



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT2-24-L50-8TW-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-L50-8TW-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	5121
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	109
Total Luminaire Watts	47
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	2529	2691	2804
55	2178	2350	2438
65	1894	2097	2198
75	1567	1877	1969
85	1194	1500	1378

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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	2150.499	2150.499	2150.499	2150.499	2150.499
5	2150.499	2150.499	2150.499	2153.795	2153.795
10	2087.879	2089.527	2096.119	2104.358	2110.950
15	2012.076	2018.668	2035.147	2049.978	2059.865
20	1896.724	1908.259	1934.625	1960.991	1974.175
25	1738.526	1751.709	1789.611	1820.921	1832.456
30	1588.568	1608.343	1649.540	1687.441	1702.272
35	1456.737	1476.511	1524.300	1565.497	1577.033
40	1260.637	1285.356	1334.793	1371.046	1387.525
45	1104.088	1127.158	1174.947	1207.905	1224.384
50	932.707	955.777	998.623	1031.580	1039.820
55	771.213	790.988	832.185	860.200	863.495
60	627.847	647.622	682.227	703.650	713.537
65	494.368	514.142	547.100	565.227	573.466
70	370.776	385.607	418.565	436.691	443.283
75	250.480	268.606	299.916	314.747	314.747
80	148.310	166.437	194.451	187.860	182.916
85	64.268	80.747	80.747	74.155	74.155
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	775.73	N.A.	15.10
0-30	1600.72	N.A.	31.30
0-40	2542.74	N.A.	49.70
0-60	4184.29	N.A.	81.70
0-80	5030.65	N.A.	98.20
0-90	5120.76	N.A.	100.00
10-90	4917.32	N.A.	96.00
20-40	1767.02	N.A.	34.50
20-50	2666.21	N.A.	52.10
40-70	2178.27	N.A.	42.50
60-80	846.36	N.A.	16.50
70-80	309.64	N.A.	6.00
80-90	90.11	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	5120.76	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	203.44
10-20	572.29
20-30	825.00
30-40	942.02
40-50	899.20
50-60	742.35
60-70	536.72
70-80	309.64
80-90	90.11
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	78	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	33
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

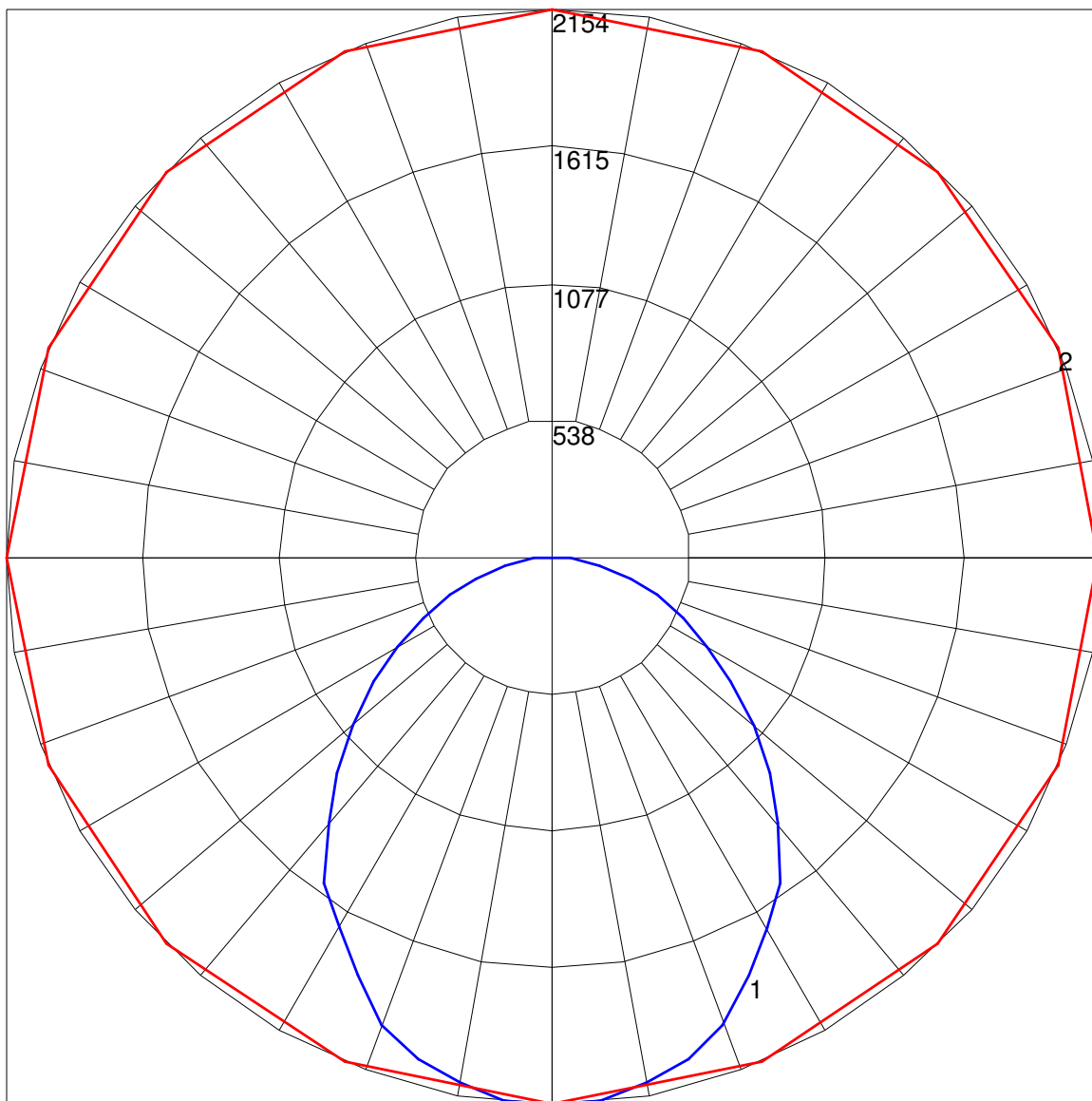
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UGR TABLE - CORRECTED

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	14.3	15.9	14.7	16.2	16.6	15.0	16.6	15.3	16.9	17.2
	3H	16.0	17.4	16.4	17.7	18.1	16.7	18.2	17.1	18.5	18.9
	4H	16.6	17.9	17.0	18.2	18.6	17.4	18.8	17.8	19.1	19.5
	6H	17.0	18.2	17.4	18.6	19.0	17.9	19.2	18.3	19.5	19.9
	8H	17.1	18.3	17.5	18.7	19.1	18.1	19.3	18.5	19.6	20.0
	12H	17.2	18.3	17.6	18.7	19.1	18.2	19.3	18.6	19.7	20.1
4H	2H	15.0	16.4	15.4	16.7	17.1	15.5	16.9	15.9	17.2	17.6
	3H	16.9	18.0	17.3	18.4	18.8	17.5	18.6	17.9	19.0	19.4
	4H	17.6	18.6	18.0	19.0	19.4	18.3	19.4	18.8	19.8	20.2
	6H	18.1	19.0	18.6	19.5	19.9	19.0	19.9	19.4	20.3	20.8
	8H	18.3	19.1	18.8	19.6	20.1	19.2	20.0	19.6	20.5	20.9
	12H	18.4	19.2	18.9	19.7	20.1	19.3	20.1	19.8	20.5	21.0
8H	4H	17.9	18.8	18.4	19.2	19.7	18.6	19.5	19.1	19.9	20.4
	6H	18.7	19.3	19.2	19.8	20.3	19.4	20.1	19.9	20.6	21.1
	8H	18.9	19.5	19.4	20.0	20.5	19.7	20.3	20.2	20.8	21.3
	12H	19.1	19.7	19.7	20.2	20.7	19.9	20.4	20.4	20.9	21.5
12H	4H	18.0	18.7	18.5	19.2	19.7	18.7	19.4	19.1	19.9	20.3
	6H	18.7	19.4	19.3	19.8	20.4	19.5	20.1	20.0	20.5	21.1
	8H	19.1	19.6	19.6	20.1	20.7	19.8	20.3	20.3	20.8	21.4

Maximum UGR = 21.5

POLAR GRAPH



Maximum Candela = 2153.795 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.)