



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4D-4-L15-935-F-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 20195.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 16-AUG-2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4' LINEAR DIRECT SUSPENDED LED LUMINAIRE
 [MORE] WHITE REFL w/FROSTED ACRYLIC LENS
 [MORE] 0-10V LED DRIVER
 [LUMCAT] MX4D-4-00-L15-935-F-DIM-UNV
 [LAMPCAT] HLMX 90 CRI 3500K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4777
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	88
Total Luminaire Watts	54
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.30
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	4.00 ft
Luminous Width (90-270)	0.32 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	13779	13158	12666
55	12697	12105	11354
65	11233	10567	10116
75	8643	8291	8227
85	3993	4943	4563

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CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	1887.308	1887.308	1887.308	1887.308	1887.308
5	1926.129	1884.322	1872.377	1862.423	1852.469
10	1900.249	1855.455	1841.519	1826.588	1815.638
15	1861.427	1811.657	1785.776	1761.886	1754.918
20	1779.803	1730.032	1716.097	1675.285	1668.317
25	1665.330	1626.509	1612.573	1581.716	1574.748
30	1550.858	1516.018	1498.101	1476.201	1465.252
35	1443.353	1402.541	1373.674	1360.733	1348.788
40	1323.903	1292.050	1250.242	1230.334	1214.407
45	1170.609	1148.710	1117.852	1098.939	1076.044
50	1029.260	992.429	986.457	951.617	932.704
55	874.970	853.071	834.158	804.296	782.397
60	732.626	700.773	689.823	662.947	644.034
65	570.373	553.451	536.529	519.607	513.634
70	419.070	404.139	393.189	377.263	384.230
75	268.762	269.758	257.813	257.813	255.822
80	132.390	140.354	136.372	144.335	134.381
85	41.807	49.771	51.762	60.720	47.780
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	682.64	N.A.	14.30
0-30	1424.56	N.A.	29.80
0-40	2290.16	N.A.	47.90
0-60	3899.09	N.A.	81.60
0-80	4711.11	N.A.	98.60
0-90	4777.01	N.A.	100.00
10-90	4598.84	N.A.	96.30
20-40	1607.52	N.A.	33.70
20-50	2473.04	N.A.	51.80
40-70	2142.31	N.A.	44.80
60-80	812.01	N.A.	17.00
70-80	278.63	N.A.	5.80
80-90	65.90	N.A.	1.40
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	4777.01	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	178.17
10-20	504.48
20-30	741.92
30-40	865.60
40-50	865.52
50-60	743.41
60-70	533.38
70-80	278.63
80-90	65.90
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	102	99	95	98	95	92	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	73	71
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	67	63	61
4	84	72	63	57	81	71	63	56	68	61	56	66	60	55	64	58	54	52
5	77	64	56	49	75	63	55	49	61	54	48	59	53	48	57	52	47	45
6	71	58	49	43	69	57	49	43	55	48	43	54	47	42	52	46	42	40
7	66	53	44	38	64	52	44	38	51	43	38	49	42	38	48	42	37	35
8	62	48	40	34	60	48	40	34	46	39	34	45	39	34	44	38	33	32
9	58	44	36	31	56	44	36	31	43	36	31	42	35	30	41	35	30	29
10	54	41	33	28	53	41	33	28	40	33	28	39	32	28	38	32	28	26

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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	20.8	22.4	21.2	22.7	23.0	20.3	21.9	20.7	22.3	22.6
	3H	22.5	23.9	22.8	24.2	24.6	21.9	23.4	22.3	23.7	24.1
	4H	23.0	24.3	23.4	24.7	25.1	22.5	23.9	22.9	24.2	24.6
	6H	23.3	24.6	23.7	24.9	25.3	22.9	24.1	23.3	24.5	24.9
	8H	23.4	24.6	23.8	25.0	25.4	23.0	24.2	23.4	24.5	24.9
	12H	23.4	24.6	23.8	24.9	25.4	23.0	24.2	23.4	24.5	25.0

UGR Viewed Endwise

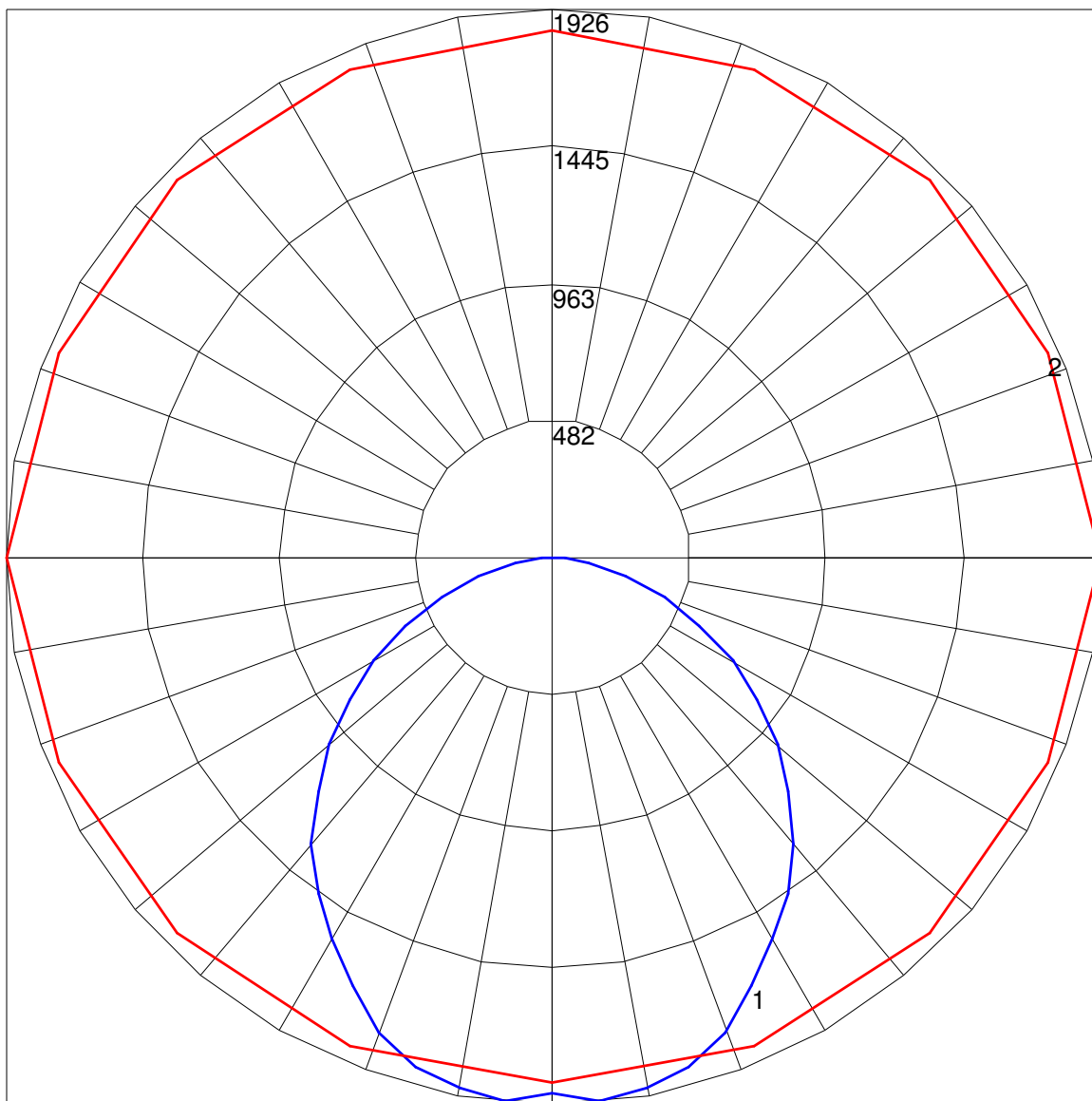
4H	2H	21.3	22.7	21.7	23.0	23.4	21.0	22.3	21.4	22.7	23.0
	3H	23.2	24.3	23.6	24.7	25.1	22.8	23.9	23.2	24.3	24.7
	4H	23.8	24.9	24.3	25.3	25.7	23.4	24.5	23.9	24.9	25.3
	6H	24.3	25.2	24.7	25.6	26.1	23.9	24.8	24.4	25.2	25.7
	8H	24.4	25.2	24.8	25.6	26.1	24.0	24.9	24.5	25.3	25.8
	12H	24.4	25.2	24.9	25.6	26.1	24.1	24.9	24.6	25.3	25.8

8H	4H	24.1	24.9	24.5	25.3	25.8	23.7	24.5	24.2	25.0	25.4
	6H	24.6	25.3	25.1	25.8	26.2	24.3	25.0	24.8	25.4	25.9
	8H	24.7	25.4	25.2	25.9	26.3	24.5	25.1	25.0	25.6	26.1
	12H	24.8	25.4	25.4	25.9	26.4	24.6	25.2	25.1	25.7	26.2

12H	4H	24.1	24.8	24.6	25.3	25.8	23.7	24.5	24.2	24.9	25.4
	6H	24.6	25.2	25.1	25.7	26.2	24.3	24.9	24.8	25.4	25.9
	8H	24.8	25.4	25.3	25.8	26.4	24.6	25.1	25.1	25.6	26.1

Maximum UGR = 26.4

POLAR GRAPH



Maximum Candela = 1926.129 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)