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	2.06
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	2863	4836	5939
55	2805	5692	7305
65	2736	7149	9582
75	2663	10097	13576
85	3082	24039	36388

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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	115.015	115.015	115.015	115.015	115.015	115.015	115.015	115.015	115.015	115.015
5	117.700	120.830	121.980	123.460	121.280	119.680	116.800	110.590	104.640	103.810
10	116.420	124.480	129.730	132.540	129.090	123.650	114.560	104.000	95.040	93.380
15	113.980	126.910	136.380	140.610	135.870	126.720	111.170	96.640	85.180	82.880
20	110.340	128.190	142.140	148.030	141.890	129.410	107.390	89.220	75.580	72.830
25	106.620	128.320	146.820	154.370	147.010	129.980	101.820	80.640	66.050	62.980
30	101.380	128.510	150.210	159.420	151.420	129.340	95.360	71.620	56.580	53.630
35	94.910	126.980	152.510	163.520	154.370	127.620	88.900	62.780	47.740	45.120
40	87.680	123.840	153.730	166.400	155.780	124.860	80.960	53.820	39.420	37.250
45	81.020	119.940	153.730	168.060	155.970	122.050	72.580	45.180	31.940	30.400
50	72.580	115.070	152.640	168.450	154.940	118.020	64.380	36.740	25.470	24.260
55	64.380	110.590	150.720	167.680	152.770	112.510	55.170	28.860	19.710	19.010
60	55.300	104.640	148.290	165.570	149.630	106.430	46.210	21.890	14.850	14.660
65	46.270	97.540	144.260	162.050	145.220	99.900	37.250	15.740	11.010	11.070
70	36.740	89.790	138.180	154.370	139.070	93.180	28.100	10.750	7.680	8.190
75	27.580	82.370	126.780	140.610	128.000	85.060	19.010	7.100	5.310	5.890
80	18.690	73.980	109.820	133.500	111.490	76.100	11.140	4.670	3.780	4.420
85	10.750	64.830	102.850	126.910	103.300	67.010	4.930	3.330	3.070	3.460
90	5.500	55.870	101.570	118.590	101.760	58.750	1.410	2.750	2.430	2.820
95	2.940	41.340	79.420	109.440	79.420	41.600	1.470	2.370	2.110	2.370
100	2.370	30.590	73.790	100.030	73.860	32.060	1.020	2.300	2.180	2.430
105	1.920	26.240	69.820	90.050	69.950	27.710	1.020	2.110	2.180	2.430
110	1.600	20.800	62.340	79.230	62.530	22.340	1.090	1.980	2.240	2.500
115	1.540	15.230	52.610	67.330	53.250	16.770	1.150	1.920	2.240	2.500
120	1.540	9.860	43.140	55.810	43.200	11.970	1.220	1.920	2.180	2.500
125	1.540	5.380	33.020	44.540	33.920	7.620	1.280	1.980	2.180	2.560
130	1.660	2.300	24.770	33.860	25.280	3.970	1.410	2.050	2.180	2.500
135	1.730	1.280	15.940	24.580	17.730	1.730	1.470	2.050	2.180	2.500
140	1.730	1.220	8.960	16.380	11.140	1.220	1.540	2.050	2.180	2.500
145	1.790	1.280	4.220	9.540	5.760	1.280	1.600	2.050	2.180	2.430
150	1.790	1.340	1.920	3.900	2.300	1.410	1.660	2.050	2.110	2.370
155	1.860	1.470	1.860	1.410	1.860	1.470	1.730	2.050	2.110	2.300
160	1.920	1.540	1.860	1.410	1.860	1.540	1.790	2.050	2.050	2.240
165	1.920	1.600	1.920	1.540	1.920	1.660	1.790	2.050	1.980	2.180
170	1.980	1.730	1.980	1.660	1.980	1.730	1.860	1.980	1.920	2.110
175	1.980	1.790	2.050	1.790	2.050	1.790	1.920	1.980	1.920	1.980
180	1.939	1.939	1.939	1.939	1.939	1.939	1.939	1.939	1.939	1.939

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	115.015	115.015	115.015
5	103.680	108.800	117.700
10	94.140	101.950	116.420
15	84.220	94.400	113.980
20	74.560	86.400	110.340
25	64.900	78.530	106.620
30	55.550	69.700	101.380
35	46.910	60.990	94.910
40	38.720	51.970	87.680
45	31.360	43.460	81.020
50	25.020	35.140	72.580
55	19.390	27.460	64.380
60	14.660	20.800	55.300
65	10.880	15.040	46.270
70	7.490	10.370	36.740
75	5.250	6.980	27.580
80	3.650	4.740	18.690

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85	3.010	3.460	10.750
90	2.430	2.940	5.500
95	2.110	2.690	2.940
100	2.180	2.430	2.370
105	2.180	2.300	1.920
110	2.180	2.180	1.600
115	2.180	2.050	1.540
120	2.180	2.050	1.540
125	2.240	2.050	1.540
130	2.240	2.050	1.660
135	2.240	2.110	1.730
140	2.240	2.110	1.730
145	2.240	2.110	1.790
150	2.180	2.110	1.790
155	2.110	2.050	1.860
160	2.110	2.050	1.920
165	2.050	2.050	1.920
170	1.980	1.980	1.980
175	1.920	1.920	1.980
180	1.939	1.939	1.939

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Zone	Lumens	%Lamp	%Fixt
0-20	42.34	7.60	7.60
0-30	91.11	16.40	16.40
0-40	152.29	27.40	27.40
0-60	289.58	52.20	52.20
0-80	411.64	74.20	74.20
0-90	457.24	82.40	82.40
10-90	446.35	80.40	80.40
20-40	109.95	19.80	19.80
20-50	177.93	32.10	32.10
40-70	202.97	36.60	36.60
60-80	122.06	22.00	22.00
70-80	56.37	10.20	10.20
80-90	45.60	8.20	8.20
90-110	60.55	10.90	10.90
90-120	78.71	14.20	14.20
90-130	89.19	16.10	16.10
90-150	96.21	17.30	17.30
90-180	97.82	17.60	17.60
110-180	37.26	6.70	6.70
0-180	555.06	100.00	100.00

Total Luminaire Efficiency = 100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	10.89
10-20	31.45
20-30	48.76
30-40	61.19
40-50	67.98
50-60	69.31
60-70	65.69
70-80	56.37
80-90	45.60
90-100	34.48
100-110	26.07
110-120	18.15
120-130	10.48
130-140	5.02
140-150	2.00
150-160	0.89
160-170	0.53
170-180	0.18

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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	115	115	115	115	110	110	110	110	101	101	101	93	93	93	86	86	86	82
1	101	95	90	85	97	91	86	82	83	79	76	76	73	70	70	67	65	62
2	91	81	73	66	86	78	70	64	71	65	60	65	60	56	59	55	52	49
3	82	70	61	54	78	67	59	52	62	55	49	56	51	46	52	47	43	40
4	75	61	52	44	71	59	50	43	54	47	41	50	43	38	45	40	36	33
5	68	54	45	38	65	52	43	37	48	40	35	44	38	33	41	35	31	28
6	63	49	39	32	60	47	38	32	43	36	30	40	33	28	37	31	27	24
7	58	44	35	28	55	42	34	28	39	32	26	36	30	25	33	28	23	21
8	54	40	31	25	51	38	30	24	36	28	23	33	27	22	30	25	21	19
9	50	36	28	22	48	35	27	22	33	26	21	30	24	20	28	23	19	17
10	47	33	25	20	45	32	25	20	30	23	19	28	22	18	26	21	17	15

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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	14.5	15.9	15.1	16.5	17.3	20.3	21.7	20.9	22.3	23.0
	3H	16.6	17.9	17.2	18.5	19.3	23.7	25.0	24.3	25.6	26.4
	4H	17.5	18.7	18.1	19.3	20.1	25.3	26.5	26.0	27.2	28.0
	6H	18.2	19.3	18.9	20.0	20.8	27.1	28.2	27.8	28.9	29.7
	8H	18.5	19.6	19.2	20.3	21.1	28.1	29.2	28.8	29.9	30.7
	12H	18.8	19.8	19.4	20.5	21.3	29.2	30.3	29.9	31.0	31.8

UGR Viewed Endwise

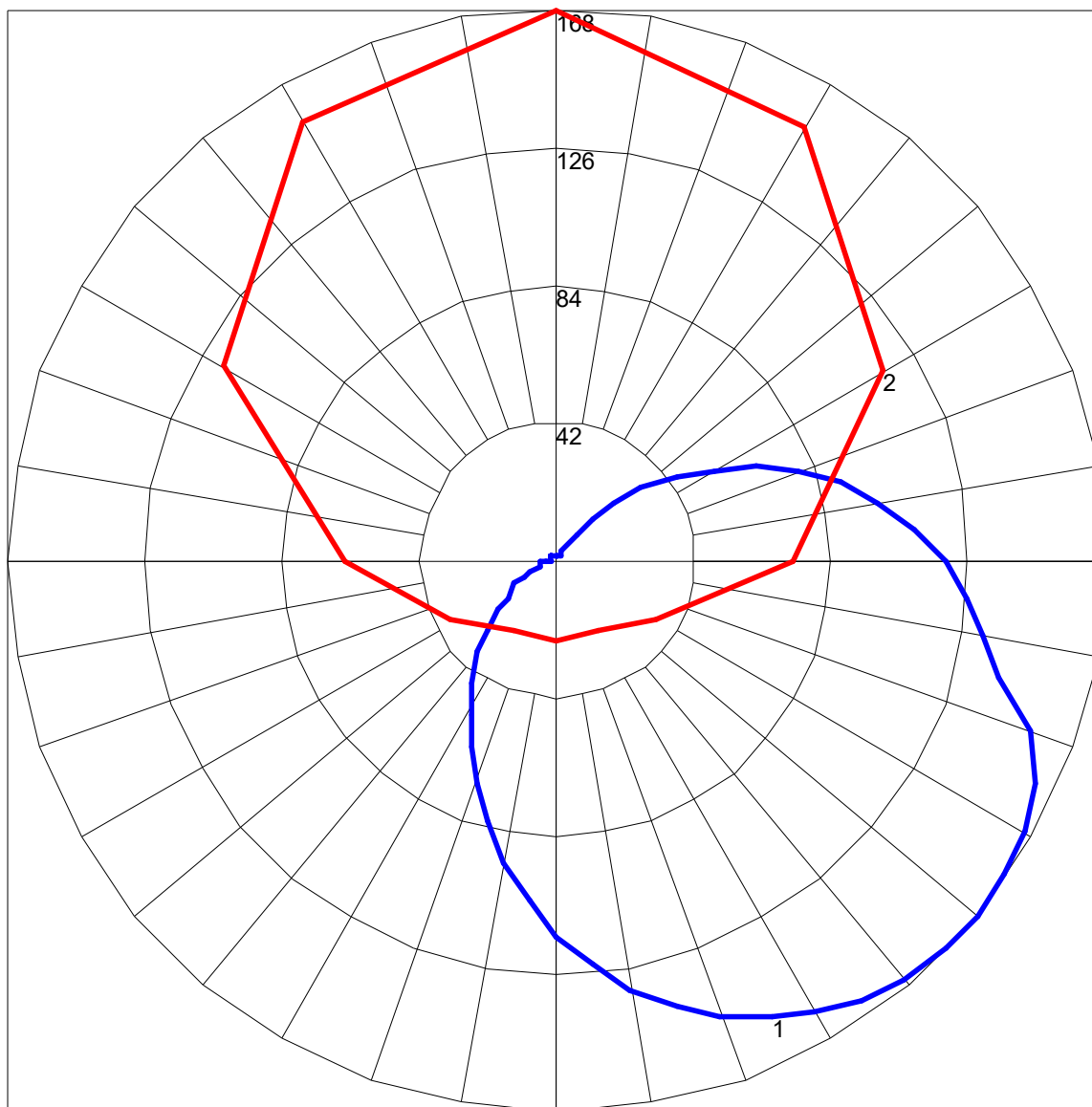
4H	2H	16.2	17.4	16.9	18.1	18.9	20.9	22.1	21.6	22.8	23.6
	3H	18.7	19.7	19.3	20.4	21.2	24.7	25.7	25.3	26.4	27.2
	4H	19.7	20.7	20.4	21.4	22.2	26.5	27.5	27.2	28.2	29.0
	6H	20.7	21.6	21.4	22.3	23.1	28.5	29.3	29.2	30.1	30.9
	8H	21.1	21.9	21.8	22.6	23.5	29.6	30.4	30.3	31.1	32.0
	12H	21.4	22.2	22.1	22.9	23.8	30.9	31.6	31.6	32.4	33.2
8H	4H	21.2	22.1	21.9	22.8	23.6	26.9	27.7	27.6	28.5	29.3
	6H	22.6	23.3	23.4	24.1	24.9	29.2	29.9	29.9	30.6	31.5
	8H	23.3	23.9	24.0	24.6	25.5	30.5	31.1	31.2	31.9	32.7
	12H	23.8	24.4	24.6	25.2	26.1	32.1	32.6	32.8	33.4	34.3
12H	4H	21.7	22.4	22.4	23.2	24.0	27.0	27.7	27.7	28.5	29.3
	6H	23.3	23.9	24.0	24.7	25.6	29.3	30.0	30.1	30.7	31.6
	8H	24.1	24.7	24.9	25.5	26.4	30.8	31.3	31.5	32.1	33.0

Maximum UGR = 34.3

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POLAR GRAPH



Maximum Candela = 168.45 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.)