



IES INDOOR REPORT
PHOTOMETRIC FILENAME : HES-24-L98-835-A-DIM-UNV.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]GEN FROM G100669206
[TESTLAB]Intertek
[ISSUE DATE] 03/19/2019
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
[LUMCAT] HES-24-L98-835-A-DIM-UNV
[LUMINAIRE] 2X4 SURFACE MOUNT LED LUMINAIRE
[MORE] WITH FROSTED LENSES
[LAMP]LED
[LAMPCAT] HLM 80 CRI 3500K CCT
[_SEARCH_APPLICATION] INDOOR
[_SEARCH_SOURCETYPE] LED
[_SEARCH_MOUNTING] SURFACE

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9814
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	124
Total Luminaire Watts	79.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.30
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.92 ft
Luminous Width (90-270)	1.96 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4584	4714	4746
55	3897	4169	4087
65	3166	3493	2801
75	2442	2373	1612
85	1549	594	283

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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>
0.0	4100.326	4100.326	4100.326	4100.326	4100.326
2.5	4100.956	4101.711	4095.039	4096.298	4078.045
5.0	4085.598	4085.346	4078.170	4079.933	4060.798
7.5	4059.414	4058.784	4050.602	4049.972	4034.111
10.0	4024.543	4022.403	4015.228	4011.577	3992.443
12.5	3976.204	3975.952	3966.259	3961.349	3944.858
15.0	3916.408	3917.415	3905.330	3901.554	3883.552
17.5	3843.269	3844.780	3831.562	3826.275	3811.294
20.0	3758.674	3759.052	3746.967	3741.176	3728.840
22.5	3663.128	3663.757	3650.917	3645.378	3627.628
25.0	3555.874	3556.881	3547.439	3535.984	3520.752
27.5	3434.395	3436.660	3430.870	3421.806	3405.567
30.0	3300.831	3304.733	3303.600	3296.676	3284.843
32.5	3156.440	3162.861	3168.148	3165.882	3157.573
35.0	3003.868	3011.673	3025.646	3028.667	3019.855
37.5	2843.742	2855.449	2873.703	2881.759	2871.563
40.0	2674.804	2689.659	2715.339	2729.187	2719.745
42.5	2498.565	2516.945	2550.808	2569.942	2559.871
45.0	2316.032	2339.699	2381.367	2406.418	2397.732
47.5	2133.499	2159.305	2211.170	2240.375	2233.829
50.0	1951.595	1981.682	2040.848	2075.088	2063.633
52.5	1772.713	1805.443	1873.295	1903.381	1877.071
55.0	1596.851	1632.854	1708.385	1719.841	1675.026
57.5	1425.899	1464.168	1548.637	1527.992	1462.406
60.0	1261.871	1301.399	1386.623	1327.457	1247.017
62.5	1104.515	1146.561	1221.462	1126.167	1037.796
65.0	956.097	1002.296	1054.665	933.437	845.821
67.5	817.245	866.089	889.126	754.429	672.226
70.0	686.199	737.308	727.993	592.415	522.675
72.5	564.217	614.571	576.931	453.312	400.188
75.0	451.549	493.469	438.835	336.491	298.096
77.5	348.953	375.767	313.580	237.923	211.739
80.0	254.539	266.373	202.675	151.314	132.305
82.5	170.700	165.161	107.002	75.405	61.306
85.0	96.428	74.776	37.010	24.044	17.624
87.5	32.101	14.854	5.161	4.028	1.133
90.0	0.000	0.000	0.000	0.000	0.000
92.5	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000
107.5	0.000	0.000	0.000	0.000	0.000
110.0	0.000	0.000	0.000	0.000	0.000
112.5	0.000	0.000	0.000	0.000	0.000
115.0	0.000	0.000	0.000	0.000	0.000
117.5	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000
122.5	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000
127.5	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000
132.5	0.000	0.000	0.000	0.000	0.000

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CANDELA TABULATION - (Cont.)

135.0	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000
152.5	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000
157.5	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000
162.5	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000
167.5	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1487.95	N.A.	15.20
0-30	3118.92	N.A.	31.80
0-40	5004.71	N.A.	51.00
0-60	8327.99	N.A.	84.90
0-80	9738.73	N.A.	99.20
0-90	9813.73	N.A.	100.00
10-90	9426.43	N.A.	96.10
20-40	3516.76	N.A.	35.80
20-50	5344.69	N.A.	54.50
40-70	4291.74	N.A.	43.70
60-80	1410.74	N.A.	14.40
70-80	442.28	N.A.	4.50
80-90	75.00	N.A.	0.80
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	9813.73	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	387.30
10-20	1100.65
20-30	1630.96
30-40	1885.79
40-50	1827.93
50-60	1495.35
60-70	968.46
70-80	442.28
80-90	75.00
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

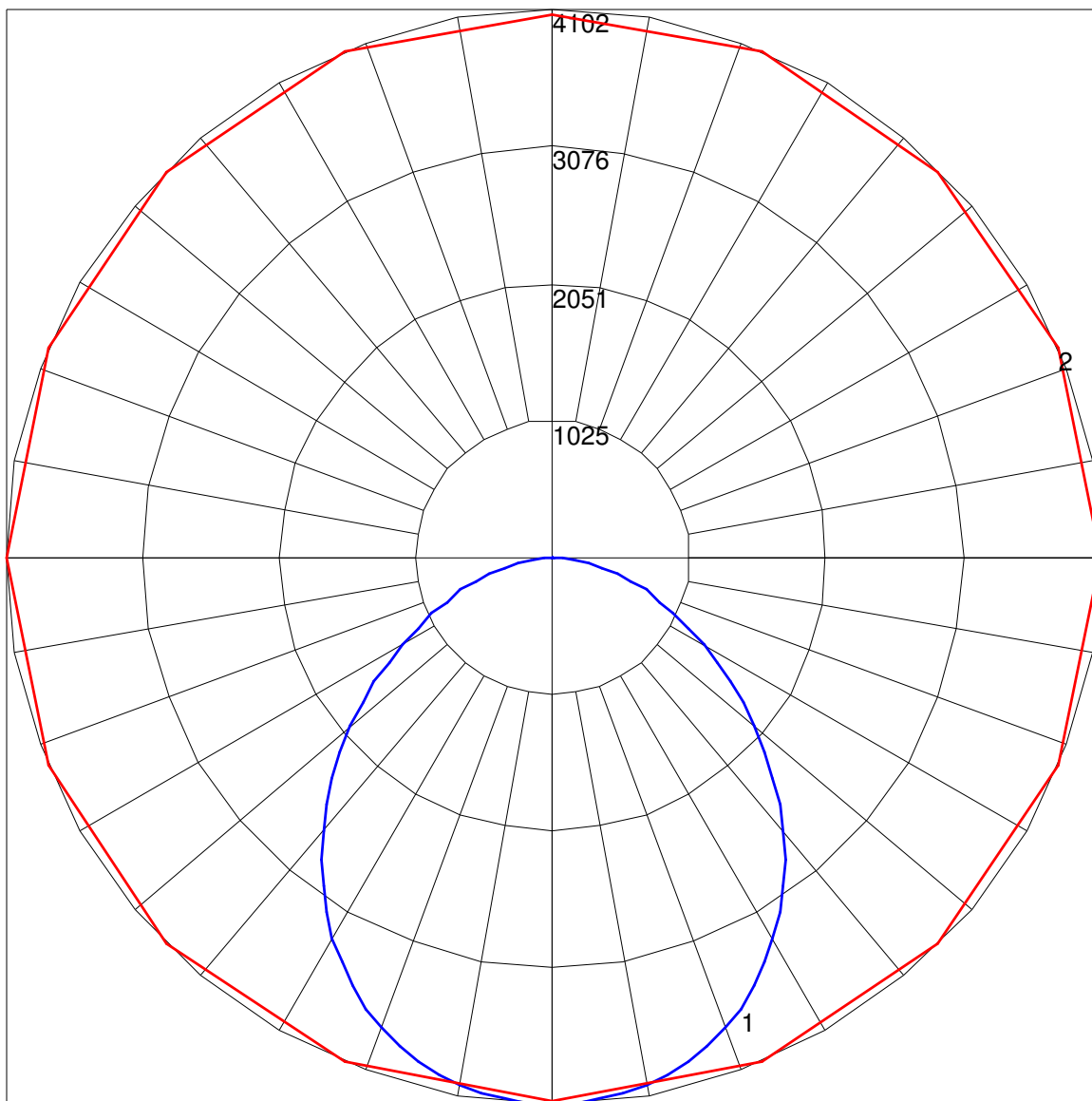
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	69	65	63
4	85	74	65	59	83	72	65	59	70	63	58	68	62	57	65	60	56	54
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	73	60	51	45	71	59	51	45	57	50	45	55	49	44	54	48	44	42
7	67	54	46	40	66	54	46	40	52	45	40	51	44	39	49	44	39	37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	35	45	40	35	33
9	59	46	38	32	57	45	38	32	44	37	32	43	37	32	42	36	32	30
10	55	42	35	30	54	42	34	29	41	34	29	40	34	29	39	33	29	27

POLAR GRAPH



Maximum Candela = 4101.711 Located At Horizontal Angle = 22.5, Vertical Angle = 2.5
1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)