



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-24-L35-8TW-D-DALI-UNV 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18876.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 2-JAN-2020

[MANUFAC] WILLIAMS LINEAR

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

[LUMINAIRE] 4-32 LED 22" ARRAYS-SERIES 2x4 'RECESSED LUMINAIRE w/WHITE

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

[MORE] DIFFUSER

[LUMCAT] AT1-24-L35-8TW-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	3525
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	107
Total Luminaire Watts	32.82
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.12
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.76 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	1609	1882	2042
55	1396	1709	1842
65	1241	1627	1759
75	1060	1576	1618
85	893	957	978

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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	1356.209	1356.209	1356.209	1356.209	1356.209
5	1357.353	1356.209	1359.642	1359.642	1360.787
10	1320.730	1321.874	1329.886	1336.753	1340.186
15	1274.951	1281.818	1296.696	1312.719	1321.874
20	1194.837	1212.004	1237.183	1268.084	1281.818
25	1099.845	1115.868	1157.069	1201.704	1221.160
30	1005.998	1027.743	1084.967	1142.191	1163.936
35	923.595	949.918	1018.587	1081.534	1104.423
40	802.280	833.181	909.862	971.664	988.831
45	702.711	735.901	821.737	874.383	891.550
50	595.130	632.897	710.722	756.501	769.091
55	494.415	533.328	605.430	642.053	652.354
60	406.290	445.203	510.438	541.339	550.495
65	323.888	366.234	424.602	450.925	458.936
70	244.919	289.553	339.911	359.367	362.800
75	169.383	215.162	251.786	260.941	258.652
80	106.437	147.638	161.372	123.604	112.159
85	48.068	67.524	51.502	51.502	52.646
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	493.50	N.A.	14.00
0-30	1028.92	N.A.	29.20
0-40	1658.4	N.A.	47.00
0-60	2808.07	N.A.	79.70
0-80	3457.87	N.A.	98.10
0-90	3524.81	N.A.	100.00
10-90	3396.18	N.A.	96.40
20-40	1164.91	N.A.	33.00
20-50	1785.17	N.A.	50.60
40-70	1554.19	N.A.	44.10
60-80	649.80	N.A.	18.40
70-80	245.28	N.A.	7.00
80-90	66.94	N.A.	1.90
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	3524.81	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	128.63
10-20	364.87
20-30	535.42
30-40	629.48
40-50	620.27
50-60	529.40
60-70	404.52
70-80	245.28
80-90	66.94
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	104	104	104	104	102	102	102	102	97	97	97	93	93	93	89	89	89	87
1	95	91	87	84	93	89	86	83	85	82	80	82	80	77	79	77	75	73
2	87	79	74	69	84	78	72	68	75	70	66	72	68	65	69	66	63	61
3	79	70	63	57	77	69	62	57	66	60	56	64	59	55	61	57	54	52
4	73	62	55	49	71	61	54	48	59	53	48	57	51	47	55	50	46	45
5	67	56	48	42	65	55	47	42	53	46	41	51	45	41	50	45	41	39
6	62	50	43	37	60	49	42	37	48	41	36	46	41	36	45	40	36	34
7	57	46	38	33	56	45	38	33	44	37	32	42	37	32	41	36	32	30
8	53	42	34	29	52	41	34	29	40	34	29	39	33	29	38	33	29	27
9	50	38	31	26	49	38	31	26	37	31	26	36	30	26	35	30	26	24
10	47	35	29	24	46	35	28	24	34	28	24	33	28	24	33	27	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	13.3	14.9	13.6	15.2	15.5	14.7	16.3	15.1	16.6	17.0
	3H	15.0	16.4	15.4	16.8	17.1	16.7	18.1	17.1	18.5	18.8
	4H	15.6	17.0	16.0	17.3	17.7	17.4	18.8	17.8	19.2	19.5
	6H	16.1	17.4	16.5	17.8	18.2	17.8	19.1	18.3	19.5	19.9
	8H	16.3	17.5	16.7	17.9	18.3	17.9	19.2	18.4	19.5	19.9
	12H	16.4	17.6	16.8	18.0	18.4	18.0	19.2	18.4	19.5	20.0

UGR Viewed Endwise

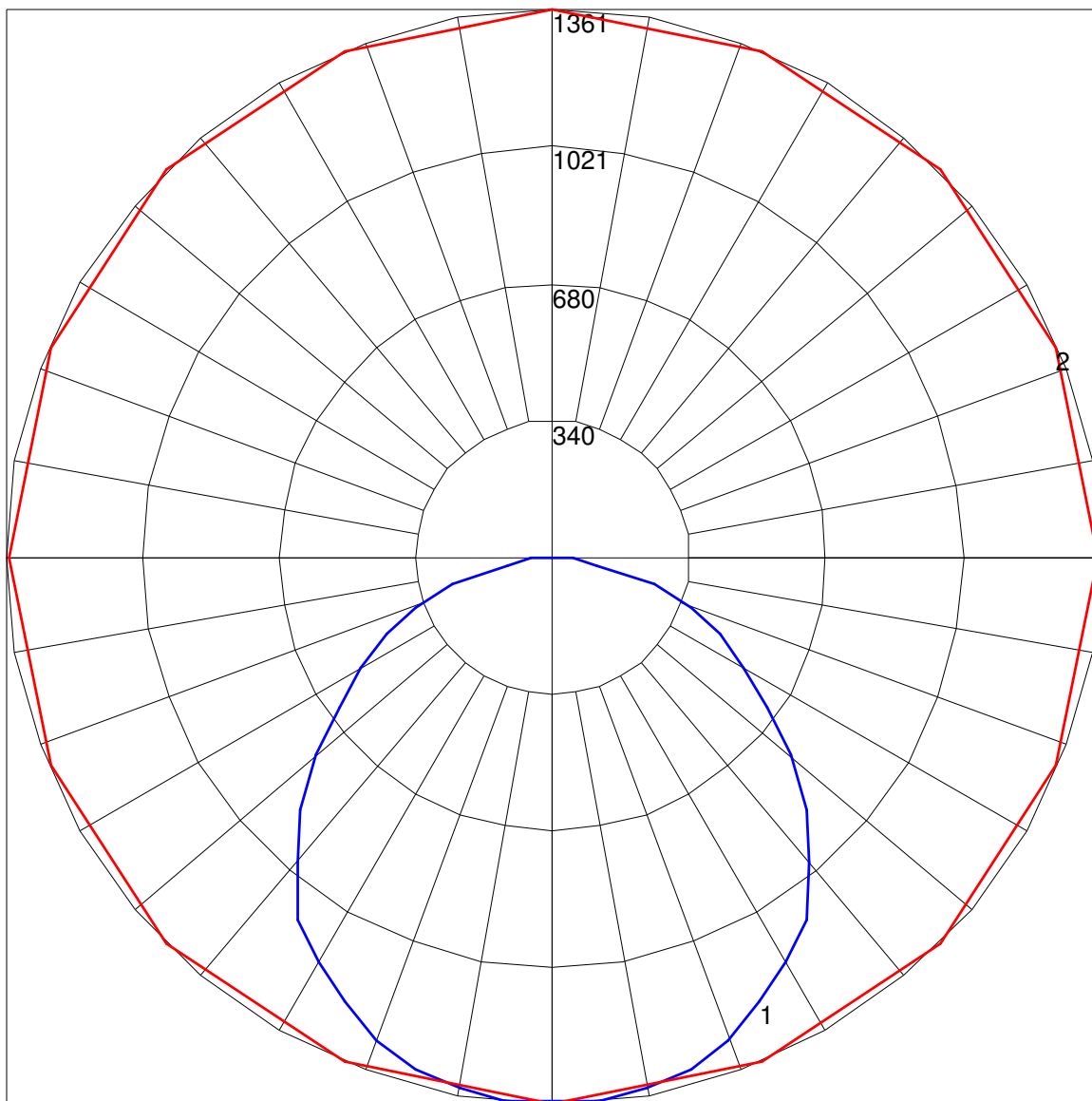
4H	2H	14.2	15.6	14.6	15.9	16.3	15.3	16.7	15.7	17.0	17.4
	3H	16.2	17.3	16.6	17.7	18.1	17.5	18.7	17.9	19.1	19.5
	4H	17.0	18.0	17.4	18.4	18.8	18.4	19.5	18.9	19.9	20.3
	6H	17.6	18.5	18.1	19.0	19.4	18.9	19.8	19.4	20.3	20.7
	8H	17.8	18.7	18.3	19.1	19.6	19.1	19.9	19.5	20.3	20.8
	12H	18.0	18.8	18.5	19.2	19.7	19.1	19.9	19.6	20.4	20.9

8H	4H	17.5	18.3	17.9	18.8	19.2	18.7	19.6	19.2	20.0	20.5
	6H	18.3	19.0	18.8	19.5	20.0	19.4	20.1	19.8	20.5	21.0
	8H	18.6	19.3	19.1	19.8	20.3	19.5	20.2	20.0	20.7	21.2
	12H	18.9	19.5	19.4	19.9	20.5	19.7	20.3	20.2	20.7	21.3

12H	4H	17.5	18.3	18.0	18.8	19.2	18.8	19.5	19.2	20.0	20.5
	6H	18.4	19.1	18.9	19.5	20.1	19.4	20.1	19.9	20.5	21.1
	8H	18.8	19.4	19.3	19.9	20.4	19.7	20.2	20.2	20.7	21.3

Maximum UGR = 21.3

POLAR GRAPH



Maximum Candela = 1360.787 Located At Horizontal Angle = 90, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)