



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-L15-8TW-X-RD-XX-XX-DIM-UNV 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 17323.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 9-AUG-2021

[MANUFAC] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] 2' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS

[LUMCAT] LLM-2-L15-8TW-x-RD-xx-xx-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2952
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	114
Total Luminaire Watts	25.8
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.32
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	2.03 ft
Luminous Width (90-270)	0.21 ft
Luminous Height	0.17 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	13592	11927	12743
55	10979	10025	11093
65	8696	8626	9814
75	6203	7271	8273
85	3744	6695	7628

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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	858.040	858.040	858.040	858.040	858.040
5	863.012	862.302	863.723	865.143	865.854
10	837.442	838.862	845.965	851.648	853.068
15	797.665	803.347	816.133	828.208	833.180
20	760.729	772.094	795.534	817.553	825.367
25	689.700	705.326	738.710	768.543	779.908
30	620.090	642.110	687.569	729.476	745.813
35	561.136	590.968	649.213	701.064	721.663
40	479.451	513.546	586.706	649.213	671.232
45	408.422	451.750	538.406	610.857	637.848
50	338.812	384.982	480.162	558.294	584.576
55	276.306	327.448	427.600	509.284	536.275
60	219.482	272.755	376.458	457.432	483.713
65	169.761	228.006	335.261	416.945	443.226
70	122.882	184.678	290.512	369.355	392.085
75	82.395	144.901	246.474	316.793	335.971
80	51.852	116.489	215.220	282.699	300.456
85	24.860	92.339	186.808	249.315	265.652
90	3.551	68.189	147.742	198.173	212.379
95	0.000	52.562	130.695	181.836	193.201
100	0.000	43.328	110.807	152.004	163.369
105	0.000	35.515	91.628	127.854	139.218
110	0.000	29.122	77.423	110.807	117.910
115	0.000	24.860	66.058	93.049	102.993
120	0.000	23.440	57.534	81.684	89.498
125	0.000	22.019	49.011	69.609	76.712
130	0.000	19.888	41.908	61.086	66.768
135	0.000	17.047	35.515	51.141	54.693
140	0.000	16.337	33.384	46.169	51.141
145	0.000	17.047	31.253	41.908	46.169
150	0.000	14.916	25.571	33.384	36.225
155	0.000	14.916	22.730	29.122	30.543
160	0.000	14.916	19.888	24.860	25.571
165	0.000	7.103	17.757	21.309	22.019
170	0.000	0.000	16.337	17.047	17.757
175	0.000	0.000	0.000	14.916	14.916
180	0.000	0.000	0.000	0.000	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	312.99	N.A.	10.60
0-30	653.61	N.A.	22.10
0-40	1054.33	N.A.	35.70
0-60	1836.89	N.A.	62.20
0-80	2401.14	N.A.	81.30
0-90	2582.46	N.A.	87.50
10-90	2500.73	N.A.	84.70
20-40	741.34	N.A.	25.10
20-50	1149.81	N.A.	38.90
40-70	1100.6	N.A.	37.30
60-80	564.24	N.A.	19.10
70-80	246.21	N.A.	8.30
80-90	181.32	N.A.	6.10
90-110	211.97	N.A.	7.20
90-120	271.28	N.A.	9.20
90-130	311.84	N.A.	10.60
90-150	355.39	N.A.	12.00
90-180	369.74	N.A.	12.50
110-180	157.76	N.A.	5.30
0-180	2952.19	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	81.73
10-20	231.26
20-30	340.62
30-40	400.72
40-50	408.47
50-60	374.09
60-70	318.04
70-80	246.21
80-90	181.32
90-100	125.05
100-110	86.92
110-120	59.31
120-130	40.55
130-140	26.20
140-150	17.35
150-160	9.56
160-170	4.15
170-180	0.64

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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	168	168	168	168	162	162	162	162	151	151	151	141	141	141	131	131	131	127
1	151	143	135	129	145	137	131	125	128	123	118	119	115	111	111	108	104	100
2	136	123	112	103	131	119	109	101	111	102	95	103	96	91	96	91	86	82
3	124	108	95	85	119	104	92	83	97	87	79	90	82	76	84	78	72	68
4	113	95	82	72	108	92	80	70	86	76	67	80	72	64	75	68	62	58
5	104	85	71	62	100	82	70	60	77	66	58	72	63	56	68	60	54	50
6	96	76	63	54	92	74	62	53	69	59	51	65	56	49	61	53	47	44
7	89	69	56	47	85	67	55	46	63	53	45	60	50	43	56	48	42	39
8	83	63	51	42	80	61	50	41	58	47	40	55	45	39	52	44	37	34
9	77	58	46	38	74	56	45	37	53	43	36	50	41	35	48	40	34	31
10	73	53	42	34	70	52	41	34	49	39	33	47	38	32	44	36	31	28

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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	14.9	16.4	15.5	16.9	17.5	19.9	21.4	20.5	21.9	22.5
	3H	16.1	17.4	16.7	18.0	18.6	22.5	23.8	23.0	24.4	25.0
	4H	16.5	17.7	17.1	18.3	19.0	23.7	25.0	24.3	25.5	26.2
	6H	16.7	17.9	17.3	18.5	19.1	25.0	26.2	25.6	26.7	27.4
	8H	16.8	17.9	17.4	18.5	19.1	25.7	26.8	26.2	27.4	28.0
	12H	16.8	17.9	17.4	18.4	19.1	26.4	27.4	27.0	28.0	28.7

UGR Viewed Endwise

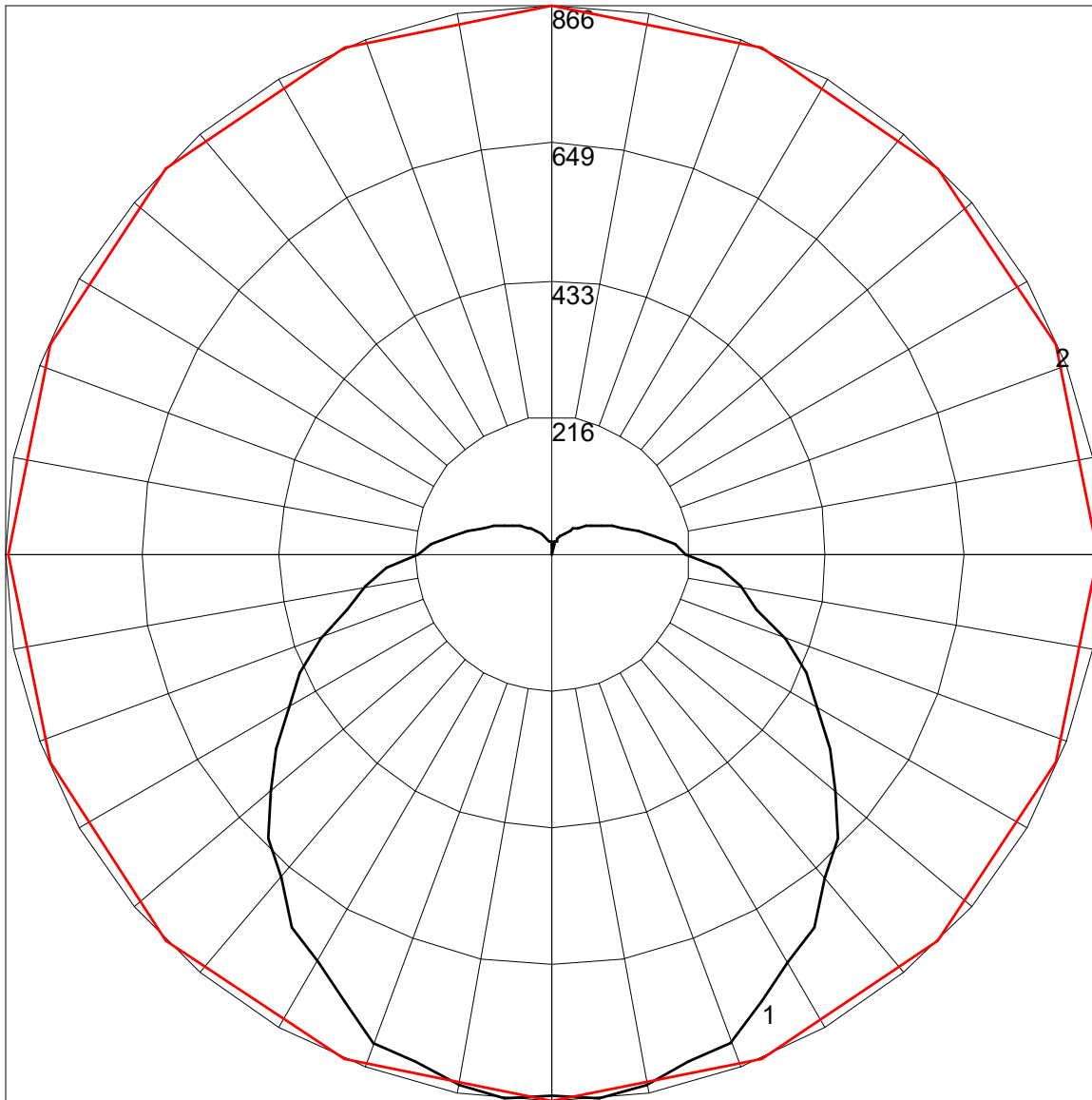
4H	2H	16.4	17.6	17.0	18.2	18.9	20.2	21.4	20.7	22.0	22.6
	3H	17.8	18.9	18.4	19.5	20.2	23.0	24.0	23.6	24.6	25.3
	4H	18.3	19.3	18.9	19.9	20.6	24.3	25.3	24.9	25.9	26.6
	6H	18.6	19.5	19.3	20.1	20.9	25.8	26.7	26.5	27.3	28.1
	8H	18.7	19.6	19.4	20.2	20.9	26.6	27.4	27.2	28.1	28.8
	12H	18.8	19.5	19.4	20.2	20.9	27.5	28.2	28.1	28.9	29.6

8H	4H	19.4	20.2	20.1	20.9	21.6	24.5	25.3	25.1	25.9	26.7
	6H	20.0	20.7	20.6	21.4	22.1	26.1	26.8	26.8	27.5	28.2
	8H	20.2	20.8	20.9	21.5	22.3	27.0	27.7	27.7	28.4	29.1
	12H	20.3	20.9	21.0	21.6	22.4	28.1	28.6	28.7	29.3	30.1

12H	4H	19.8	20.5	20.4	21.2	21.9	24.5	25.2	25.1	25.9	26.6
	6H	20.5	21.1	21.2	21.8	22.6	26.2	26.8	26.8	27.4	28.2
	8H	20.8	21.4	21.5	22.1	22.9	27.1	27.7	27.8	28.4	29.2

Maximum UGR = 30.1

POLAR GRAPH



Maximum Candela = 865.854 Located At Horizontal Angle = 90, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)