



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 192_168_37_234-9_53_31-MERGED.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 29653.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 27-JAN-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836
 [LUMINAIRE] 4' INDIRECT/DIRECT SUSPENDED LUMINAIRE
 [MORE] WITH FROSTED ACRYLIC LENSES
 [LUMCAT] MX4UD-4-00-L12/835U-L12/835D-(L2.5U)-F-DIM-UNV
 [LAMPCAT] HLM 80 CRI, 3500K CCT
 [SEARCH_SOURCETYPE] LED
 [SEARCH_APPLICATION] Indoor, Architectural, Classroom, Direct
 [SEARCH_MOUNTING] Suspended

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5869
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	114
Total Luminaire Watts	51.7
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.28
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	4.00 ft
Luminous Width (90-270)	0.32 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	13948	13526	13314
55	12810	12289	11941
65	10903	10726	10372
75	8276	8661	8180
85	4001	5144	4858

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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	1976.785	1976.785	1976.785	1976.785	1976.785
5	1985.623	1965.001	1956.163	1950.271	1950.271
10	1950.271	1929.648	1920.810	1914.918	1909.026
15	1882.512	1867.782	1853.052	1847.160	1838.321
20	1802.969	1782.347	1770.563	1752.887	1746.995
25	1699.858	1676.290	1664.506	1643.884	1640.938
30	1596.747	1570.233	1546.665	1540.773	1526.043
35	1452.392	1434.716	1414.093	1393.471	1393.471
40	1316.875	1299.198	1272.684	1266.792	1246.170
45	1166.627	1148.951	1131.275	1113.599	1113.599
50	1025.218	1001.650	986.919	975.135	960.405
55	869.078	848.456	833.726	818.996	810.158
60	707.047	695.263	686.425	674.640	665.802
65	545.015	542.069	536.177	521.447	518.501
70	403.606	400.660	391.822	385.930	380.038
75	253.358	262.196	265.143	256.304	250.412
80	129.625	135.517	135.517	138.463	141.409
85	41.244	44.190	53.029	47.136	50.082
90	0.000	0.000	0.000	0.000	0.000
95	12.509	13.104	12.509	12.509	11.317
100	28.591	28.591	28.591	25.613	25.017
105	49.438	49.438	45.269	43.482	41.695
110	79.816	76.242	69.095	63.138	62.543
115	113.172	107.216	96.494	89.942	88.155
120	147.720	139.976	128.064	117.342	115.555
125	187.628	178.098	160.824	149.507	144.742
130	229.323	218.601	197.754	184.054	181.672
135	264.466	247.788	235.280	220.984	218.601
140	300.800	287.696	270.423	257.318	253.745
145	333.561	329.391	303.779	291.270	288.292
150	361.556	356.791	334.157	324.031	318.670
155	385.978	380.021	361.556	356.195	350.835
160	406.825	403.251	391.338	384.786	380.021
165	421.716	421.716	413.377	408.612	404.443
170	433.033	434.225	430.651	428.864	425.290
175	438.990	441.968	440.777	438.394	436.607
180	441.968	441.968	441.968	441.968	441.968

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	709.21	N.A.	12.10
0-30	1476.68	N.A.	25.20
0-40	2364.05	N.A.	40.30
0-60	3988.06	N.A.	67.90
0-80	4794.62	N.A.	81.70
0-90	4857.56	N.A.	82.80
10-90	4671.57	N.A.	79.60
20-40	1654.84	N.A.	28.20
20-50	2530.64	N.A.	43.10
40-70	2154.56	N.A.	36.70
60-80	806.56	N.A.	13.70
70-80	276.00	N.A.	4.70
80-90	62.94	N.A.	1.10
90-110	64.17	N.A.	1.10
90-120	162.22	N.A.	2.80
90-130	309.32	N.A.	5.30
90-150	684.62	N.A.	11.70
90-180	1011.9	N.A.	17.20
110-180	947.73	N.A.	16.10
0-180	5869.46	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	185.99
10-20	523.22
20-30	767.47
30-40	887.38
40-50	875.79
50-60	748.22
60-70	530.55
70-80	276.00
80-90	62.94
90-100	14.27
100-110	49.91
110-120	98.05
120-130	147.10
130-140	182.83
140-150	192.47
150-160	168.94
160-170	116.66
170-180	41.68

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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	115	115	115	115	110	110	110	110	102	102	102	94	94	94	86	86	86	83
1	105	101	97	93	101	97	94	90	90	87	84	83	81	79	77	75	74	70
2	96	89	82	77	92	85	80	75	79	74	70	73	69	66	68	65	62	59
3	88	78	70	64	84	75	68	63	70	64	59	65	60	56	60	57	53	50
4	81	69	61	55	77	67	59	54	62	56	51	58	53	48	54	50	46	43
5	74	62	54	47	71	60	52	46	56	49	44	52	47	42	49	44	40	38
6	69	56	48	41	66	54	46	41	51	44	39	47	42	37	44	39	36	33
7	64	51	42	37	61	49	41	36	46	39	35	43	37	33	41	36	32	30
8	59	46	38	33	57	45	37	32	42	36	31	40	34	30	37	32	29	27
9	55	43	35	29	53	41	34	29	39	32	28	37	31	27	35	30	26	24
10	52	39	32	27	50	38	31	26	36	30	25	34	28	24	32	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	19.5	20.8	20.1	21.4	22.1	19.3	20.5	19.9	21.1	21.8
	3H	21.1	22.2	21.7	22.8	23.6	20.8	21.9	21.4	22.6	23.3
	4H	21.6	22.6	22.2	23.3	24.0	21.3	22.4	22.0	23.0	23.8
	6H	21.9	22.9	22.5	23.5	24.3	21.7	22.6	22.3	23.3	24.1
	8H	21.9	22.9	22.6	23.5	24.3	21.7	22.7	22.4	23.4	24.1
	12H	22.0	22.8	22.6	23.5	24.3	21.8	22.7	22.5	23.3	24.1

UGR Viewed Endwise

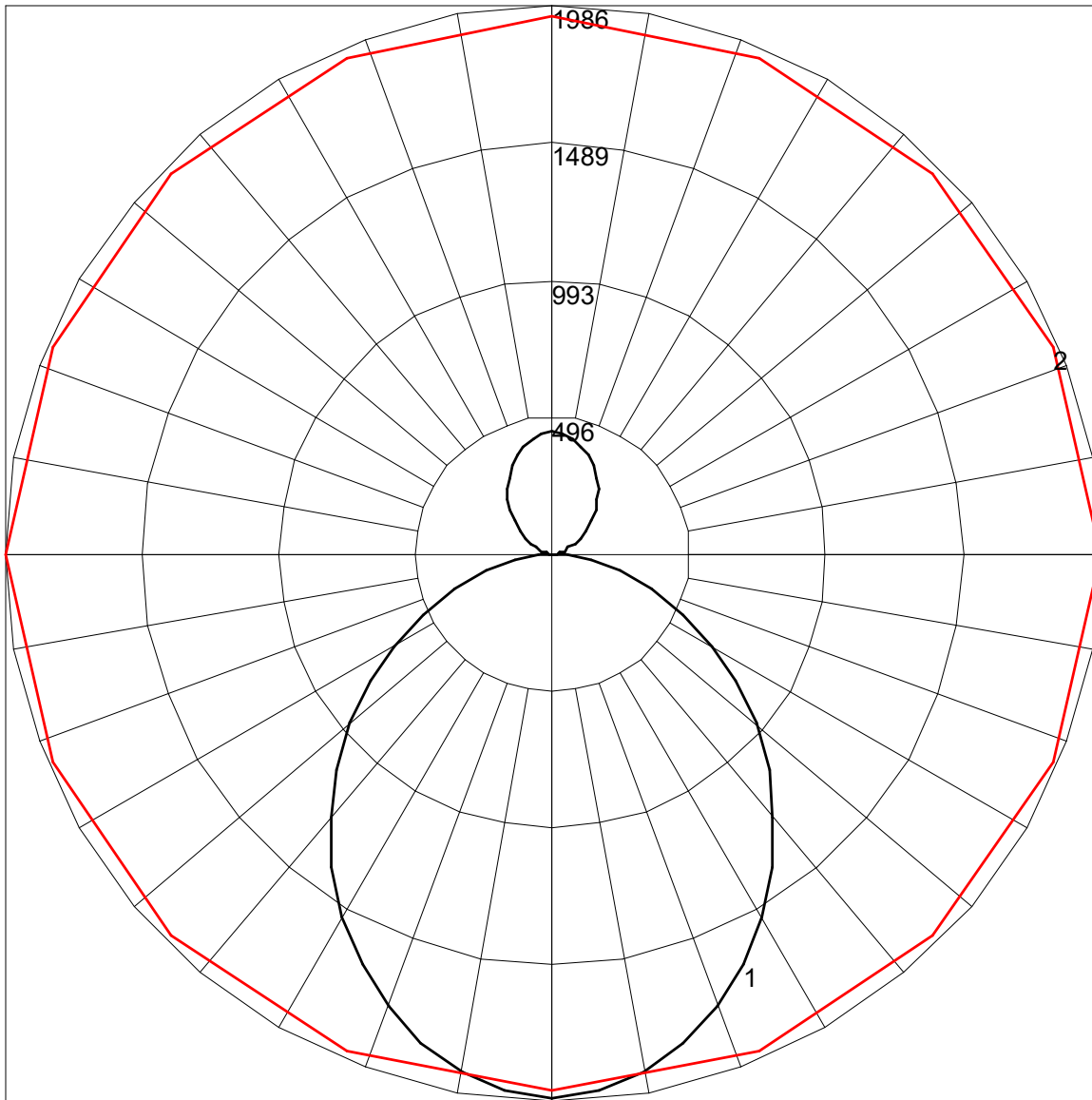
4H	2H	20.0	21.1	20.7	21.7	22.5	19.8	20.9	20.5	21.5	22.3
	3H	21.8	22.7	22.5	23.4	24.1	21.6	22.4	22.2	23.1	23.9
	4H	22.4	23.2	23.1	23.9	24.7	22.2	23.0	22.9	23.7	24.5
	6H	22.8	23.5	23.5	24.2	25.0	22.6	23.3	23.3	24.0	24.9
	8H	22.9	23.5	23.6	24.3	25.1	22.8	23.4	23.5	24.1	24.9
	12H	22.9	23.5	23.7	24.3	25.1	22.8	23.4	23.5	24.1	25.0

8H	4H	22.6	23.3	23.3	24.0	24.8	22.4	23.1	23.1	23.8	24.6
	6H	23.1	23.6	23.8	24.4	25.2	23.0	23.5	23.7	24.3	25.1
	8H	23.3	23.7	24.0	24.5	25.3	23.1	23.6	23.9	24.4	25.2
	12H	23.3	23.8	24.1	24.5	25.4	23.2	23.7	24.0	24.4	25.3

12H	4H	22.6	23.2	23.3	23.9	24.8	22.4	23.0	23.1	23.7	24.6
	6H	23.1	23.6	23.9	24.3	25.2	23.0	23.5	23.7	24.2	25.1
	8H	23.3	23.7	24.1	24.5	25.4	23.2	23.6	23.9	24.4	25.3

Maximum UGR = 25.4

POLAR GRAPH



Maximum Candela = 1985.623 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)