



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-9.6-8MM-3528-24-IP20-27K ALU-013-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-013-DOP
[LAMPCAT] 1
[LAMP] 3528 120LED CRI90 PCB 8MM
[BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	490 (1 lamp)
Total Lamp Lumens	490
Luminaire Lumens	559
Total Luminaire Efficiency	114 %
Luminaire Efficacy Rating (LER)	58
Total Luminaire Watts	9.6
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	1.92
Spacing Criterion (Diagonal)	1.46
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	3326	5202	6250
55	3255	6027	7523
65	3210	7353	9652
75	3149	10150	13405
85	3688	23122	34847

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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	127.676	127.676	127.676	127.676	127.676	127.676	127.676	127.676	127.676	127.676
5	129.790	132.610	133.950	135.490	133.700	132.160	128.960	123.260	117.950	117.310
10	128.190	135.550	140.610	143.420	140.540	135.490	126.590	116.860	108.670	107.330
15	125.440	137.150	146.110	150.270	146.240	137.540	124.220	110.020	98.940	96.900
20	121.790	137.600	150.590	156.220	150.910	139.390	119.810	102.850	89.150	86.590
25	117.700	137.790	153.860	160.960	154.430	139.650	113.790	93.890	79.300	76.220
30	111.620	136.510	155.840	164.480	156.860	137.920	106.820	84.480	69.440	65.980
35	104.450	133.380	156.610	166.980	158.720	135.040	99.900	74.880	59.840	56.830
40	96.640	129.090	156.420	168.130	159.300	131.070	91.780	65.600	50.370	47.870
45	89.410	124.030	155.650	168.000	158.080	126.140	82.430	55.870	41.540	39.810
50	80.130	118.270	153.730	166.660	155.460	121.660	73.600	46.020	33.730	32.450
55	70.980	112.770	150.080	164.030	151.680	115.010	63.100	36.610	26.620	25.980
60	61.440	105.340	145.220	160.260	146.880	107.460	53.310	28.100	20.540	20.540
65	51.580	97.020	139.260	155.070	140.860	99.070	42.820	20.480	15.550	15.810
70	41.220	88.450	131.840	145.980	133.440	91.140	32.190	14.210	10.940	11.840
75	30.980	80.060	119.680	131.900	121.340	81.790	21.700	9.470	7.550	8.380
80	21.180	69.950	101.310	122.940	103.230	71.490	12.670	6.020	5.120	6.270
85	12.220	59.840	93.380	115.460	94.270	61.060	5.500	4.030	4.030	4.670
90	6.140	50.370	91.140	106.430	91.580	51.840	1.540	3.070	3.010	3.650
95	2.690	36.990	70.980	96.640	70.590	37.120	1.730	2.500	2.370	2.880
100	2.370	26.240	64.320	86.980	64.510	26.240	1.280	2.370	2.050	2.430
105	1.730	21.120	59.900	78.980	59.970	21.250	1.020	2.240	2.110	2.370
110	1.540	15.100	51.780	66.240	51.840	15.300	1.090	2.110	2.180	2.430
115	1.540	8.900	41.980	54.780	42.110	9.220	1.220	1.980	2.180	2.430
120	1.600	3.520	31.740	43.010	32.130	4.160	1.280	1.980	2.180	2.500
125	1.660	1.020	21.760	31.550	22.400	1.090	1.340	1.980	2.180	2.500
130	1.730	1.150	13.180	20.930	13.500	1.090	1.410	2.050	2.180	2.500
135	1.790	1.280	5.500	11.900	6.270	1.220	1.540	2.050	2.180	2.500
140	1.860	1.340	1.790	4.290	1.860	1.280	1.600	2.110	2.180	2.500
145	1.920	1.410	1.790	1.220	1.790	1.410	1.660	2.110	2.180	2.500
150	1.920	1.540	1.860	1.340	1.860	1.470	1.730	2.110	2.180	2.500
155	1.980	1.600	1.860	1.410	1.860	1.600	1.790	2.110	2.180	2.430
160	2.050	1.660	1.920	1.540	1.920	1.660	1.860	2.180	2.180	2.370
165	2.050	1.730	1.980	1.660	1.980	1.790	1.920	2.110	2.110	2.300
170	2.110	1.860	2.050	1.790	2.050	1.860	1.980	2.110	2.050	2.240
175	2.110	1.920	2.110	1.920	2.110	1.920	2.050	2.110	2.050	2.180
180	2.068	2.068	2.068	2.068	2.068	2.068	2.068	2.068	2.068	2.068

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	127.676	127.676	127.676
5	117.380	122.110	129.790
10	108.030	115.460	128.190
15	98.180	107.840	125.440
20	88.380	100.350	121.790
25	79.040	91.900	117.700
30	68.030	82.430	111.620
35	58.560	72.960	104.450
40	49.340	63.230	96.640
45	40.770	53.700	89.410
50	33.150	44.420	80.130
55	26.300	35.330	70.980
60	20.350	27.200	61.440
65	15.420	19.970	51.580
70	10.820	13.950	41.220
75	7.490	9.410	30.980
80	4.990	6.080	21.180

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85	4.030	4.100	12.220
90	3.070	3.200	6.140
95	2.370	2.690	2.690
100	2.110	2.560	2.370
105	2.180	2.430	1.730
110	2.180	2.300	1.540
115	2.240	2.180	1.540
120	2.240	2.110	1.600
125	2.240	2.110	1.660
130	2.240	2.110	1.730
135	2.240	2.180	1.790
140	2.300	2.180	1.860
145	2.300	2.180	1.920
150	2.240	2.180	1.920
155	2.240	2.180	1.980
160	2.180	2.180	2.050
165	2.180	2.180	2.050
170	2.110	2.110	2.110
175	2.050	2.110	2.110
180	2.068	2.068	2.068

IES INDOOR REPORT**PHOTOMETRIC FILENAME : FLX-9.6-8MM-3528-24-IP20-27K ALU-013-DOP_IESNA95.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	46.91	9.60	8.40
0-30	100.64	20.50	18.00
0-40	167.35	34.20	30.00
0-60	313.52	64.00	56.10
0-80	436.04	89.00	78.10
0-90	478.57	97.70	85.70
10-90	466.49	95.20	83.50
20-40	120.44	24.60	21.60
20-50	193.56	39.50	34.70
40-70	213.28	43.50	38.20
60-80	122.52	25.00	21.90
70-80	55.42	11.30	9.90
80-90	42.53	8.70	7.60
90-110	53.11	10.80	9.50
90-120	67.29	13.70	12.00
90-130	74.36	15.20	13.30
90-150	78.36	16.00	14.00
90-180	80.02	16.30	14.30
110-180	26.91	5.50	4.80
0-180	558.59	114.00	100.00

Total Luminaire Efficiency = 114.00%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	12.08
10-20	34.83
20-30	53.73
30-40	66.71
40-50	73.13
50-60	73.04
60-70	67.11
70-80	55.42
80-90	42.53
90-100	30.87
100-110	22.24
110-120	14.18
120-130	7.07
130-140	2.78
140-150	1.22
150-160	0.90
160-170	0.57
170-180	0.20

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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	132	132	132	132	127	127	127	127	118	118	118	109	109	109	101	101	101	98
1	117	110	104	98	112	106	100	95	98	93	89	90	87	83	83	81	78	74
2	105	94	85	77	100	90	82	75	83	77	71	77	71	67	71	67	63	59
3	95	81	71	63	90	78	69	61	72	64	58	67	60	55	62	56	52	48
4	86	71	60	52	82	69	59	51	64	55	48	59	52	46	55	49	44	40
5	79	63	52	44	75	61	51	43	57	48	41	53	45	39	49	43	37	34
6	73	57	46	38	69	55	45	37	51	42	36	47	40	34	44	38	33	30
7	67	51	41	33	64	49	40	33	46	38	31	43	36	30	40	34	29	26
8	62	46	36	30	60	45	36	29	42	34	28	39	32	27	37	30	26	23
9	58	43	33	26	56	41	32	26	39	31	25	36	29	24	34	28	23	21
10	55	39	30	24	52	38	29	23	36	28	22	34	27	22	31	25	21	19

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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	15.1	16.6	15.7	17.2	17.8	20.4	21.8	20.9	22.4	23.0
	3H	17.2	18.6	17.8	19.1	19.8	23.6	25.0	24.2	25.6	26.2
	4H	18.1	19.4	18.7	20.0	20.7	25.2	26.5	25.8	27.1	27.8
	6H	18.9	20.0	19.5	20.7	21.4	26.9	28.1	27.5	28.7	29.4
	8H	19.2	20.3	19.8	20.9	21.6	27.9	29.0	28.5	29.6	30.3
	12H	19.4	20.5	20.1	21.1	21.9	29.0	30.1	29.6	30.7	31.4

UGR Viewed Endwise

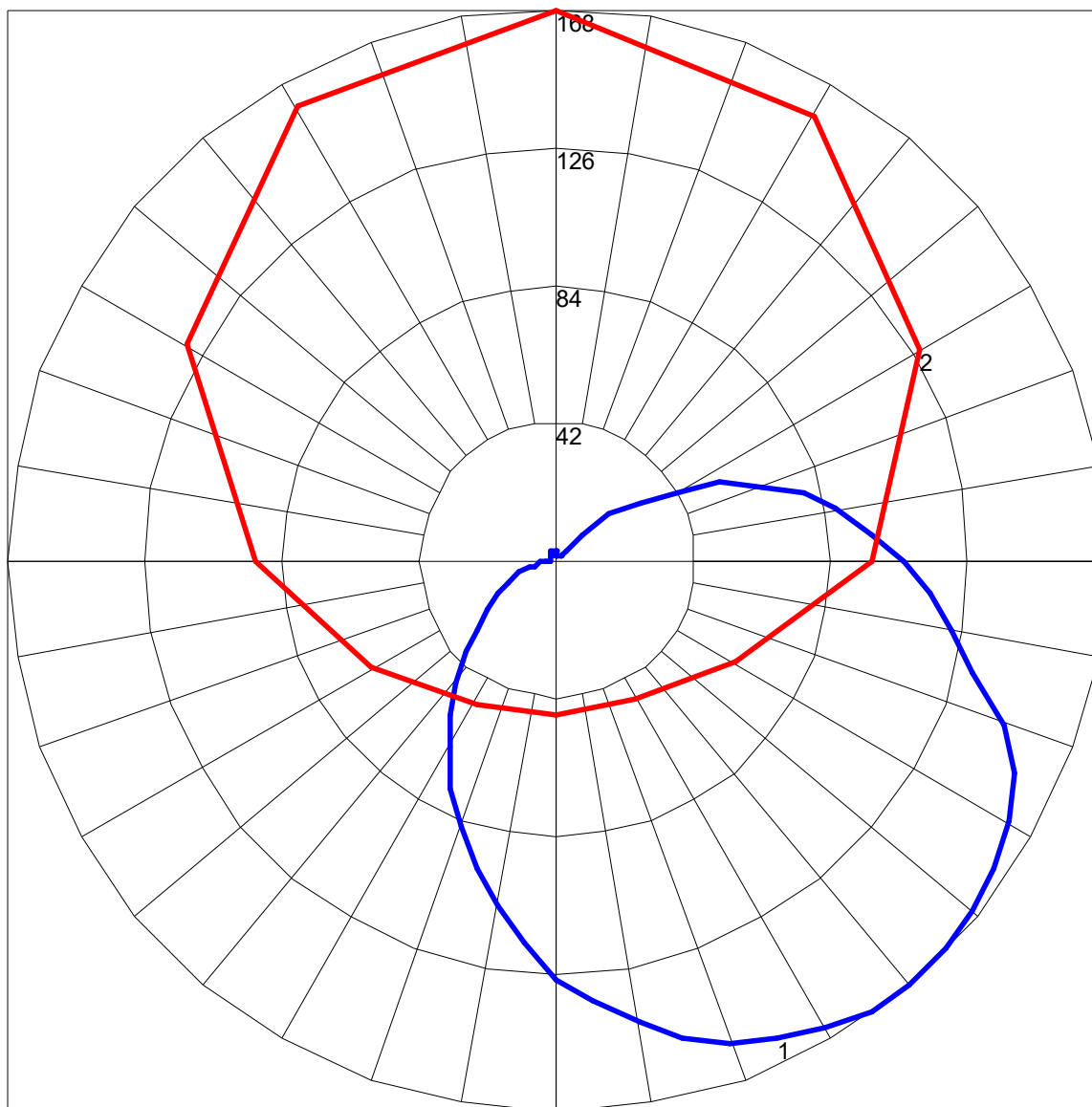
4H	2H	16.6	17.9	17.2	18.5	19.2	21.0	22.3	21.6	22.9	23.6
	3H	19.0	20.1	19.7	20.8	21.5	24.6	25.7	25.2	26.3	27.0
	4H	20.1	21.1	20.8	21.8	22.5	26.4	27.4	27.0	28.0	28.8
	6H	21.1	22.0	21.7	22.7	23.4	28.3	29.2	28.9	29.9	30.6
	8H	21.5	22.3	22.1	23.0	23.8	29.3	30.2	30.0	30.9	31.6
	12H	21.8	22.6	22.5	23.3	24.1	30.6	31.4	31.3	32.1	32.8
8H	4H	21.5	22.3	22.1	23.0	23.7	26.8	27.7	27.5	28.3	29.1
	6H	22.8	23.5	23.5	24.2	25.0	29.0	29.7	29.7	30.4	31.2
	8H	23.4	24.1	24.1	24.8	25.6	30.2	30.9	30.9	31.6	32.4
	12H	24.0	24.6	24.7	25.3	26.1	31.8	32.3	32.5	33.0	33.9
12H	4H	21.9	22.6	22.5	23.3	24.1	26.9	27.7	27.6	28.4	29.1
	6H	23.4	24.0	24.1	24.7	25.5	29.1	29.8	29.8	30.5	31.3
	8H	24.2	24.8	24.9	25.5	26.3	30.5	31.1	31.2	31.8	32.6

Maximum UGR = 33.9

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POLAR GRAPH



Maximum Candela = 168.13 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.)