



IES INDOOR REPORT

PHOTOMETRIC FILENAME : FLX-14.4-10MM-3528-24-IP20-27K ALU-006-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-14.4-10MM-3528-24-IP20-27K
[LUMINAIRE] ALU-006-DFR
[LAMPCAT] 1
[LAMP] 3528 180LED CRI90 PCB 10MM
[BALLAST] DC24V

CHARACTERISTICS

Lumens Per Lamp	942.3 (1 lamp)
Total Lamp Lumens	942.3
Luminaire Lumens	942
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	67
Total Luminaire Watts	14.1
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	2.00
Spacing Criterion (Diagonal)	1.40
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	5643	9890	12385
55	5169	11166	14810
65	4669	13283	18778
75	4254	17592	25406
85	4557	37811	63800

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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	237.924	237.924	237.924	237.924	237.924	237.924	237.924	237.924	237.924	237.924
5	242.430	248.960	252.290	255.100	252.030	248.260	241.790	228.100	215.490	212.610
10	239.040	255.550	267.010	272.640	267.390	257.090	238.530	214.590	192.770	186.620
15	233.220	259.390	278.980	287.740	280.580	262.980	231.680	197.700	168.130	158.590
20	224.830	260.740	289.150	301.500	292.350	265.730	222.530	179.200	142.460	130.370
25	214.780	259.260	297.220	313.340	301.570	265.730	211.780	159.170	116.100	102.530
30	202.180	256.130	302.780	322.690	307.900	263.360	197.440	138.110	91.390	77.820
35	186.750	249.920	305.790	329.410	311.680	259.260	181.440	117.180	70.270	58.430
40	170.180	240.510	305.860	332.860	312.510	251.140	163.840	96.900	52.930	43.330
45	151.680	228.800	302.910	332.930	310.210	240.510	144.000	78.400	39.680	32.580
50	132.610	215.420	296.830	329.540	304.580	227.520	124.740	61.500	30.020	24.700
55	112.700	199.100	287.870	322.940	295.940	212.670	104.830	46.850	22.590	19.010
60	93.500	181.630	276.930	313.790	285.180	195.260	85.060	34.750	16.960	14.850
65	75.010	163.580	263.230	301.700	272.190	176.380	66.880	24.640	12.740	11.580
70	57.470	143.680	246.780	280.640	255.810	157.570	49.220	16.580	9.150	8.960
75	41.860	124.930	221.250	249.980	229.570	137.660	33.280	10.690	6.460	6.780
80	27.520	105.410	181.570	231.170	192.060	117.890	19.840	6.590	4.740	5.500
85	15.100	87.100	163.460	211.390	171.010	98.500	9.540	4.350	3.970	4.540
90	7.100	69.890	151.490	185.980	157.950	80.830	2.620	3.460	3.390	3.970
95	6.980	46.910	105.280	157.380	109.630	52.100	2.180	3.260	3.070	3.710
100	3.460	38.140	89.920	127.230	94.460	48.900	1.660	3.200	3.200	3.780
105	2.370	23.740	108.800	136.130	108.350	25.730	1.540	3.260	3.330	3.900
110	2.300	14.780	55.040	70.720	55.550	14.660	1.660	3.330	3.520	4.100
115	2.300	7.300	37.950	47.740	37.630	6.210	1.860	3.390	3.710	4.220
120	2.430	3.520	24.260	31.300	23.620	2.940	1.980	3.390	3.780	4.290
125	2.620	1.790	13.890	18.940	13.120	1.660	2.180	3.390	3.900	4.420
130	2.750	1.790	7.360	10.180	6.780	1.600	2.300	3.460	3.970	4.480
135	2.820	1.920	4.220	5.310	3.900	1.790	2.500	3.520	3.970	4.480
140	2.940	2.110	2.560	2.880	2.430	1.980	2.620	3.580	4.030	4.480
145	3.140	2.240	2.370	1.860	2.370	2.180	2.750	3.580	4.030	4.480
150	3.260	2.430	2.500	1.920	2.500	2.370	2.880	3.650	3.970	4.420
155	3.390	2.560	2.690	2.180	2.620	2.560	3.010	3.650	3.970	4.350
160	3.460	2.750	2.820	2.430	2.820	2.750	3.140	3.710	3.900	4.220
165	3.520	2.940	3.010	2.690	3.010	2.940	3.260	3.650	3.780	4.100
170	3.520	3.070	3.200	2.940	3.200	3.140	3.330	3.650	3.650	3.970
175	3.520	3.200	3.390	3.200	3.390	3.330	3.460	3.520	3.520	3.710
180	3.495	3.495	3.495	3.495	3.495	3.495	3.495	3.495	3.495	3.495

Vert. Horizontal Angles

	<u>300</u>	<u>330</u>	<u>360</u>
0	237.924	237.924	237.924
5	213.760	224.700	242.430
10	190.210	208.900	239.040
15	164.480	190.910	233.220
20	138.500	171.520	224.830
25	112.060	150.980	214.780
30	87.680	129.280	202.180
35	67.070	108.350	186.750
40	50.370	88.450	170.180
45	37.700	70.660	151.680
50	28.540	55.100	132.610
55	21.570	41.790	112.700
60	16.260	31.100	93.500
65	12.350	22.270	75.010
70	8.960	15.230	57.470
75	6.460	10.050	41.860
80	4.740	6.530	27.520

IES INDOOR REPORT**PHOTOMETRIC FILENAME : FLX-14.4-10MM-3528-24-IP20-27K ALU-006-DFR_IESNA95.IES****CANDELA TABULATION - (Cont.)**

85	4.100	4.540	15.100
90	3.520	3.710	7.100
95	3.260	3.520	6.980
100	3.330	3.460	3.460
105	3.580	3.460	2.370
110	3.710	3.390	2.300
115	3.840	3.390	2.300
120	3.970	3.460	2.430
125	4.030	3.580	2.620
130	4.100	3.650	2.750
135	4.160	3.710	2.820
140	4.160	3.780	2.940
145	4.160	3.840	3.140
150	4.160	3.840	3.260
155	4.100	3.840	3.390
160	4.030	3.840	3.460
165	3.900	3.780	3.520
170	3.710	3.710	3.520
175	3.580	3.650	3.520
180	3.495	3.495	3.495

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Zone	Lumens	%Lamp	%Fixt
0-20	86.28	9.20	9.20
0-30	182.54	19.40	19.40
0-40	299.80	31.80	31.80
0-60	552.78	58.70	58.70
0-80	763.41	81.00	81.00
0-90	834.60	88.60	88.60
10-90	812.16	86.20	86.20
20-40	213.52	22.70	22.70
20-50	340.47	36.10	36.10
40-70	368.67	39.10	39.10
60-80	210.63	22.40	22.40
70-80	94.94	10.10	10.10
80-90	71.19	7.60	7.60
90-110	80.66	8.60	8.60
90-120	94.38	10.00	10.00
90-130	100.17	10.60	10.60
90-150	104.96	11.10	11.10
90-180	107.74	11.40	11.40
110-180	27.08	2.90	2.90
0-180	942.34	100.00	100.00

Total Luminaire Efficiency = 100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	22.44
10-20	63.84
20-30	96.26
30-40	117.26
40-50	126.94
50-60	126.04
60-70	115.69
70-80	94.94
80-90	71.19
90-100	47.51
100-110	33.15
110-120	13.72
120-130	5.80
130-140	2.83
140-150	1.96
150-160	1.50
160-170	0.96
170-180	0.33

IES INDOOR REPORT

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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	105	105	105	98	98	98	92	92	92	89
1	103	97	92	87	99	94	89	84	87	83	79	81	78	75	76	73	71	68
2	93	83	75	68	89	80	73	67	75	69	63	69	64	60	65	61	57	54
3	84	72	63	56	80	70	61	54	65	58	52	60	55	50	56	51	47	44
4	76	63	54	46	73	61	52	45	57	50	44	53	47	42	50	44	40	37
5	70	56	47	39	67	54	45	39	51	43	37	48	41	36	45	39	34	32
6	64	50	41	34	62	49	40	34	46	38	32	43	36	31	40	35	30	28
7	60	46	36	30	57	44	36	29	42	34	28	39	32	27	37	31	26	24
8	55	41	33	27	53	40	32	26	38	31	25	36	29	24	34	28	24	21
9	52	38	29	24	50	37	29	23	35	28	23	33	27	22	31	25	21	19
10	48	35	27	21	47	34	26	21	32	25	20	30	24	20	29	23	19	17

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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	16.9	18.4	17.4	18.9	19.5	23.3	24.8	23.8	25.3	25.9
	3H	18.7	20.1	19.2	20.6	21.2	26.5	27.9	27.0	28.4	29.0
	4H	19.4	20.7	20.0	21.3	21.9	28.0	29.4	28.6	29.9	30.5
	6H	20.0	21.3	20.6	21.8	22.5	29.7	30.9	30.3	31.5	32.1
	8H	20.3	21.4	20.8	22.0	22.7	30.6	31.8	31.2	32.4	33.0
	12H	20.5	21.6	21.0	22.2	22.9	31.6	32.8	32.2	33.4	34.0

UGR Viewed Endwise

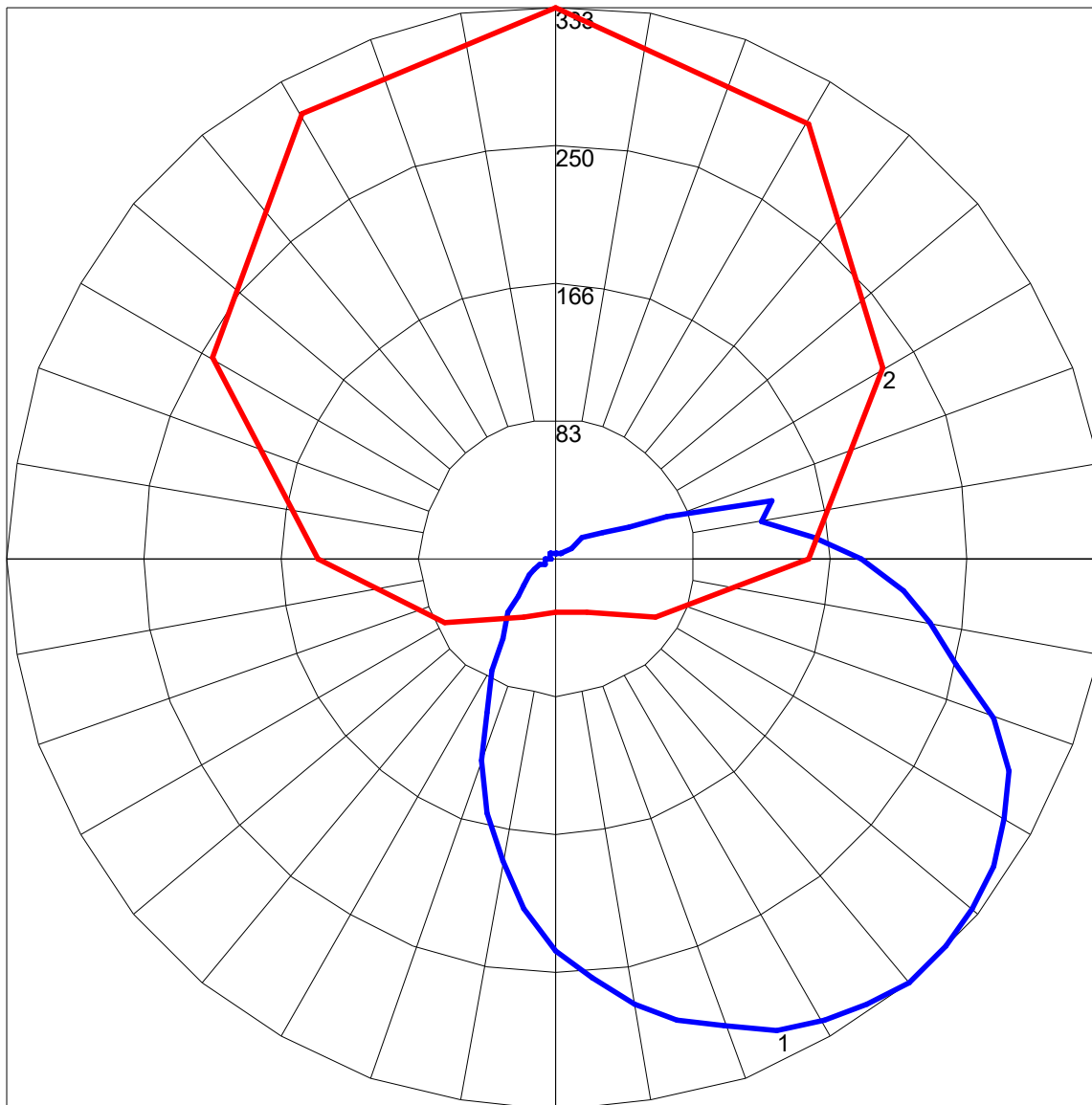
4H	2H	18.6	20.0	19.2	20.5	21.1	23.9	25.2	24.4	25.7	26.3
	3H	20.7	21.9	21.3	22.5	23.1	27.4	28.6	28.0	29.2	29.8
	4H	21.7	22.7	22.3	23.3	24.0	29.2	30.2	29.8	30.8	31.5
	6H	22.5	23.4	23.1	24.0	24.7	31.0	32.0	31.6	32.6	33.3
	8H	22.8	23.6	23.4	24.3	25.0	32.1	32.9	32.7	33.6	34.3
	12H	23.0	23.8	23.7	24.5	25.2	33.2	34.0	33.9	34.7	35.4
8H	4H	23.2	24.1	23.8	24.7	25.4	29.6	30.4	30.2	31.1	31.8
	6H	24.3	25.1	25.0	25.7	26.5	31.7	32.4	32.3	33.1	33.8
	8H	24.8	25.5	25.5	26.2	26.9	32.9	33.6	33.5	34.2	35.0
	12H	25.3	25.9	25.9	26.6	27.3	34.3	35.0	35.0	35.6	36.4
12H	4H	23.7	24.5	24.3	25.1	25.8	29.6	30.4	30.2	31.0	31.8
	6H	25.0	25.7	25.7	26.3	27.1	31.8	32.5	32.4	33.1	33.9
	8H	25.7	26.3	26.4	27.0	27.8	33.1	33.7	33.8	34.4	35.2

Maximum UGR = 36.4

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POLAR GRAPH



Maximum Candela = 332.93 Located At Horizontal Angle = 90, Vertical Angle = 45

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

2 - Horizontal Cone Through Vertical Angle (45) (Through Max. Cd.)