



IES INDOOR REPORT

PHOTOMETRIC FILENAME : NW-4-L74-940-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-L74-940-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6370
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	115
Total Luminaire Watts	55.6
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	11145	10215	10482
55	9504	8852	9320
65	7645	7333	8070
75	5930	6217	6973
85	2782	5605	6492

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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	2057.007	2057.007	2057.007	2057.007	2057.007
5	2074.253	2047.056	2041.750	2041.750	2035.780
10	2036.443	2013.226	2014.553	2019.860	2013.226
15	1968.119	1950.209	1964.803	1980.723	1978.733
20	1879.896	1872.599	1896.479	1925.666	1926.993
25	1757.842	1765.802	1808.919	1847.392	1857.342
30	1629.154	1643.085	1704.775	1754.525	1773.762
35	1468.627	1501.131	1582.721	1647.728	1670.281
40	1315.396	1350.553	1448.727	1539.604	1560.831
45	1133.642	1184.719	1304.120	1402.293	1428.827
50	963.828	1026.845	1157.522	1265.646	1294.833
55	796.004	857.694	1007.608	1119.712	1154.206
60	636.803	706.453	860.347	963.828	1002.965
65	483.572	557.203	707.780	839.784	868.307
70	356.875	421.882	579.756	707.780	741.610
75	242.118	314.422	474.286	589.043	614.250
80	134.657	222.881	379.428	483.572	519.392
85	47.760	150.577	301.155	398.002	427.852
90	0.000	99.500	234.821	329.678	348.915
95	0.000	63.680	185.071	269.978	299.165
100	0.000	42.454	141.954	223.544	246.761
105	0.000	28.523	112.104	180.428	206.298
110	0.000	13.267	88.887	147.924	172.467
115	0.000	8.623	70.977	124.707	141.954
120	0.000	0.000	56.384	102.154	120.064
125	0.000	0.000	43.780	81.590	95.520
130	0.000	0.000	34.493	64.344	76.284
135	0.000	0.000	27.860	49.750	61.027
140	0.000	0.000	14.593	37.810	46.434
145	0.000	0.000	5.307	29.187	33.830
150	0.000	0.000	0.000	25.207	28.523
155	0.000	0.000	0.000	23.880	25.207
160	0.000	0.000	0.000	13.930	23.217
165	0.000	0.000	0.000	4.643	7.960
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	749.55	N.A.	11.80
0-30	1582.33	N.A.	24.80
0-40	2568.56	N.A.	40.30
0-60	4454.67	N.A.	69.90
0-80	5627.22	N.A.	88.30
0-90	5928.91	N.A.	93.10
10-90	5734.46	N.A.	90.00
20-40	1819.01	N.A.	28.60
20-50	2818.47	N.A.	44.20
40-70	2577.74	N.A.	40.50
60-80	1172.55	N.A.	18.40
70-80	480.92	N.A.	7.60
80-90	301.70	N.A.	4.70
90-110	298.25	N.A.	4.70
90-120	366.98	N.A.	5.80
90-130	406.47	N.A.	6.40
90-150	436.00	N.A.	6.80
90-180	440.86	N.A.	6.90
110-180	142.61	N.A.	2.20
0-180	6369.78	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	194.46
10-20	555.09
20-30	832.78
30-40	986.23
40-50	999.46
50-60	886.65
60-70	691.63
70-80	480.92
80-90	301.70
90-100	184.63
100-110	113.62
110-120	68.73
120-130	39.49
130-140	20.89
140-150	8.64
150-160	4.03
160-170	0.83
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

X=2H	Y=2H	17.3	18.8	17.7	19.2	19.7	20.3	21.8	20.8	22.2	22.7
	3H	18.5	19.8	19.0	20.3	20.8	22.5	23.9	23.0	24.4	24.9
	4H	18.9	20.2	19.4	20.6	21.2	23.6	24.9	24.1	25.4	25.9
	6H	19.1	20.3	19.6	20.8	21.3	24.7	25.9	25.2	26.4	26.9
	8H	19.1	20.3	19.7	20.8	21.4	25.3	26.4	25.8	26.9	27.5
	12H	19.1	20.2	19.7	20.8	21.4	25.9	27.0	26.4	27.5	28.1

UGR Viewed Endwise

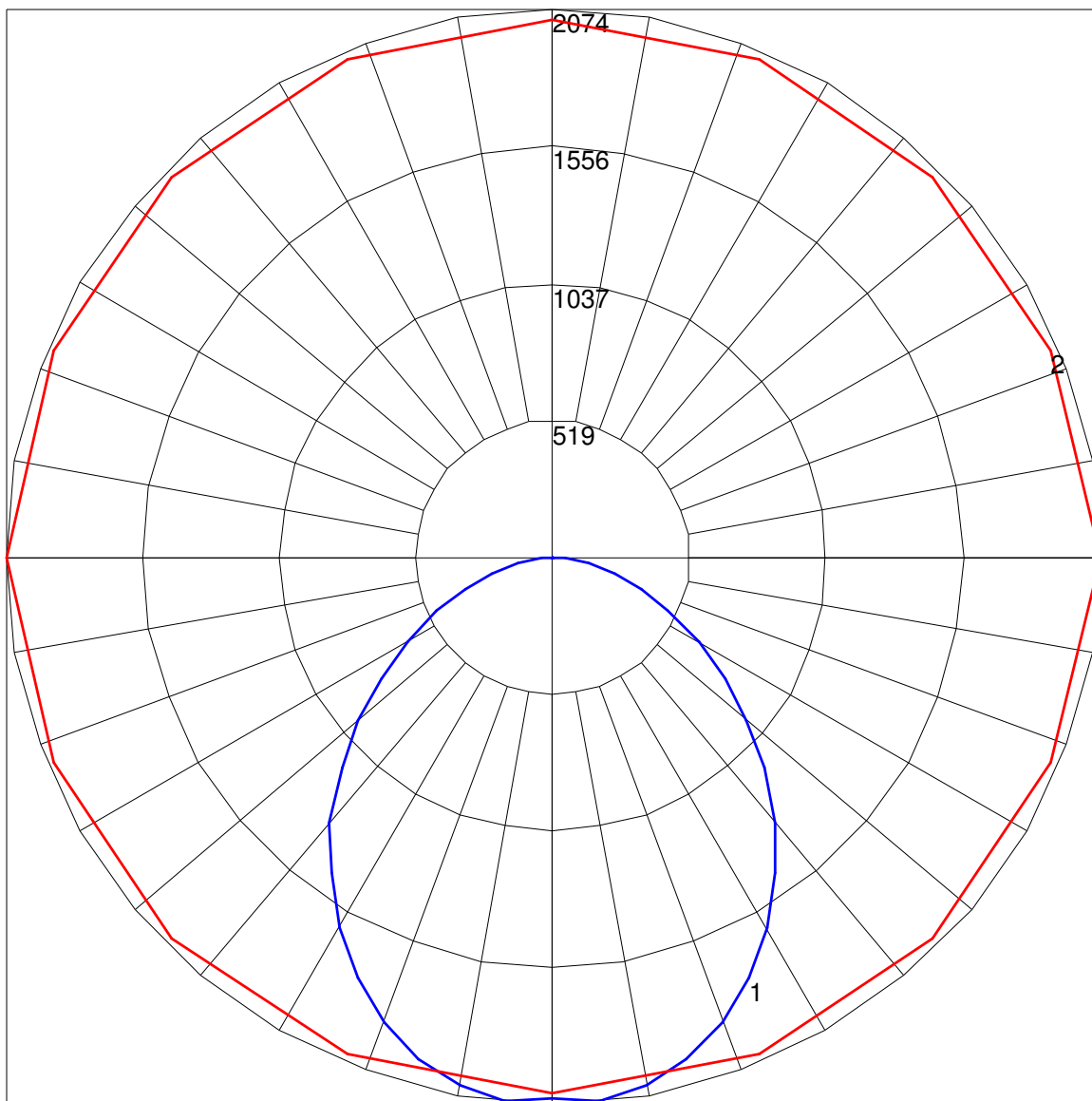
4H	2H	18.2	19.5	18.7	20.0	20.5	20.6	21.9	21.1	22.4	22.9
	3H	19.7	20.8	20.2	21.3	21.9	23.1	24.2	23.6	24.7	25.3
	4H	20.2	21.2	20.7	21.7	22.3	24.3	25.3	24.8	25.9	26.5
	6H	20.5	21.4	21.0	21.9	22.6	25.6	26.5	26.2	27.1	27.7
	8H	20.6	21.4	21.1	22.0	22.6	26.3	27.1	26.8	27.7	28.3
	12H	20.6	21.4	21.2	22.0	22.6	27.0	27.8	27.6	28.4	29.0

8H	4H	20.9	21.7	21.5	22.3	22.9	24.5	25.3	25.0	25.9	26.5
	6H	21.4	22.1	22.0	22.7	23.4	25.9	26.6	26.5	27.2	27.9
	8H	21.6	22.2	22.2	22.8	23.5	26.7	27.4	27.3	28.0	28.6
	12H	21.7	22.3	22.3	22.9	23.6	27.7	28.2	28.3	28.8	29.5

12H	4H	21.1	21.9	21.7	22.5	23.1	24.5	25.2	25.1	25.8	26.5
	6H	21.7	22.4	22.4	23.0	23.6	26.0	26.6	26.6	27.2	27.9
	8H	22.0	22.6	22.6	23.2	23.9	26.8	27.4	27.4	28.0	28.7

Maximum UGR = 29.5

POLAR GRAPH



Maximum Candela = 2074.253 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.)