



IES INDOOR REPORT
PHOTOMETRIC FILENAME : NW-4-L54-850-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-L54-850-RA-DIM-UNV
 [LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5856
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	151
Total Luminaire Watts	38.8
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	10247	9391	9637
55	8738	8139	8569
65	7029	6742	7419
75	5452	5716	6411
85	2558	5153	5968

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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	1891.180	1891.180	1891.180	1891.180	1891.180
5	1907.037	1882.033	1877.154	1877.154	1871.665
10	1872.275	1850.930	1852.149	1857.028	1850.930
15	1809.459	1792.993	1806.410	1821.046	1819.217
20	1728.347	1721.639	1743.594	1770.428	1771.648
25	1616.133	1623.451	1663.092	1698.464	1707.612
30	1497.820	1510.627	1567.344	1613.084	1630.770
35	1350.233	1380.117	1455.130	1514.896	1535.631
40	1209.355	1241.678	1331.938	1415.489	1435.004
45	1042.253	1089.213	1198.988	1289.247	1313.642
50	886.129	944.066	1064.208	1163.616	1190.450
55	731.834	788.551	926.380	1029.446	1061.159
60	585.467	649.502	790.990	886.129	922.111
65	444.589	512.284	650.722	772.085	798.309
70	328.105	387.872	533.019	650.722	681.825
75	222.599	289.074	436.051	541.557	564.732
80	123.802	204.913	348.841	444.589	477.522
85	43.910	138.439	276.877	365.917	393.361
90	0.000	91.479	215.891	303.101	320.787
95	0.000	58.547	170.151	248.214	275.048
100	0.000	39.031	130.510	205.523	226.868
105	0.000	26.224	103.067	165.882	189.667
110	0.000	12.197	81.721	135.999	158.564
115	0.000	7.928	65.255	114.654	130.510
120	0.000	0.000	51.838	93.919	110.385
125	0.000	0.000	40.251	75.013	87.820
130	0.000	0.000	31.713	59.157	70.134
135	0.000	0.000	25.614	45.740	56.107
140	0.000	0.000	13.417	34.762	42.690
145	0.000	0.000	4.879	26.834	31.103
150	0.000	0.000	0.000	23.175	26.224
155	0.000	0.000	0.000	21.955	23.175
160	0.000	0.000	0.000	12.807	21.345
165	0.000	0.000	0.000	4.269	7.318
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	689.12	N.A.	11.80
0-30	1454.77	N.A.	24.80
0-40	2361.49	N.A.	40.30
0-60	4095.55	N.A.	69.90
0-80	5173.58	N.A.	88.30
0-90	5450.95	N.A.	93.10
10-90	5272.18	N.A.	90.00
20-40	1672.37	N.A.	28.60
20-50	2591.26	N.A.	44.20
40-70	2369.93	N.A.	40.50
60-80	1078.03	N.A.	18.40
70-80	442.15	N.A.	7.60
80-90	277.37	N.A.	4.70
90-110	274.21	N.A.	4.70
90-120	337.39	N.A.	5.80
90-130	373.70	N.A.	6.40
90-150	400.85	N.A.	6.80
90-180	405.32	N.A.	6.90
110-180	131.12	N.A.	2.20
0-180	5856.28	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	178.78
10-20	510.34
20-30	765.65
30-40	906.72
40-50	918.89
50-60	815.17
60-70	635.87
70-80	442.15
80-90	277.37
90-100	169.75
100-110	104.46
110-120	63.19
120-130	36.31
130-140	19.20
140-150	7.95
150-160	3.70
160-170	0.76
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

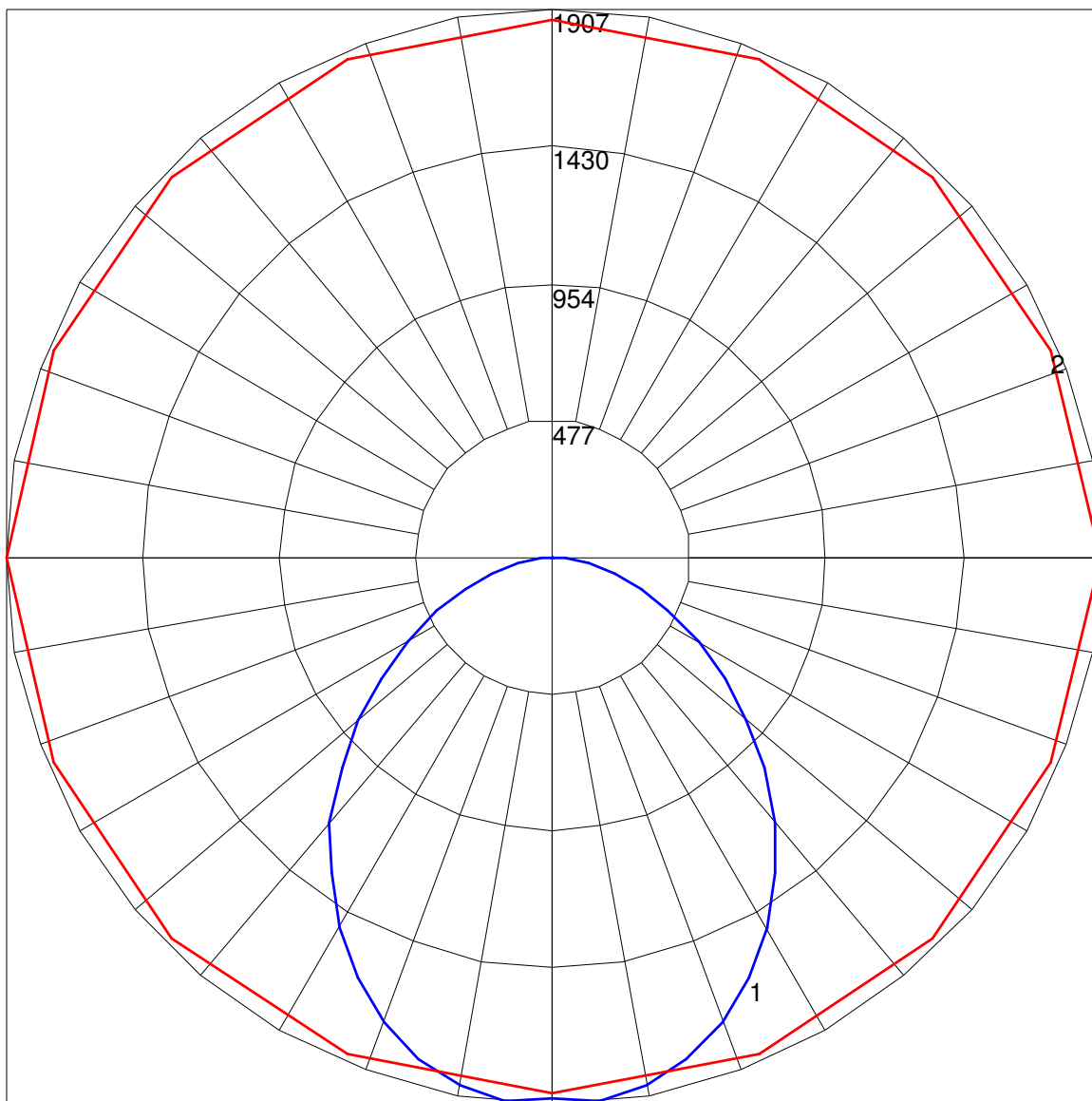
Reflectances

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	17.0	18.5	17.4	18.9	19.4	20.0	21.5	20.5	21.9	22.4
	3H	18.2	19.5	18.7	20.0	20.5	22.2	23.6	22.7	24.1	24.6
	4H	18.6	19.9	19.1	20.3	20.9	23.3	24.6	23.8	25.1	25.6
	6H	18.8	20.0	19.3	20.5	21.0	24.4	25.6	24.9	26.1	26.6
	8H	18.8	20.0	19.4	20.5	21.1	24.9	26.1	25.5	26.6	27.2
	12H	18.8	19.9	19.4	20.5	21.1	25.6	26.7	26.1	27.2	27.8
4H	2H	17.9	19.2	18.4	19.7	20.2	20.3	21.6	20.8	22.1	22.6
	3H	19.4	20.5	19.9	21.0	21.6	22.8	23.9	23.3	24.4	25.0
	4H	19.9	20.9	20.4	21.4	22.0	24.0	25.0	24.5	25.6	26.2
	6H	20.2	21.1	20.7	21.6	22.3	25.3	26.2	25.9	26.8	27.4
	8H	20.3	21.1	20.8	21.7	22.3	26.0	26.8	26.5	27.4	28.0
	12H	20.3	21.1	20.9	21.7	22.3	26.7	27.5	27.3	28.1	28.7
8H	4H	20.6	21.4	21.2	22.0	22.6	24.2	25.0	24.7	25.6	26.2
	6H	21.1	21.8	21.7	22.4	23.1	25.6	26.3	26.2	26.9	27.6
	8H	21.3	21.9	21.9	22.5	23.2	26.4	27.1	27.0	27.7	28.3
	12H	21.4	22.0	22.0	22.6	23.3	27.4	27.9	28.0	28.5	29.2
12H	4H	20.8	21.6	21.4	22.2	22.8	24.2	24.9	24.8	25.5	26.2
	6H	21.4	22.1	22.1	22.7	23.3	25.7	26.3	26.3	26.9	27.6
	8H	21.7	22.3	22.3	22.9	23.6	26.5	27.1	27.1	27.7	28.4

Maximum UGR = 29.2

POLAR GRAPH



Maximum Candela = 1907.037 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.)