



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 97-4-L95-840-FR-DRV-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 19304.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 12-NOV-2019

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 4 LED 22" ARRAYS 4' SUSPENDED ENCLOSED/GASKETED

[MORE] LUMINAIRE WHITE FLAT REFL w/HIGHLY SPEC CENTER REFL & FROSTED

[MORE] ACRYLIC DROP LENS

[LUMCAT] 97-4-L95-840-FR-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9590
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	148
Total Luminaire Watts	64.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.32
Spacing Criterion (90-270)	1.86
Spacing Criterion (Diagonal)	1.90
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	4.25 ft
Luminous Width (90-270)	0.46 ft
Luminous Height	0.27 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7988	8696	10064
55	7448	10738	13292
65	6503	13574	16006
75	5301	12982	12132
85	3992	7204	5630

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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	1545.246	1545.246	1545.246	1545.246	1545.246
5	1570.445	1593.629	1598.669	1526.094	1457.551
10	1556.333	1581.533	1606.733	1543.230	1477.710
15	1528.110	1560.365	1608.749	1564.397	1500.894
20	1481.742	1531.134	1609.757	1580.525	1522.062
25	1427.311	1498.878	1607.741	1599.677	1553.309
30	1358.768	1458.559	1599.677	1628.909	1598.669
35	1285.185	1405.135	1594.637	1682.332	1680.316
40	1190.434	1329.536	1595.645	1770.027	1826.474
45	1087.619	1248.897	1628.909	1938.361	2050.248
50	969.684	1164.226	1716.604	2174.230	2294.181
55	843.686	1085.603	1852.682	2425.219	2546.178
60	702.568	1015.044	1987.752	2647.984	2768.943
65	565.481	962.629	2070.407	2685.280	2778.015
70	432.427	905.173	1987.752	2440.339	2458.483
75	307.436	806.390	1660.156	1904.089	1823.450
80	193.534	649.144	1144.066	1209.586	1168.258
85	108.863	464.682	715.671	723.735	689.464
90	69.551	320.540	459.643	453.595	411.259
95	51.407	214.701	314.492	299.372	281.229
100	43.343	146.158	229.821	216.717	208.654
105	36.288	101.807	185.470	179.422	172.366
110	27.216	66.527	149.182	157.246	150.190
115	22.176	45.359	116.927	138.094	134.062
120	15.120	30.240	88.703	118.943	115.919
125	11.088	18.144	64.511	95.759	94.751
130	9.072	11.088	44.351	69.551	72.575
135	0.000	0.000	30.240	51.407	54.431
140	0.000	0.000	19.152	37.296	39.312
145	0.000	0.000	12.096	26.208	28.224
150	0.000	0.000	0.000	17.136	19.152
155	0.000	0.000	0.000	9.072	10.080
160	0.000	0.000	0.000	0.000	9.072
165	0.000	5.040	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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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	590.99	N.A.	6.20
0-30	1307.77	N.A.	13.60
0-40	2277.61	N.A.	23.70
0-60	5102.6	N.A.	53.20
0-80	8305.8	N.A.	86.60
0-90	8971.07	N.A.	93.50
10-90	8822.35	N.A.	92.00
20-40	1686.62	N.A.	17.60
20-50	2929.7	N.A.	30.50
40-70	4619.95	N.A.	48.20
60-80	3203.2	N.A.	33.40
70-80	1408.24	N.A.	14.70
80-90	665.27	N.A.	6.90
90-110	439.17	N.A.	4.60
90-120	533.80	N.A.	5.60
90-130	586.29	N.A.	6.10
90-150	617.00	N.A.	6.40
90-180	619.05	N.A.	6.50
110-180	179.88	N.A.	1.90
0-180	9590.12	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	148.72
10-20	442.27
20-30	716.78
30-40	969.84
40-50	1243.08
50-60	1581.91
60-70	1794.96
70-80	1408.24
80-90	665.27
90-100	285.42
100-110	153.76
110-120	94.63
120-130	52.49
130-140	22.44
140-150	8.27
150-160	1.78
160-170	0.27
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	118	118	118	118	115	115	115	115	108	108	108	102	102	102	97	97	97	94
1	104	97	91	86	100	94	89	84	88	84	80	83	80	76	78	75	73	70
2	92	81	72	65	88	78	70	63	74	67	61	69	63	58	65	60	56	53
3	82	69	59	51	79	67	57	50	62	54	48	59	52	46	55	49	44	42
4	74	59	49	41	71	58	48	40	54	45	39	51	43	37	48	41	36	33
5	67	52	41	34	64	50	41	33	47	39	32	45	37	31	42	35	30	27
6	61	46	36	28	59	45	35	28	42	34	27	40	32	26	37	31	26	23
7	57	41	31	24	54	40	31	24	38	29	23	36	28	23	34	27	22	20
8	52	37	28	21	50	36	27	21	34	26	20	32	25	20	31	24	19	17
9	49	34	25	19	47	33	24	18	31	24	18	30	23	18	28	22	17	15
10	46	31	22	17	44	30	22	17	29	21	16	27	21	16	26	20	15	13

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**UGR TABLE - CORRECTED**

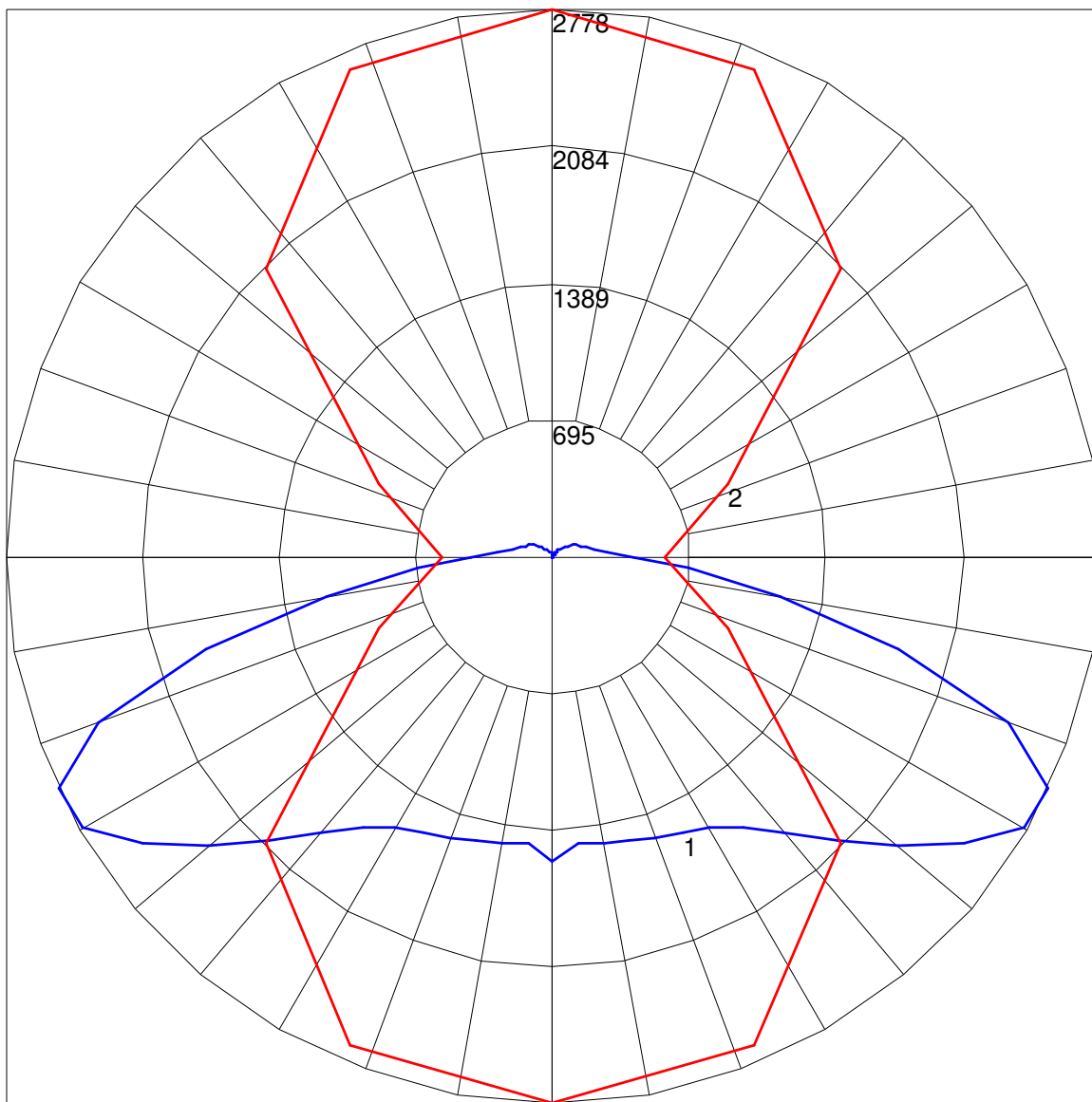
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	17.0	18.7	17.4	19.2	19.6	23.6	25.3	24.0	25.7	26.2
	3H	19.1	20.7	19.5	21.1	21.6	27.0	28.6	27.4	29.0	29.5
	4H	19.8	21.4	20.3	21.8	22.4	28.1	29.7	28.6	30.1	30.6
	6H	20.4	21.9	20.9	22.3	22.9	28.9	30.4	29.4	30.8	31.4
	8H	20.6	22.0	21.1	22.5	23.0	29.2	30.6	29.7	31.1	31.6
	12H	20.7	22.1	21.2	22.6	23.1	29.5	30.8	30.0	31.3	31.9
4H	2H	19.8	21.4	20.3	21.8	22.3	24.0	25.5	24.5	26.0	26.5
	3H	21.9	23.3	22.4	23.8	24.3	27.6	29.0	28.1	29.5	30.0
	4H	22.7	24.0	23.3	24.5	25.0	29.0	30.2	29.5	30.7	31.3
	6H	23.4	24.4	23.9	25.0	25.6	29.9	31.0	30.4	31.5	32.1
	8H	23.6	24.6	24.1	25.1	25.7	30.2	31.3	30.8	31.8	32.4
	12H	23.7	24.7	24.3	25.2	25.8	30.6	31.5	31.1	32.1	32.7
8H	4H	24.1	25.1	24.6	25.7	26.2	29.1	30.2	29.7	30.7	31.3
	6H	24.9	25.8	25.5	26.4	27.0	30.2	31.1	30.8	31.7	32.3
	8H	25.2	26.0	25.8	26.6	27.2	30.7	31.5	31.2	32.0	32.7
	12H	25.5	26.2	26.1	26.8	27.5	31.1	31.8	31.6	32.4	33.0
12H	4H	24.3	25.2	24.8	25.8	26.4	29.2	30.1	29.7	30.7	31.3
	6H	25.2	26.0	25.8	26.6	27.2	30.3	31.1	30.9	31.6	32.3
	8H	25.6	26.3	26.2	26.9	27.6	30.7	31.4	31.3	32.0	32.7

Maximum UGR = 33.0

POLAR GRAPH



Maximum Candela = 2778.015 Located At Horizontal Angle = 90, Vertical Angle = 65  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (65) (Through Max. Cd.)