



IES INDOOR REPORT

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

CHARACTERISTICS

Lumens Per Lamp	635.1 (1 lamp)
Total Lamp Lumens	635.1
Luminaire Lumens	635
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	68
Total Luminaire Watts	9.4
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	2.14
Spacing Criterion (Diagonal)	1.44
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	3433	6336	7973
55	3165	7324	9731
65	2929	8963	12560
75	2713	12167	17289
85	3228	27892	45124

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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	145.750	145.750	145.750	145.750	145.750	145.750	145.750	145.750	145.750	145.750
5	149.500	154.370	156.420	158.720	155.650	155.520	148.100	137.790	127.940	126.400
10	147.900	160.190	167.940	172.030	167.230	161.340	144.960	126.910	111.040	107.520
15	144.770	164.100	177.600	183.620	176.900	165.630	140.290	114.820	93.250	88.000
20	139.970	166.340	185.980	194.240	185.340	168.640	134.720	102.400	75.970	69.500
25	134.530	166.780	193.020	203.780	192.900	169.150	126.910	88.770	59.710	52.740
30	127.100	166.660	198.530	211.840	199.100	168.000	117.700	75.070	45.630	39.170
35	117.820	164.160	202.690	218.560	203.650	164.930	108.100	62.530	34.500	29.250
40	107.330	159.490	204.990	223.230	206.080	160.060	96.510	50.750	25.920	21.890
45	97.150	153.280	205.310	225.600	206.460	154.500	84.290	40.450	19.520	16.700
50	84.930	145.280	203.580	225.660	204.740	147.010	72.770	31.360	14.850	12.860
55	72.640	136.260	199.940	223.360	200.900	137.410	60.100	23.740	11.200	9.980
60	61.060	127.170	194.690	219.010	195.140	126.850	48.510	17.470	8.380	7.810
65	49.540	115.650	187.520	212.420	187.460	115.200	37.760	12.290	6.270	6.140
70	38.270	103.680	177.410	200.130	177.220	104.190	27.390	8.260	4.540	4.800
75	28.100	91.710	160.320	179.070	160.260	91.900	18.050	5.380	3.390	3.780
80	19.010	80.320	136.510	168.580	137.340	79.550	10.430	3.580	2.690	3.200
85	11.260	68.610	125.950	157.380	125.180	67.260	4.930	2.690	2.370	2.820
90	6.270	57.410	120.320	142.590	119.490	56.640	2.500	2.370	2.180	2.620
95	3.140	39.870	86.530	126.780	85.180	37.570	1.470	2.370	2.240	2.690
100	2.300	28.670	78.340	109.060	77.500	27.710	1.090	2.300	2.370	2.820
105	1.980	23.040	67.900	89.790	65.470	22.210	1.090	2.240	2.430	2.880
110	1.790	16.320	54.080	69.440	53.700	15.940	1.220	2.180	2.560	2.940
115	1.660	10.300	39.040	50.300	39.040	10.180	1.280	2.180	2.620	3.010
120	1.660	5.500	26.750	34.110	26.430	6.020	1.410	2.240	2.690	3.070
125	1.730	2.430	17.340	22.340	17.600	3.010	1.470	2.300	2.690	3.070
130	1.920	1.220	11.330	14.530	11.390	1.470	1.600	2.370	2.690	3.140
135	1.980	1.280	6.530	9.340	7.100	1.220	1.660	2.430	2.750	3.140
140	1.980	1.340	3.460	5.570	4.100	1.340	1.790	2.430	2.750	3.140
145	2.050	1.410	1.860	2.880	2.180	1.410	1.860	2.500	2.690	3.070
150	2.110	1.540	1.790	1.410	1.790	1.540	1.920	2.500	2.690	3.010
155	2.110	1.600	1.860	1.410	1.860	1.660	1.980	2.500	2.620	2.880
160	2.180	1.730	1.920	1.540	1.920	1.790	2.050	2.430	2.560	2.820
165	2.240	1.860	2.050	1.660	2.050	1.920	2.110	2.430	2.500	2.690
170	2.300	1.920	2.180	1.860	2.180	2.050	2.180	2.370	2.370	2.560
175	2.300	2.050	2.240	2.050	2.300	2.180	2.240	2.300	2.240	2.430
180	2.265	2.265	2.265	2.265	2.265	2.265	2.265	2.265	2.265	2.265

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	145.750	145.750	145.750
5	126.980	138.750	149.500
10	110.020	127.940	147.900
15	92.350	115.780	144.770
20	75.070	102.910	139.970
25	58.820	89.980	134.530
30	44.860	76.290	127.100
35	34.050	63.550	117.820
40	25.600	51.460	107.330
45	19.330	40.960	97.150
50	14.720	31.740	84.930
55	11.140	23.940	72.640
60	8.380	17.600	61.060
65	6.340	12.480	49.540
70	4.540	8.450	38.270
75	3.390	5.630	28.100
80	2.690	3.780	19.010

IES INDOOR REPORT**PHOTOMETRIC FILENAME : FLX-9.6-8MM-3528-24-IP20-27K ALU-016R-DFR_IESNA95.IES****CANDELA TABULATION - (Cont.)**

85	2.430	2.880	11.260
90	2.300	2.560	6.270
95	2.300	2.560	3.140
100	2.430	2.560	2.300
105	2.500	2.430	1.980
110	2.620	2.370	1.790
115	2.690	2.370	1.660
120	2.690	2.370	1.660
125	2.750	2.430	1.730
130	2.750	2.500	1.920
135	2.820	2.500	1.980
140	2.820	2.560	1.980
145	2.820	2.560	2.050
150	2.750	2.560	2.110
155	2.690	2.560	2.110
160	2.620	2.500	2.180
165	2.500	2.500	2.240
170	2.430	2.430	2.300
175	2.300	2.370	2.300
180	2.265	2.265	2.265

IES INDOOR REPORT**PHOTOMETRIC FILENAME : FLX-9.6-8MM-3528-24-IP20-27K ALU-016R-DFR_IESNA95.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	52.73	8.30	8.30
0-30	111.87	17.60	17.60
0-40	185.19	29.20	29.20
0-60	349.51	55.00	55.00
0-80	494.05	77.80	77.80
0-90	546.60	86.10	86.10
10-90	532.87	83.90	83.90
20-40	132.46	20.90	20.90
20-50	213.84	33.70	33.70
40-70	242.61	38.20	38.20
60-80	144.54	22.80	22.80
70-80	66.25	10.40	10.40
80-90	52.55	8.30	8.30
90-110	62.23	9.80	9.80
90-120	76.12	12.00	12.00
90-130	82.32	13.00	13.00
90-150	86.67	13.60	13.60
90-180	88.50	13.90	13.90
110-180	26.27	4.10	4.10
0-180	635.10	100.00	100.00

Total Luminaire Efficiency = 100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	13.73
10-20	39.00
20-30	59.14
30-40	73.32
40-50	81.38
50-60	82.95
60-70	78.28
70-80	66.25
80-90	52.55
90-100	37.29
100-110	24.94
110-120	13.89
120-130	6.20
130-140	2.85
140-150	1.49
150-160	0.99
160-170	0.62
170-180	0.21

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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	111	111	111	111	103	103	103	96	96	96	89	89	89	86
1	102	96	90	85	98	92	87	83	85	81	77	79	76	72	73	70	68	65
2	91	82	74	67	87	79	71	65	73	66	61	67	62	58	62	58	54	51
3	83	71	61	54	79	68	60	53	63	56	50	58	52	47	54	49	45	42
4	75	62	52	45	72	60	51	44	55	48	42	51	45	40	48	42	38	35
5	69	55	45	38	66	53	44	37	49	41	36	46	39	34	42	37	32	30
6	63	49	40	33	60	47	39	32	44	37	31	41	34	29	38	33	28	26
7	59	44	35	29	56	43	34	28	40	32	27	37	31	26	35	29	25	22
8	54	40	31	25	52	39	31	25	37	29	24	34	28	23	32	26	22	20
9	51	37	28	23	49	36	28	22	34	26	21	31	25	21	30	24	20	18
10	48	34	26	20	46	33	25	20	31	24	19	29	23	19	27	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	15.2	16.7	15.7	17.2	17.9	21.8	23.3	22.3	23.8	24.5
	3H	17.1	18.4	17.6	19.0	19.7	25.1	26.4	25.7	27.0	27.7
	4H	17.8	19.1	18.4	19.7	20.4	26.7	28.0	27.3	28.6	29.2
	6H	18.5	19.7	19.1	20.3	21.0	28.4	29.6	29.0	30.2	30.9
	8H	18.7	19.9	19.3	20.5	21.2	29.3	30.5	30.0	31.1	31.8
	12H	19.0	20.1	19.6	20.7	21.4	30.5	31.6	31.1	32.2	32.9

UGR Viewed Endwise

4H	2H	17.1	18.4	17.7	19.0	19.7	22.3	23.6	22.9	24.2	24.9
	3H	19.3	20.4	19.9	21.0	21.7	26.0	27.1	26.6	27.8	28.5
	4H	20.3	21.3	20.9	21.9	22.7	27.8	28.8	28.4	29.5	30.2
	6H	21.1	22.0	21.7	22.7	23.4	29.7	30.7	30.4	31.3	32.1
	8H	21.4	22.3	22.1	23.0	23.7	30.8	31.7	31.5	32.3	33.1
	12H	21.7	22.5	22.4	23.2	24.0	32.1	32.9	32.7	33.5	34.3

8H	4H	21.9	22.8	22.6	23.4	24.2	28.2	29.0	28.8	29.7	30.5
	6H	23.1	23.9	23.8	24.6	25.3	30.4	31.1	31.1	31.8	32.6
	8H	23.7	24.3	24.4	25.1	25.8	31.7	32.3	32.4	33.1	33.8
	12H	24.2	24.8	24.9	25.5	26.3	33.2	33.8	33.9	34.5	35.3

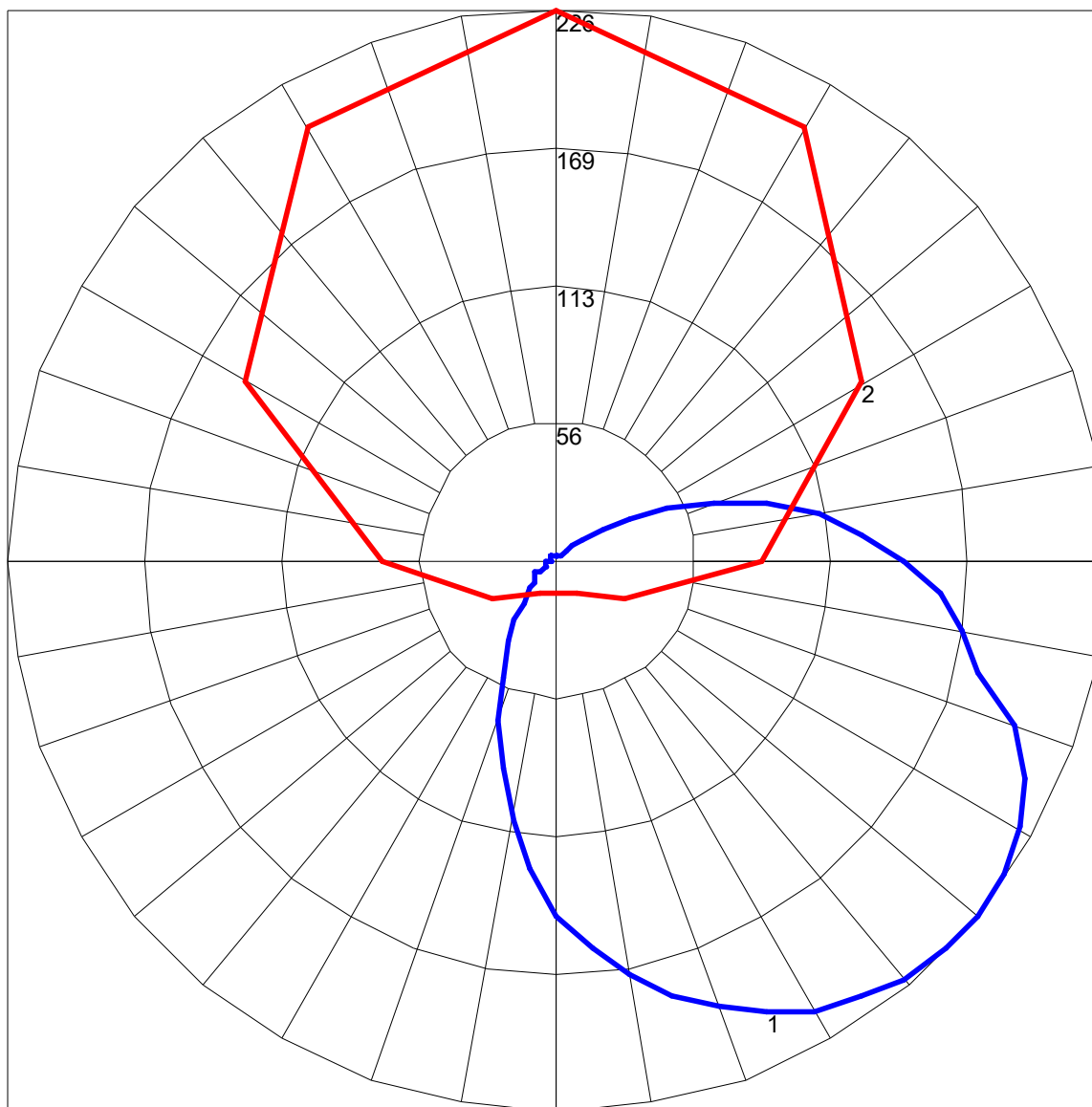
12H	4H	22.4	23.2	23.1	23.9	24.7	28.2	29.0	28.9	29.7	30.5
	6H	23.9	24.5	24.6	25.2	26.0	30.5	31.2	31.2	31.9	32.7
	8H	24.6	25.2	25.3	25.9	26.8	31.9	32.5	32.6	33.2	34.1

Maximum UGR = 35.3

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POLAR GRAPH



Maximum Candela = 225.66 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.)