



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-9.6-8MM-3528-24-IP20-27K LL-0725 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-9.6-8MM-3528-24-IP20-27K
 [LUMINAIRE] LL-0725 ALU LL-0725 DFR
 [LAMPCAT] 1
 [LAMP] 3528 120LED CRI90 PCB 8MM
 [BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	578.8 (1 lamp)
Total Lamp Lumens	578.8
Luminaire Lumens	579
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	61
Total Luminaire Watts	9.5
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	2.16
Spacing Criterion (Diagonal)	1.46
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	8281	15769	19868
55	7659	18322	24411
65	7458	22590	31798
75	7745	30633	43963
85	12088	73328	115828

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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	133.729	133.729	133.729	133.729	133.729	133.729	133.729	133.729	133.729	133.729
5	137.470	142.020	143.870	145.980	142.980	140.420	134.340	125.890	118.400	118.080
10	136.130	147.710	154.940	158.400	153.090	144.830	130.370	116.220	104.900	103.680
15	132.800	151.420	165.120	170.180	162.240	147.710	124.740	105.410	90.880	88.900
20	128.450	153.340	173.890	180.800	170.050	148.860	117.630	93.890	79.680	74.500
25	123.580	154.180	180.930	189.820	176.130	148.220	109.630	82.430	64.000	62.020
30	116.480	154.110	186.370	197.630	180.800	146.370	100.800	70.980	52.800	49.150
35	107.970	152.060	189.950	203.840	183.680	143.230	90.370	59.970	41.220	38.660
40	98.300	147.970	192.060	208.190	184.960	137.790	79.620	50.500	32.380	30.210
45	87.870	142.140	192.510	210.820	184.450	130.560	68.160	39.740	24.960	23.300
50	77.380	135.040	191.300	211.460	182.400	122.110	57.340	30.980	19.140	17.980
55	65.920	126.980	188.420	210.110	178.750	112.900	47.300	23.680	14.660	13.950
60	57.150	117.890	183.940	206.780	173.700	102.850	37.180	17.470	11.070	10.820
65	47.300	108.350	178.180	201.660	167.230	93.380	28.220	12.480	8.450	8.510
70	38.460	98.300	167.740	190.910	159.230	83.390	20.290	8.770	6.460	6.850
75	30.080	88.060	149.890	170.750	144.830	72.770	13.120	6.140	5.060	5.440
80	22.590	78.720	134.530	162.110	119.940	62.850	7.170	4.420	4.220	4.740
85	15.810	68.740	123.070	151.490	110.910	53.120	2.750	3.520	3.780	4.290
90	9.980	59.140	117.440	136.130	105.470	44.100	1.600	3.010	3.390	3.970
95	3.390	38.270	86.140	119.620	67.520	27.460	1.220	2.560	3.070	3.650
100	1.860	30.020	81.090	104.580	68.990	18.240	0.960	2.300	2.750	3.330
105	1.730	18.820	63.620	83.140	54.210	8.770	1.090	2.110	2.560	3.070
110	1.660	7.230	40.640	50.560	32.320	1.220	1.150	2.050	2.430	2.940
115	1.470	1.020	19.780	24.960	14.660	0.830	1.220	2.050	2.430	2.880
120	1.540	0.830	7.620	10.180	4.990	0.900	1.280	2.110	2.500	2.940
125	1.790	0.900	2.180	3.260	1.660	0.960	1.410	2.180	2.500	2.940
130	1.920	1.090	1.600	0.830	1.470	1.020	1.470	2.240	2.560	2.940
135	1.980	1.220	1.540	0.900	1.470	1.150	1.600	2.240	2.560	2.940
140	2.050	1.340	1.540	0.960	1.540	1.280	1.660	2.300	2.560	2.880
145	2.110	1.410	1.600	1.090	1.540	1.340	1.730	2.300	2.560	2.880
150	2.180	1.540	1.660	1.220	1.660	1.470	1.790	2.300	2.500	2.820
155	2.180	1.600	1.790	1.340	1.730	1.600	1.860	2.300	2.430	2.750
160	2.240	1.730	1.860	1.470	1.790	1.730	1.980	2.300	2.370	2.620
165	2.240	1.860	1.920	1.600	1.920	1.790	2.110	2.300	2.300	2.560
170	2.300	1.920	2.050	1.790	1.980	1.920	2.180	2.300	2.240	2.430
175	2.300	2.050	2.180	1.920	2.110	1.980	2.240	2.240	2.110	2.300
180	2.170	2.170	2.170	2.170	2.170	2.170	2.170	2.170	2.170	2.170

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	133.729	133.729	133.729
5	118.910	126.780	137.470
10	105.920	117.500	136.130
15	91.970	107.520	132.800
20	79.550	97.340	128.450
25	66.180	86.980	123.580
30	60.990	75.650	116.480
35	43.970	64.580	107.970
40	34.560	53.950	98.300
45	26.820	44.990	87.870
50	20.480	35.390	77.380
55	15.620	26.820	65.920
60	11.780	19.710	57.150
65	8.830	13.890	47.300
70	6.340	9.600	38.460
75	4.670	6.460	30.080
80	3.330	4.480	22.590

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85	3.460	3.460	15.810
90	2.940	3.010	9.980
95	2.750	2.430	3.390
100	2.750	2.300	1.860
105	2.560	2.050	1.730
110	2.500	2.050	1.660
115	2.430	2.050	1.470
120	2.500	2.110	1.540
125	2.560	2.180	1.790
130	2.560	2.240	1.920
135	2.560	2.300	1.980
140	2.560	2.300	2.050
145	2.560	2.300	2.110
150	2.560	2.300	2.180
155	2.500	2.300	2.180
160	2.430	2.300	2.240
165	2.370	2.300	2.240
170	2.240	2.240	2.300
175	2.180	2.180	2.300
180	2.170	2.170	2.170

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Zone	Lumens	%Lamp	%Fixt
0-20	48.88	8.40	8.40
0-30	104.50	18.10	18.10
0-40	173.51	30.00	30.00
0-60	325.88	56.30	56.30
0-80	459.85	79.40	79.40
0-90	509.57	88.00	88.00
10-90	496.94	85.90	85.90
20-40	124.63	21.50	21.50
20-50	200.42	34.60	34.60
40-70	224.67	38.80	38.80
60-80	133.97	23.10	23.10
70-80	61.66	10.70	10.70
80-90	49.73	8.60	8.60
90-110	55.75	9.60	9.60
90-120	62.78	10.80	10.80
90-130	64.85	11.20	11.20
90-150	67.53	11.70	11.70
90-180	69.27	12.00	12.00
110-180	13.52	2.30	2.30
0-180	578.84	100.00	100.00

Total Luminaire Efficiency = 100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	12.63
10-20	36.24
20-30	55.62
30-40	69.01
40-50	75.79
50-60	76.58
60-70	72.31
70-80	61.66
80-90	49.73
90-100	34.69
100-110	21.06
110-120	7.03
120-130	2.07
130-140	1.45
140-150	1.23
150-160	0.94
160-170	0.60
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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	91	91	91	88
1	102	96	91	85	98	93	88	83	86	82	78	80	77	73	74	72	69	66
2	92	82	74	67	88	79	71	65	73	67	62	68	63	59	63	59	55	52
3	83	71	62	54	79	68	60	53	64	56	50	59	53	48	55	50	46	43
4	75	62	52	45	72	60	51	44	56	48	42	52	46	40	48	43	38	36
5	69	55	45	38	66	53	44	37	50	42	36	46	40	34	43	38	33	30
6	64	49	40	33	61	48	39	32	45	37	31	42	35	30	39	33	29	26
7	59	45	35	29	56	43	34	28	40	33	27	38	31	26	36	30	25	23
8	55	41	32	25	52	39	31	25	37	29	24	35	28	23	33	27	22	20
9	51	37	29	23	49	36	28	22	34	27	22	32	25	21	30	24	20	18
10	48	34	26	20	46	33	25	20	31	24	19	30	23	19	28	22	18	16

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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	18.5	20.0	19.1	20.6	21.2	25.1	26.6	25.6	27.1	27.7
	3H	20.5	21.9	21.0	22.4	23.1	28.4	29.8	29.0	30.4	31.0
	4H	21.4	22.7	21.9	23.3	23.9	30.1	31.4	30.6	31.9	32.6
	6H	22.2	23.4	22.8	24.0	24.7	31.8	33.1	32.4	33.6	34.3
	8H	22.5	23.7	23.1	24.3	25.0	32.8	34.0	33.4	34.6	35.2
	12H	22.9	24.1	23.5	24.7	25.4	33.9	35.1	34.5	35.7	36.4

UGR Viewed Endwise

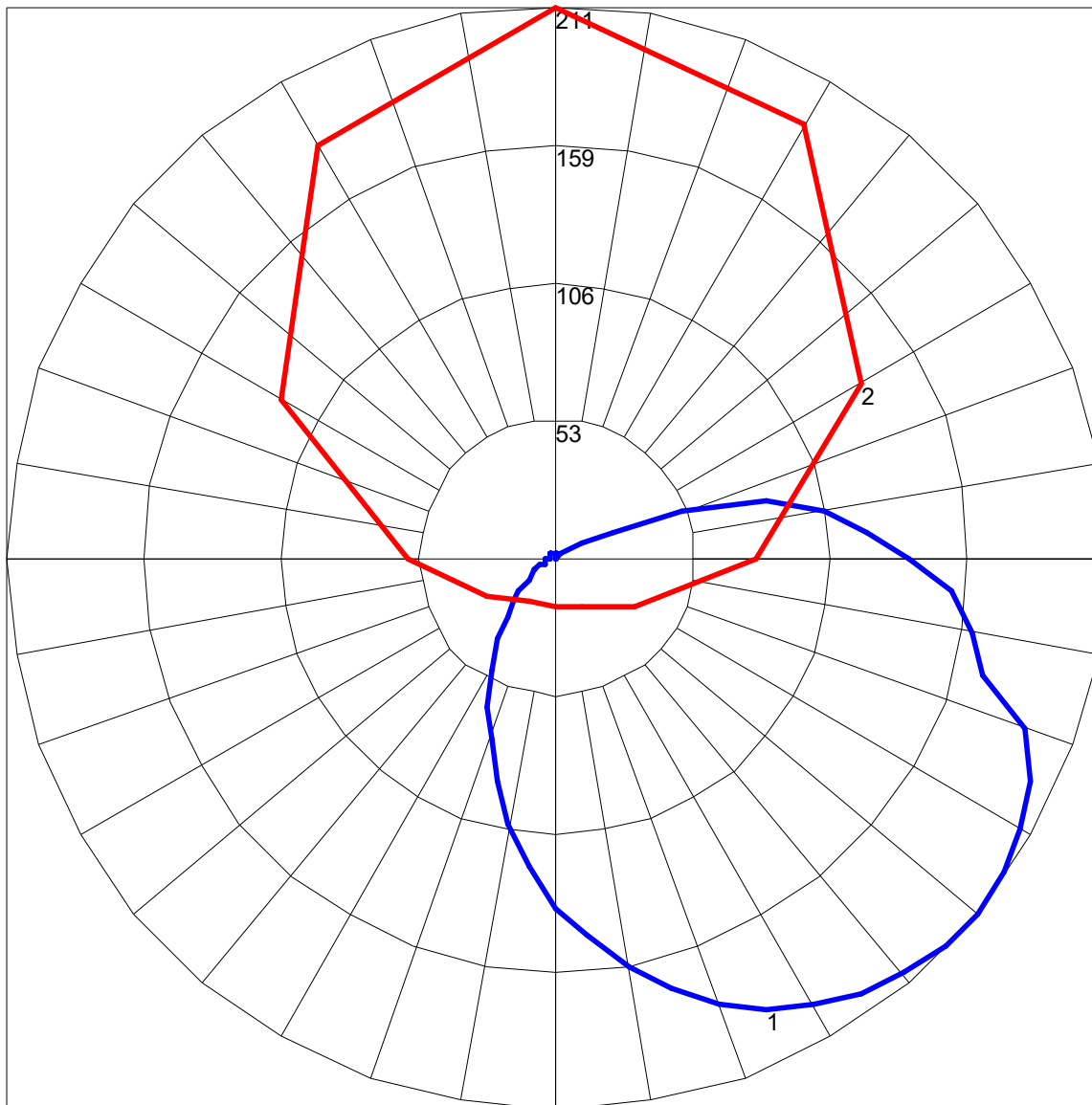
4H	2H	20.5	21.8	21.0	22.4	23.0	25.6	26.9	26.2	27.5	28.1
	3H	22.7	23.9	23.3	24.5	25.2	29.3	30.5	29.9	31.1	31.7
	4H	23.8	24.8	24.4	25.4	26.1	31.2	32.2	31.8	32.8	33.5
	6H	24.8	25.7	25.4	26.3	27.0	33.1	34.1	33.8	34.7	35.4
	8H	25.2	26.1	25.8	26.7	27.4	34.2	35.1	34.9	35.8	36.5
	12H	25.6	26.4	26.3	27.1	27.8	35.5	36.3	36.2	37.0	37.7
8H	4H	25.4	26.3	26.0	26.9	27.7	31.5	32.4	32.1	33.0	33.8
	6H	26.7	27.5	27.4	28.2	28.9	33.8	34.5	34.4	35.2	35.9
	8H	27.4	28.1	28.0	28.8	29.5	35.1	35.8	35.7	36.4	37.2
	12H	28.0	28.6	28.7	29.3	30.1	36.6	37.3	37.3	37.9	38.7
12H	4H	25.9	26.8	26.6	27.4	28.1	31.5	32.4	32.2	33.0	33.7
	6H	27.5	28.2	28.2	28.8	29.6	33.9	34.6	34.5	35.2	36.0
	8H	28.3	28.9	29.0	29.6	30.4	35.3	35.9	36.0	36.6	37.4

Maximum UGR = 38.7

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POLAR GRAPH



Maximum Candela = 211.46 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.)