



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-22-L30-835-D-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18872.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 2-JAN-2020

[MANUFAC] WILLIAMS LINEAR

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

[LUMINAIRE] 2-56 LED 22" ARRAYS-SERIES 2x2 'RECESSED LUMINAIRE w/WHITE

[MORE] REFL, FROST CONCAVE ACRYLIC LENS w/SHALLOW ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT1-22-L20-8TW-D-DALI-UNV 4000k

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Architectural, Classroom, Commercial, Educational, Office, Direct

[_SEARCH_MOUNTING] Ceiling, Recessed

[_SEARCH_CERTIFICATION] DLC

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2039
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	21.05
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.16
Spacing Criterion (90-270)	1.30
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.76 ft
Luminous Width (90-270)	1.77 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2034	2297	2553
55	1793	2159	2369
65	1548	2005	2284
75	1306	1921	2135
85	858	1052	942

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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	770.118	770.118	770.118	770.118	770.118
5	770.816	768.026	767.328	766.630	766.630
10	754.772	754.074	753.377	756.864	760.352
15	726.869	728.962	735.240	740.820	747.796
20	688.502	694.781	707.337	719.893	732.449
25	641.068	650.834	669.668	690.595	707.337
30	592.238	604.096	627.116	658.507	675.946
35	539.222	547.593	579.681	619.443	634.790
40	478.534	489.695	525.271	571.311	583.169
45	415.752	429.704	469.465	512.715	521.783
50	354.366	369.713	413.660	449.236	457.607
55	297.165	313.209	357.854	386.454	392.732
60	239.964	260.892	301.351	326.463	335.532
65	189.042	209.969	244.847	265.775	279.028
70	143.002	158.349	196.017	209.271	221.130
75	97.660	112.309	143.700	147.885	159.744
80	55.806	67.664	86.499	69.060	69.757
85	21.625	23.717	26.508	22.322	23.717
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	280.30	N.A.	13.70
0-30	589.78	N.A.	28.90
0-40	954.26	N.A.	46.80
0-60	1631.43	N.A.	80.00
0-80	2006.87	N.A.	98.40
0-90	2039.28	N.A.	100.00
10-90	1966.41	N.A.	96.40
20-40	673.96	N.A.	33.00
20-50	1036.79	N.A.	50.80
40-70	914.32	N.A.	44.80
60-80	375.44	N.A.	18.40
70-80	138.29	N.A.	6.80
80-90	32.41	N.A.	1.60
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2039.28	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	72.87
10-20	207.43
20-30	309.48
30-40	364.47
40-50	362.83
50-60	314.33
60-70	237.15
70-80	138.29
80-90	32.41
90-100	0.00
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	80	80	80	80	78	78	78	78	75	75	75	72	72	72	69	69	69	67
1	73	70	67	65	72	69	66	64	66	64	62	63	61	60	61	59	58	57
2	67	61	57	53	65	60	56	52	58	54	51	55	53	50	53	51	49	47
3	61	54	49	44	59	53	48	44	51	47	43	49	45	42	47	44	42	40
4	56	48	42	38	54	47	42	37	45	41	37	44	40	36	42	39	36	34
5	51	43	37	32	50	42	37	32	41	36	32	39	35	32	38	34	31	30
6	48	39	33	28	46	38	32	28	37	32	28	36	31	28	35	31	28	26
7	44	35	29	25	43	35	29	25	34	29	25	33	28	25	32	28	25	23
8	41	32	26	23	40	32	26	22	31	26	22	30	25	22	29	25	22	21
9	38	30	24	20	38	29	24	20	28	24	20	28	23	20	27	23	20	19
10	36	27	22	18	35	27	22	18	26	22	18	26	21	18	25	21	18	17

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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	15.1	16.7	15.5	17.0	17.4	16.7	18.4	17.1	18.7	19.0
	3H	16.7	18.2	17.1	18.5	18.9	18.7	20.1	19.1	20.5	20.8
	4H	17.3	18.7	17.7	19.1	19.4	19.4	20.8	19.8	21.2	21.5
	6H	17.7	19.0	18.2	19.4	19.8	19.8	21.1	20.2	21.5	21.9
	8H	17.9	19.1	18.3	19.5	19.9	19.9	21.1	20.4	21.5	21.9
	12H	17.9	19.1	18.3	19.5	19.9	19.9	21.1	20.4	21.5	21.9

UGR Viewed Endwise

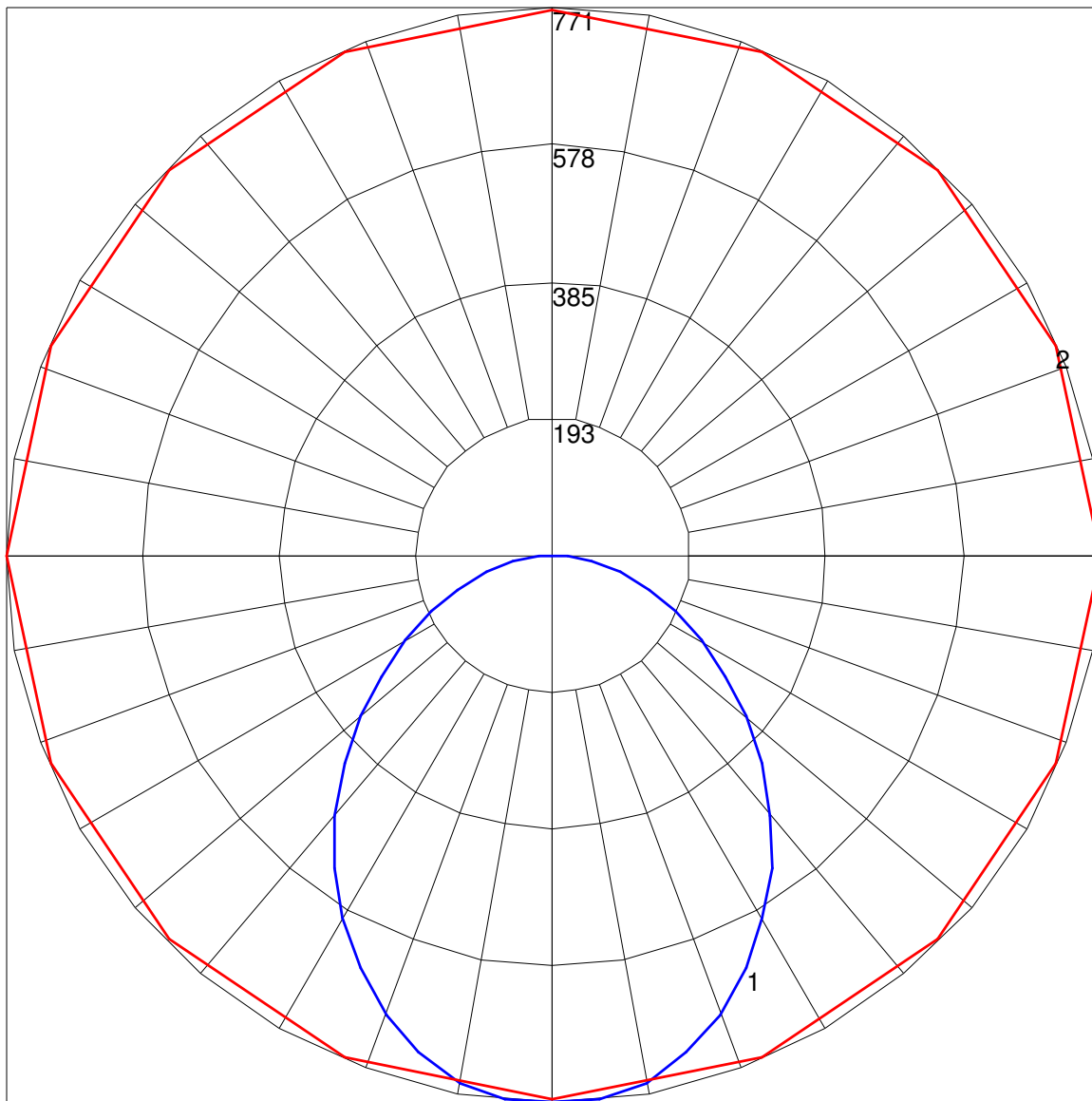
4H	2H	16.0	17.4	16.4	17.7	18.1	17.3	18.6	17.7	19.0	19.4
	3H	17.9	19.0	18.3	19.4	19.8	19.4	20.6	19.9	21.0	21.4
	4H	18.6	19.6	19.0	20.0	20.5	20.3	21.4	20.8	21.8	22.2
	6H	19.1	20.0	19.5	20.4	20.9	20.8	21.7	21.3	22.2	22.6
	8H	19.2	20.1	19.7	20.5	21.0	20.9	21.8	21.4	22.2	22.7
	12H	19.3	20.1	19.8	20.6	21.0	21.0	21.8	21.5	22.2	22.7

8H	4H	19.1	19.9	19.5	20.4	20.8	20.6	21.4	21.1	21.9	22.4
	6H	19.7	20.4	20.2	20.9	21.4	21.2	21.9	21.7	22.4	22.9
	8H	19.9	20.6	20.4	21.1	21.6	21.3	22.0	21.9	22.5	23.0
	12H	20.1	20.6	20.6	21.1	21.7	21.5	22.0	22.0	22.5	23.1

12H	4H	19.1	19.9	19.6	20.4	20.8	20.6	21.4	21.1	21.9	22.3
	6H	19.8	20.5	20.3	20.9	21.5	21.2	21.9	21.8	22.3	22.9
	8H	20.1	20.7	20.6	21.1	21.7	21.4	22.0	21.9	22.5	23.1

Maximum UGR = 23.1

POLAR GRAPH



Maximum Candela = 770.816 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.)