



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT2-24-L35-8TW-D-DALI-UNV 4000K\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18887.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 03-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/DEEP ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT2-24-L35-8TW-D-DALI-UNV 4000k

[\_SEARCH\_SOURCETYPE] LED

[\_SEARCH\_APPLICATION] Indoor, Architectural, Classroom, Commercial, Office, Direct

[\_SEARCH\_MOUNTING] Ceiling, Recessed

[\_SEARCH\_CERTIFICATION] DLC

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3597
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	110
Total Luminaire Watts	32.82
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.12
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.26
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	1776	1890	1970
55	1529	1650	1712
65	1331	1472	1543
75	1101	1318	1383
85	839	1054	968

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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>
<b>0</b>	1510.390	1510.390	1510.390	1510.390	1510.390
<b>5</b>	1510.390	1510.390	1510.390	1512.705	1512.705
<b>10</b>	1466.409	1467.567	1472.196	1477.983	1482.613
<b>15</b>	1413.170	1417.799	1429.373	1439.789	1446.734
<b>20</b>	1332.152	1340.254	1358.772	1377.291	1386.550
<b>25</b>	1221.043	1230.302	1256.922	1278.913	1287.014
<b>30</b>	1115.721	1129.610	1158.544	1185.164	1195.581
<b>35</b>	1023.130	1037.019	1070.583	1099.518	1107.619
<b>40</b>	885.401	902.762	937.483	962.946	974.520
<b>45</b>	775.449	791.653	825.217	848.365	859.939
<b>50</b>	655.081	671.284	701.377	724.524	730.311
<b>55</b>	541.657	555.546	584.480	604.156	606.471
<b>60</b>	440.964	454.853	479.158	494.204	501.149
<b>65</b>	347.216	361.105	384.252	396.984	402.771
<b>70</b>	260.412	270.829	293.976	306.708	311.337
<b>75</b>	175.923	188.654	210.644	221.061	221.061
<b>80</b>	104.165	116.896	136.572	131.942	128.470
<b>85</b>	45.138	56.712	56.712	52.082	52.082
<b>90</b>	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	544.83	N.A.	15.10
0-30	1124.26	N.A.	31.30
0-40	1785.88	N.A.	49.70
0-60	2938.81	N.A.	81.70
0-80	3533.25	N.A.	98.20
0-90	3596.53	N.A.	100.00
10-90	3453.65	N.A.	96.00
20-40	1241.05	N.A.	34.50
20-50	1872.6	N.A.	52.10
40-70	1529.89	N.A.	42.50
60-80	594.44	N.A.	16.50
70-80	217.48	N.A.	6.00
80-90	63.28	N.A.	1.80
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	3596.53	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	142.88
10-20	401.94
20-30	579.43
30-40	661.62
40-50	631.55
50-60	521.39
60-70	376.96
70-80	217.48
80-90	63.28
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	102	99	95	98	95	92	94	92	89	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	74	72
3	91	81	73	67	89	80	72	67	77	70	65	74	69	64	71	67	63	61
4	84	72	64	57	82	71	63	57	69	62	56	66	60	56	64	59	55	53
5	77	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	54	45	39	65	53	45	39	51	44	39	50	43	38	48	43	38	36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	35	45	39	34	32
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	39	33	28	27

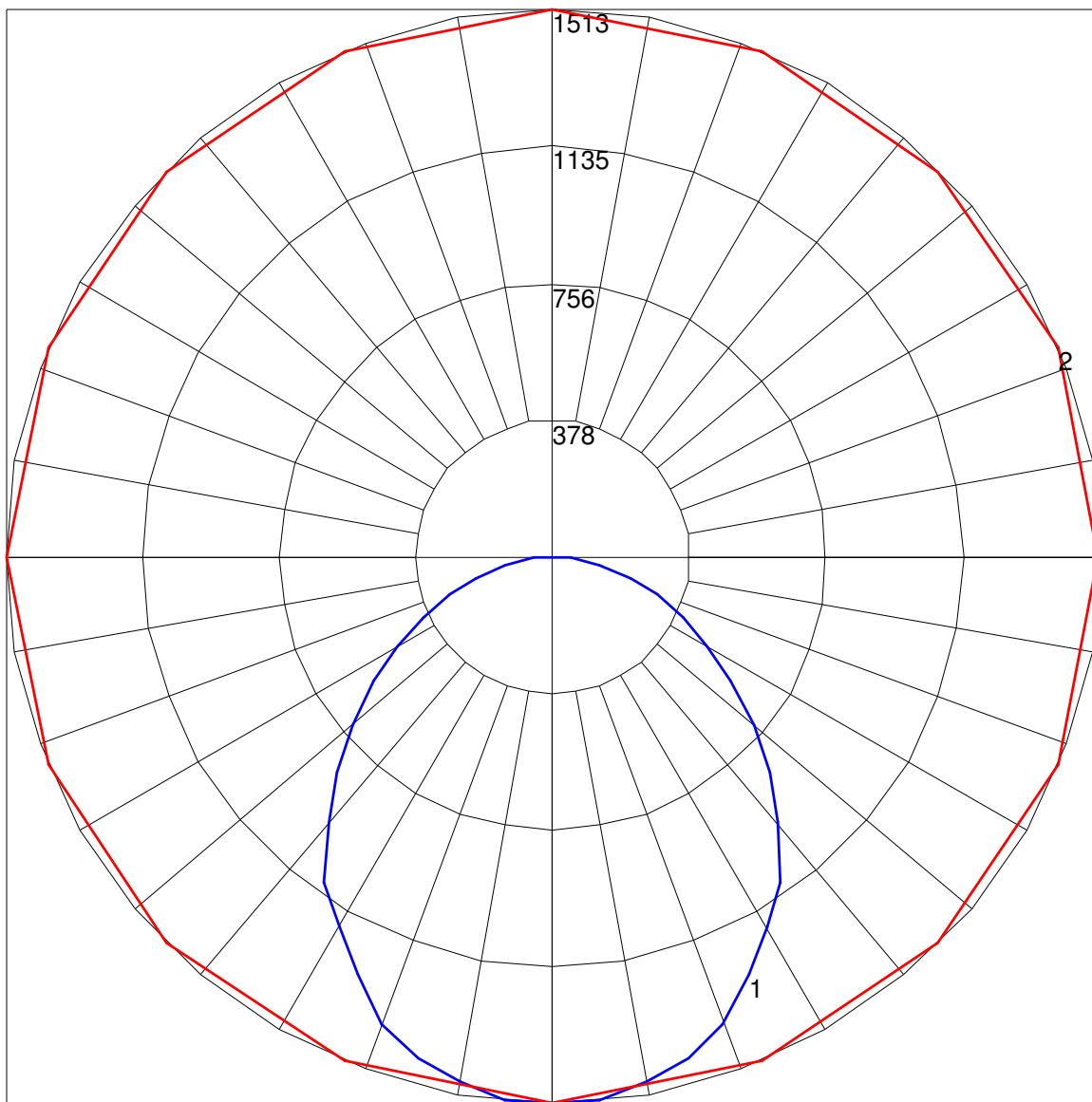
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**UGR TABLE - CORRECTED**

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	13.0	14.6	13.4	14.9	15.3	13.7	15.3	14.0	15.6	15.9
	3H	14.7	16.1	15.1	16.4	16.8	15.4	16.9	15.8	17.2	17.6
	4H	15.3	16.6	15.7	16.9	17.3	16.1	17.5	16.5	17.8	18.2
	6H	15.7	16.9	16.1	17.3	17.7	16.6	17.9	17.0	18.2	18.6
	8H	15.8	17.0	16.2	17.4	17.8	16.8	18.0	17.2	18.3	18.7
	12H	15.9	17.0	16.3	17.4	17.8	16.9	18.0	17.3	18.4	18.8
4H	2H	13.7	15.1	14.1	15.4	15.8	14.2	15.6	14.6	15.9	16.3
	3H	15.6	16.7	16.0	17.1	17.5	16.2	17.3	16.6	17.7	18.1
	4H	16.3	17.3	16.7	17.7	18.1	17.0	18.1	17.5	18.5	18.9
	6H	16.8	17.7	17.3	18.2	18.6	17.7	18.6	18.1	19.0	19.5
	8H	17.0	17.8	17.5	18.3	18.8	17.9	18.7	18.3	19.2	19.6
	12H	17.1	17.9	17.6	18.4	18.8	18.0	18.8	18.5	19.2	19.7
8H	4H	16.6	17.5	17.1	17.9	18.4	17.3	18.2	17.8	18.6	19.1
	6H	17.4	18.0	17.8	18.5	19.0	18.1	18.8	18.6	19.3	19.8
	8H	17.6	18.2	18.1	18.7	19.2	18.4	19.0	18.9	19.5	20.0
	12H	17.8	18.4	18.4	18.9	19.4	18.6	19.1	19.1	19.6	20.2
12H	4H	16.7	17.4	17.2	17.9	18.4	17.4	18.1	17.8	18.6	19.0
	6H	17.4	18.1	18.0	18.5	19.1	18.2	18.8	18.7	19.2	19.8
	8H	17.8	18.3	18.3	18.8	19.4	18.5	19.0	19.0	19.5	20.1

Maximum UGR = 20.2

POLAR GRAPH



Maximum Candela = 1512.705 Located At Horizontal Angle = 67.5, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (67.5 - 247.5) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)