



IES INDOOR REPORT
PHOTOMETRIC FILENAME : NW-4-L93-850-RA-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 20990.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 2023-08-09
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 48 INCH LINEAR LED SURFACE LUMINAIRE
 [MORE] WHITE REFLECTOR w/RADIAL RIBBED FROST ACRYLIC LENS
 [MORE] 0-10V DIMMING DRIVER
 [LUMCAT] NW-4-L93-850-RA-DIM-UNV
 [LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9795
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	140
Total Luminaire Watts	70.1
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.36
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.98 ft
Luminous Width (90-270)	0.38 ft
Luminous Height	0.15 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	17139	15708	16119
55	14615	13613	14332
65	11756	11276	12409
75	9119	9560	10722
85	4279	8619	9982

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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	3163.150	3163.150	3163.150	3163.150	3163.150
5	3189.671	3147.849	3139.689	3139.689	3130.509
10	3131.529	3095.827	3097.867	3106.028	3095.827
15	3026.464	2998.923	3021.364	3045.845	3042.785
20	2890.799	2879.578	2916.300	2961.182	2963.222
25	2703.111	2715.352	2781.654	2840.817	2856.117
30	2505.223	2526.644	2621.508	2698.011	2727.592
35	2258.373	2308.355	2433.820	2533.784	2568.466
40	2022.743	2076.805	2227.772	2367.517	2400.159
45	1743.252	1821.795	2005.402	2156.369	2197.170
50	1482.121	1579.025	1779.973	1946.240	1991.122
55	1224.050	1318.914	1549.444	1721.831	1774.873
60	979.240	1086.345	1322.994	1482.121	1542.303
65	743.611	856.835	1088.385	1291.373	1335.235
70	548.783	648.747	891.517	1088.385	1140.407
75	372.315	483.500	729.330	905.797	944.559
80	207.069	342.734	583.464	743.611	798.693
85	73.443	231.550	463.099	612.025	657.927
90	0.000	153.006	361.095	506.961	536.542
95	0.000	97.924	284.592	415.157	460.039
100	0.000	65.283	218.289	343.754	379.456
105	0.000	43.862	172.387	277.451	317.233
110	0.000	20.401	136.686	227.469	265.211
115	0.000	13.261	109.144	191.768	218.289
120	0.000	0.000	86.704	157.086	184.628
125	0.000	0.000	67.323	125.465	146.886
130	0.000	0.000	53.042	98.944	117.305
135	0.000	0.000	42.842	76.503	93.844
140	0.000	0.000	22.441	58.142	71.403
145	0.000	0.000	8.160	44.882	52.022
150	0.000	0.000	0.000	38.762	43.862
155	0.000	0.000	0.000	36.722	38.762
160	0.000	0.000	0.000	21.421	35.701
165	0.000	0.000	0.000	7.140	12.241
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	1152.61	N.A.	11.80
0-30	2433.22	N.A.	24.80
0-40	3949.79	N.A.	40.30
0-60	6850.14	N.A.	69.90
0-80	8653.22	N.A.	88.30
0-90	9117.16	N.A.	93.10
10-90	8818.13	N.A.	90.00
20-40	2797.17	N.A.	28.60
20-50	4334.09	N.A.	44.20
40-70	3963.9	N.A.	40.50
60-80	1803.08	N.A.	18.40
70-80	739.54	N.A.	7.60
80-90	463.93	N.A.	4.70
90-110	458.63	N.A.	4.70
90-120	564.32	N.A.	5.80
90-130	625.05	N.A.	6.40
90-150	670.46	N.A.	6.80
90-180	677.93	N.A.	6.90
110-180	219.30	N.A.	2.20
0-180	9795.09	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	299.02
10-20	853.59
20-30	1280.61
30-40	1516.57
40-50	1536.91
50-60	1363.44
60-70	1063.55
70-80	739.54
80-90	463.93
90-100	283.92
100-110	174.71
110-120	105.69
120-130	60.73
130-140	32.12
140-150	13.29
150-160	6.20
160-170	1.28
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	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	93
1	106	101	96	92	102	98	93	90	92	89	85	87	84	82	82	80	78	75
2	96	87	80	74	93	85	78	73	80	75	70	76	71	67	72	68	65	62
3	88	77	68	61	84	74	67	60	70	64	58	67	61	57	63	59	55	52
4	80	68	59	52	77	66	58	51	63	55	50	59	53	48	57	51	47	45
5	74	61	51	45	71	59	51	44	56	49	43	53	47	42	51	45	41	39
6	68	55	46	39	66	53	45	39	51	43	38	48	42	37	46	40	36	34
7	63	49	41	34	61	48	40	34	46	39	33	44	38	33	42	36	32	30
8	59	45	37	31	57	44	36	30	42	35	30	40	34	29	39	33	29	27
9	55	41	33	28	53	41	33	27	39	32	27	37	31	26	36	30	26	24
10	51	38	30	25	50	37	30	25	36	29	24	35	28	24	33	28	24	22

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UGR TABLE - CORRECTED

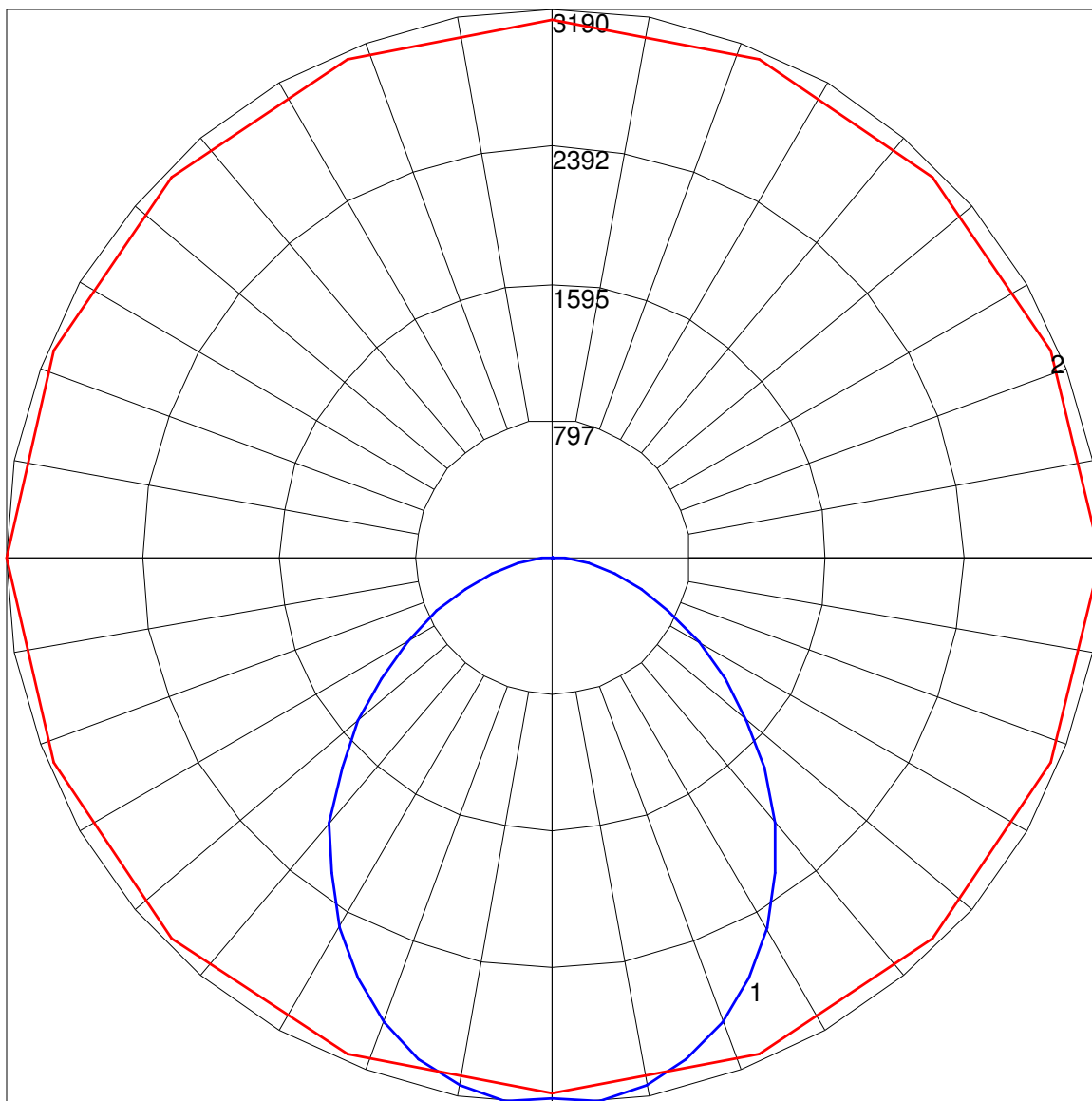
Reflectances

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	18.8	20.3	19.2	20.7	21.2	21.8	23.3	22.3	23.7	24.2
	3H	20.0	21.3	20.5	21.8	22.3	24.0	25.4	24.5	25.9	26.4
	4H	20.4	21.7	20.9	22.1	22.7	25.1	26.4	25.6	26.9	27.4
	6H	20.6	21.8	21.1	22.3	22.8	26.2	27.4	26.7	27.9	28.4
	8H	20.6	21.8	21.2	22.3	22.9	26.8	27.9	27.3	28.4	29.0
	12H	20.6	21.7	21.2	22.3	22.9	27.4	28.5	27.9	29.0	29.6
4H	2H	19.7	21.0	20.2	21.5	22.0	22.1	23.4	22.6	23.9	24.4
	3H	21.2	22.3	21.7	22.8	23.4	24.6	25.7	25.1	26.2	26.8
	4H	21.7	22.7	22.2	23.2	23.8	25.8	26.8	26.3	27.4	28.0
	6H	22.0	22.9	22.5	23.4	24.1	27.1	28.0	27.7	28.6	29.2
	8H	22.1	22.9	22.6	23.5	24.1	27.8	28.6	28.3	29.2	29.8
	12H	22.1	22.9	22.7	23.5	24.1	28.5	29.3	29.1	29.9	30.5
8H	4H	22.4	23.2	23.0	23.8	24.4	26.0	26.8	26.5	27.4	28.0
	6H	22.9	23.6	23.5	24.2	24.9	27.4	28.1	28.0	28.7	29.4
	8H	23.1	23.7	23.7	24.3	25.0	28.2	28.9	28.8	29.5	30.1
	12H	23.2	23.8	23.8	24.4	25.1	29.2	29.7	29.8	30.3	31.0
12H	4H	22.6	23.4	23.2	24.0	24.6	26.0	26.7	26.6	27.3	28.0
	6H	23.2	23.9	23.9	24.5	25.1	27.5	28.1	28.1	28.7	29.4
	8H	23.5	24.1	24.1	24.7	25.4	28.3	28.9	28.9	29.5	30.2

Maximum UGR = 31.0

POLAR GRAPH



Maximum Candela = 3189.671 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.)