



IES INDOOR REPORT
PHOTOMETRIC FILENAME : RND-4-L111-930-FFA-(L46)-DIM1-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST]GEN FROM BALLABS TEST NO. 18646.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUE DATE] 01-04-2024
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 16-32LED 22"ARRAYS 4x4'RECESSED LUMINAIRE w/WHITE REFL
 [MORE] ARRAYS ON WHITE INTERNAL REFLS & 46"DIA WHITE FROST ACRYLIC
 [MORE] FLAT LENS
 [LUMCAT] RND-4-L111-930-FFA-(L46)-DIM1-UNV
 [LAMPCAT] HLM 90 CRI 3000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3645
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	37.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Circular w/ Sides
Luminous Length (0-180)	3.80 ft (Diameter)
Luminous Width (90-270)	3.80 ft (Diameter)
Luminous Height	0.23 ft



LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1046	1044	1046
55	964	964	960
65	858	856	855
75	687	684	687
85	519	519	524

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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	1320.877	1320.877	1320.877	1320.877	1320.877
5	1291.911	1290.266	1290.266	1289.607	1290.266
10	1274.466	1274.466	1274.466	1272.162	1272.162
15	1225.423	1225.423	1226.081	1226.081	1225.423
20	1200.079	1197.116	1196.458	1196.458	1194.154
25	1136.224	1136.224	1134.249	1135.565	1134.249
30	1058.874	1058.215	1056.899	1056.899	1056.899
35	985.802	985.802	985.802	985.802	985.802
40	913.719	913.719	912.731	911.415	913.719
45	840.648	840.648	839.002	837.685	840.648
50	736.307	736.307	736.307	734.991	736.307
55	647.437	645.791	647.437	645.791	645.133
60	539.476	538.159	538.159	539.476	535.855
65	445.668	444.681	444.681	444.681	444.023
70	346.594	346.594	346.594	346.594	346.594
75	241.596	241.596	240.279	241.596	241.596
80	160.625	159.967	159.967	159.967	161.283
85	89.529	89.529	89.529	87.554	90.516
90	38.181	38.181	38.181	36.865	38.181
95	4.937	7.241	7.241	7.241	5.925
100	0.000	0.000	0.000	0.000	0.000
105	0.000	0.000	0.000	0.000	0.000
110	0.000	0.000	0.000	0.000	0.000
115	0.000	0.000	0.000	0.000	0.000
120	0.000	0.000	0.000	0.000	0.000
125	0.000	0.000	0.000	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000
135	0.000	0.000	0.000	0.000	0.000
140	0.000	0.000	0.000	0.000	0.000
145	0.000	0.000	0.000	0.000	0.000
150	0.000	0.000	0.000	0.000	0.000
155	0.000	0.000	0.000	0.000	0.000
160	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.000
170	0.000	0.000	0.000	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000
180	0.000	0.000	0.000	0.000	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	470.85	N.A.	12.90
0-30	992.94	N.A.	27.20
0-40	1610.61	N.A.	44.20
0-60	2827.83	N.A.	77.60
0-80	3528.26	N.A.	96.80
0-90	3630.8	N.A.	99.60
10-90	3507.87	N.A.	96.20
20-40	1139.77	N.A.	31.30
20-50	1782.58	N.A.	48.90
40-70	1656.57	N.A.	45.40
60-80	700.44	N.A.	19.20
70-80	261.08	N.A.	7.20
80-90	102.54	N.A.	2.80
90-110	14.07	N.A.	0.40
90-120	14.07	N.A.	0.40
90-130	14.07	N.A.	0.40
90-150	14.07	N.A.	0.40
90-180	14.07	N.A.	0.40
110-180	0.00	N.A.	0.00
0-180	3644.87	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	122.94
10-20	347.91
20-30	522.09
30-40	617.67
40-50	642.82
50-60	574.40
60-70	439.36
70-80	261.08
80-90	102.54
90-100	14.07
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	108	103	99	95	105	101	97	93	97	93	90	93	90	87	89	87	85	83
2	98	90	83	77	96	88	82	76	84	79	74	81	76	72	78	74	71	69
3	90	79	71	64	87	77	70	63	74	68	62	71	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	61	56	51	49
5	75	62	53	47	73	61	53	46	59	52	46	57	50	45	55	49	45	43
6	70	56	47	41	68	55	47	41	53	46	40	52	45	40	50	44	39	37
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33
8	60	47	38	32	59	46	38	32	44	37	32	43	36	32	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

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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	11.0	12.7	11.4	13.0	13.3	UGR Viewed Endwise	11.0	12.7	11.4	13.0	13.3
	3H	12.8	14.3	13.2	14.6	15.0		12.8	14.3	13.2	14.6	15.0
	4H	13.5	14.9	13.9	15.2	15.6		13.5	14.9	13.9	15.2	15.6
	6H	14.0	15.3	14.4	15.6	16.0		14.0	15.3	14.4	15.6	16.0
	8H	14.1	15.4	14.6	15.8	16.2		14.1	15.4	14.6	15.8	16.2
	12H	14.3	15.5	14.7	15.9	16.3		14.3	15.5	14.7	15.9	16.3

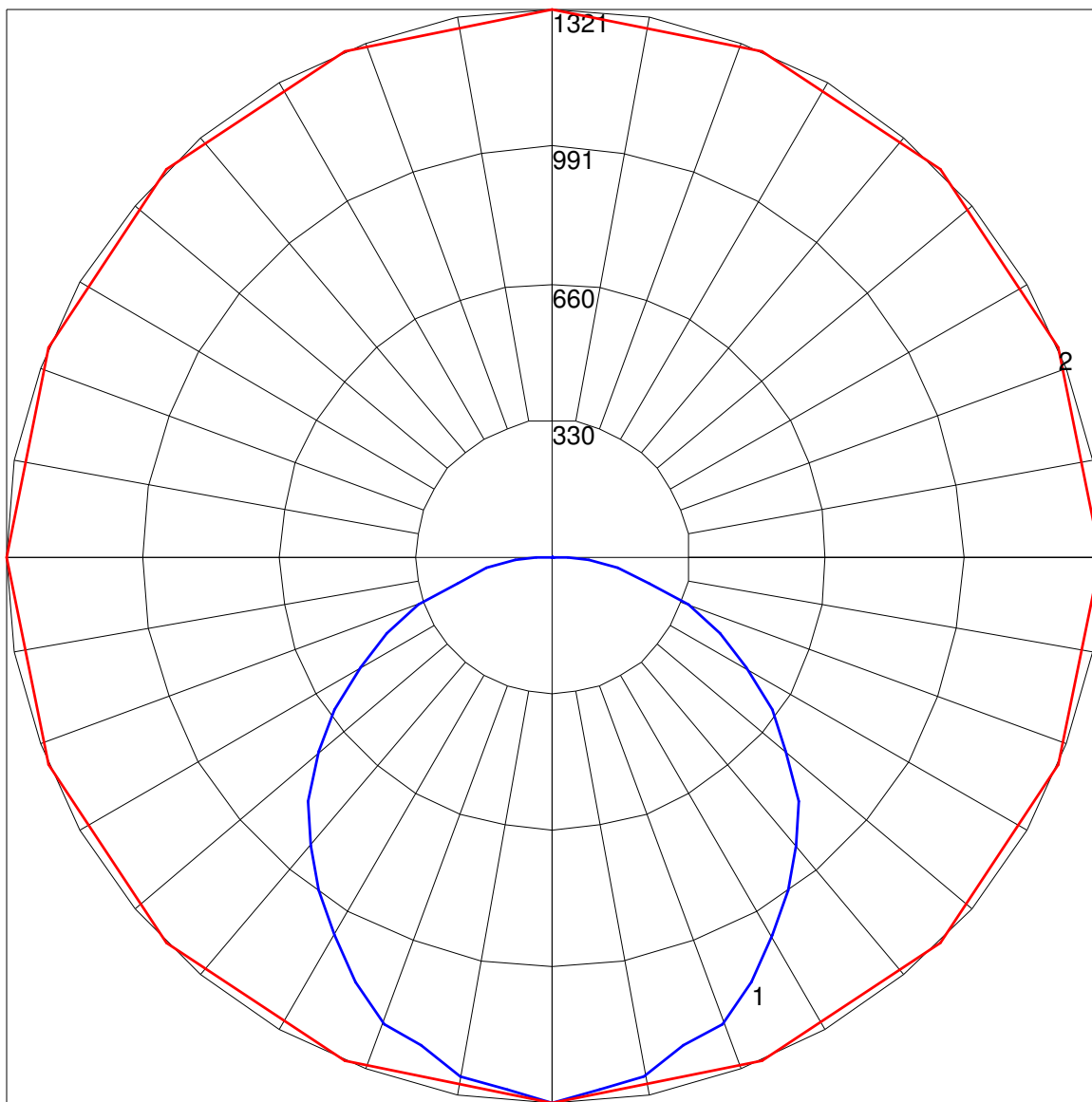
4H	2H	11.6	13.0	12.0	13.4	13.8	11.6	13.0	12.0	13.4	13.8
	3H	13.6	14.8	14.0	15.2	15.6	13.6	14.8	14.0	15.2	15.6
	4H	14.4	15.5	14.8	15.9	16.3	14.4	15.5	14.8	15.9	16.3
	6H	15.0	16.0	15.5	16.4	16.9	15.0	16.0	15.5	16.4	16.9
	8H	15.3	16.2	15.7	16.6	17.1	15.3	16.2	15.7	16.6	17.1
	12H	15.5	16.3	15.9	16.7	17.2	15.5	16.3	15.9	16.7	17.2

8H	4H	14.7	15.6	15.1	16.0	16.5	14.7	15.6	15.1	16.0	16.5
	6H	15.4	16.2	15.9	16.7	17.1	15.4	16.2	15.9	16.7	17.1
	8H	15.8	16.4	16.3	16.9	17.4	15.8	16.4	16.3	16.9	17.4
	12H	16.0	16.6	16.5	17.1	17.7	16.0	16.6	16.5	17.1	17.7

12H	4H	14.7	15.5	15.2	16.0	16.5	14.7	15.5	15.2	16.0	16.5
	6H	15.5	16.2	16.0	16.6	17.2	15.5	16.2	16.0	16.6	17.2
	8H	15.9	16.5	16.4	17.0	17.5	15.9	16.5	16.4	17.0	17.5

Maximum UGR = 17.7

POLAR GRAPH



Maximum Candela = 1320.877 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)