H.E. WILLIAMS, INC.

IES INDOOR REPORT
PHOTOMETRIC FILENAME : AP-24-L30-835-EM10W-DIM-UNV_(EMER MODE).IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN from LLI-20113-2
[TESTLAB] LightLab International (www.LightLabInt.com)
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.64836
[LUMCAT] AP-24-L30-835-EM10W-DIM-UNV (EMER MODE)
[LUMINAIRE] RECESSED 2 X 4 ARCHED CENTER LED LUMINAIRE
[MORE] White steel fabricated housing with frosted white concave lens.
[MORE] 360 LEDs with180 mounted along each long side of clear plastic sheet.
[ISSUEDATE] 07-15-2021
[_SEARCH_SOURCETYPE] LED
[_SEARCH_APPLICATION] Indoor, Architectural, Direct-Indirect
[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1210
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	121
Total Luminaire Watts	10
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.38
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.16 m
Luminous Width (90-270)	0.57 m
Luminous Height	0.00 m

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	593	595	601
55	573	576	585
65	540	546	556
75	487	491	508
85	374	356	368

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CANDELA TABULATION

	0.0	22.5	45.0	67.5	90.0
0.0	416.668	416.668	416.668	416.668	416.668
0.5	417.297	417.180	416.795	416.245	415.589
1.0	417.340	417.067	416.725	416.197	415.604
1.5	417.244	416.967	416.634	416.118	415.420
2.0	417.058	416.857	416.534	415.943	415.269
2.5	416.926	416.692	416.340	415.807	415.152
3.0	416.711	416.522	416.171	415.664	414.908
3.5	416.522	416.307	415.898	415.353	414.721
4.0	416.281	416.039	415.647	415.111	414.430
4.5	415.893	415.716	415.298	414.769	414.090
5.0	415.573	415.360	414.987	414.456	413.753
5.5	415.152	414.977	414.604	414.119	413.399
6.0	414.750	414.561	414.200	413.705	412.983
6.5	414.236	414.059	413.739	413.256	412.545
7.0	413.660	413.528	413.270	412.784	412.081
7.5	413.114	412.976	412.718	412.258	411.563
8.0	412.454	412.364	412.098	411.684	411.001
8.5	411.869	411.706	411.498	411.132	410.388
9.0	411.144	411.020	410.833	410.508	409.829
9.5	410.451	410.353	410.161	409.769	409.126
10.0	409.654	409.578	409.446	409.116	408.401
10.5	408.875	408.789	408.595	408.444	407.756
11.0	408.038	407.995	407.863	407.658	407.002
11.5	407.143	407.117	406.974	406.840	406.151
12.0	406.273	406.204	406.125	405.993	405.304
12.5	405.321	405.245	405.257	405.130	404.427
13.0	404.324	404.326	404.269	404.271	403.631
13.5	403.315	403.313	403.308	403.313	402.669
14.0	402.339	402.265	402.361	402.325	401.739
14.5	401.258	401.256	401.275	401.297	400.718
15.0	400.206	400.149	400.168	400.242	399.683
15.5	399.006	399.037	399.051	399.250	398.649
16.0	397.913	397.848	397.932	398.090	397.588
16.5	396.650	396.662	396.720	396.959	396.497
17.0	395.393	395.409	395.493	395.780	395.287
17.5	394.214	394.199	394.304	394.587	394.089
18.0	392.898	392.872	392.977	393.317	392.872
18.5	391.543	391.598	391.724	392.076	391.557
19.0	390.208	390.244	390.347	390.708	390.352
19.5	388.838	388.871	389.005	389.407	388.998
20.0	387.382	387.429	387.532	388.020	387.690
20.5	385.968	385.952	386.143	386.595	386.298
21.0	384.445	384.481	384.656	385.172	384.945
21.5	382.931	382.931	383.142	383.675	383.460
22.0	381.403	381.413	381.588	382.161	381.941
22.5	379.816	379.828	380.059	380.576	380.488
23.0	378.230	378.247	378.453	379.077	378.912
23.5	376.532	376.571	376.819	377.429	377.355
24.0	374.882	374.904	375.153	375.817	375.760
24.5	373.170	373.175	373.476	374.163	374.167
25.0	371.362	371.424	371.731	372.446	372.455
25.5	369.688	369.712	370.004	370.731	370.815
26.0	367.864	367.883	368.230	368.971	369.014
26.5	366.092	366.109	366.448	367.211	367.307

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CANDELA TABULATION - (Cont.)

27.0	364.208	364.246	364.552	365.358	365.501
27.5	362.378	362.364	362.711	363.626	363.722
28.0	360.420	360.480	360.819	361.670	361.864
28.5	358.442	358.495	358.885	359.796	360.016
29.0	356.508	356.558	356.926	357.875	358.112
29.5	354.451	354.551	354.939	355.893	356.135
30.0	352.452	352.512	352.933	353.906	354.107
30.5	350.410	350.453	350.831	351.804	352.139
31.0	348.255	348.408	348.810	349.812	350.140
31.5	346.151	346.215	346.689	347.696	348.035
32.0	344.008	344.135	344.582	345.603	345.957
32.5	341.854	341.940	342.461	343.473	343.858
33.0	339.623	339.718	340.237	341.273	341.729
33.5	337.437	337.504	338.028	339.073	339.620
34.0	335.125	335.256	335.785	336.863	337.358
34.5	332.838	332.977	333.506	334.572	335.110
35.0	330.464	330.624	331.184	332.288	332.881
35.5	328.216	328.309	328.898	330.005	330.605
36.0	325.803	325.901	326.521	327.661	328.233
36.5	323.476	323.620	324.227	325.325	325.973
37.0	321.025	321.190	321.757	322.912	323.639
37.5	318.593	318.708	319.325	320.514	321.207
38.0	316.130	316.245	316.900	318.091	318.806
38.5	313.612	313.732	314.368	315.600	316.384
39.0	311.109	311.240	311.848	313.127	313.935
39.5	308.528	308.646	309.315	310.578	311.434
40.0	305.924	306.116	306.768	308.050	308.909
40.5	303.368	303.464	304.150	305.444	306.388
41.0	300.848	300.967	301.596	302.964	303.944
41.5	298.162	298.239	298.925	300.298	301.283
42.0	295.434	295.596	296.211	297.650	298.621
42.5	292.760	292.925	293.643	294.998	296.029
43.0	290.034	290.175	290.869	292.323	293.332
43.5	287.322	287.463	288.121	289.608	290.677
44.0	284.477	284.673	285.381	286.835	287.935
44.5	281.743	281.920	282.669	284.108	285.266
45.0	278.898	279.072	279.783	281.303	282.435
45.5	276.153	276.327	277.054	278.599	279.766
46.0	273.242	273.438	274.168	275.710	276.894
46.5	270.361	270.552	271.317	272.860	274.120
47.0	267.410	267.695	268.484	269.995	271.286
47.5	264.485	264.746	265.516	267.094	268.410
48.0	261.570	261.819	262.587	264.234	265.573
48.5	258.531	258.828	259.653	261.260	262.591
49.0	255.578	255.858	256.647	258.349	259.729
49.5	252.579	252.835	253.667	255.310	256.745
50.0	249.662	249.889	250.740	252.393	253.846
50.5	246.555	246.823	247.679	249.389	250.843
51.0	243.509	243.758	244.657	246.321	247.823
51.5	240.352	240.670	241.617	243.330	244.764
52.0	237.299	237.571	238.480	240.264	241.761
52.5	234.140	234.503	235.417	237.158	238.719
53.0	231.048	231.337	232.248	234.015	235.625
53.5	227.970	228.243	229.144	230.926	232.616
54.0	224.718	225.010	225.961	227.769	229.443
54.5	221.624	221.935	222.896	224.720	226.368

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CANDELA TABULATION - (Cont.)

55.0	218.376	218.685	219.682	221.521	223.207
55.5	215.155	215.447	216.478	218.360	220.007
56.0	211.963	212.276	213.304	215.203	216.836
56.5	208.703	208.981	210.023	211.963	213.682
57.0	205.473	205.748	206.774	208.723	210.440
57.5	202.170	202.479	203.531	205.437	207.204
58.0	198.882	199.186	200.265	202.261	204.038
58.5	195.585	195.884	196.969	198.961	200.714
59.0	192.323	192.651	193.775	195.757	197.555
59.5	189.013	189.296	190.412	192.450	194.116
60.0	185.656	185.950	187.115	189.138	190.728
60.5	182.282	182.655	183.829	185.881	187.294
61.0	178.956	179.262	180.450	182.516	183.848
61.5	175.529	175.907	177.107	179.101	180.417
62.0	172.160	172.511	173.731	175.598	176.887
62.5	168.838	169.163	170.385	172.097	173.491
63.0	165.395	165.722	167.018	168.630	170.010
63.5	162.102	162.465	163.694	165.261	166.612
64.0	158.661	159.012	160.296	161.726	163.202
64.5	155.255	155.569	156.891	158.233	159.655
65.0	151.838	152.214	153.565	154.780	156.245
65.5	148.366	148.756	150.121	151.252	152.785
66.0	145.011	145.384	146.757	147.814	149.220
66.5	141.508	141.931	143.282	144.265	145.793
67.0	138.131	138.492	139.913	140.764	142.287
67.5	134.638	135.058	136.412	137.270	138.844
68.0	131.299	131.708	132.961	133.903	135.403
68.5	127.875	128.277	129.413	130.391	131.962
69.0	124.417	124.836	125.857	126.909	128.480
69.5	120.993	121.423	122.423	123.453	125.039
70.0	117.595	117.977	118.860	119.941	121.586
70.5	114.182	114.594	115.380	116.528	118.171
71.0	110.705	111.155	111.860	113.023	114.668
71.5	107.389	107.764	108.398	109.639	111.227
72.0	103.952	104.368	104.892	106.157	107.774
72.5	100.633	100.985	101.542	102.812	104.462
73.0	97.240	97.675	98.067	99.380	101.052
73.5	93.830	94.263	94.650	95.963	97.630
74.0	90.530	90.946	91.223	92.587	94.287
74.5	87.146	87.555	87.797	89.200	90.862
75.0	83.832	84.265	84.444	85.841	87.498
75.5	80.455	80.905	81.060	82.469	84.069
76.0	77.189	77.627	77.686	79.138	80.769
76.5	73.867	74.303	74.341	75.745	77.328
77.0	70.699	71.079	71.067	72.495	74.044
77.5	67.404	67.832	67.829	69.180	70.685
78.0	64.154	64.508	64.527	65.818	67.289
78.5	61.012	61.215	61.299	62.511	63.960
79.0	57.762	57.893	58.073	59.175	60.567
79.5	54.615	54.663	54.907	55.856	57.205
80.0	51.447	51.432	51.674	52.554	53.759
80.5	48.307	48.223	48.496	49.230	50.363
81.0	45.229	45.045	45.284	45.882	46.984
81.5	42.209	41.967	42.156	42.685	43.658
82.0	39.193	38.890	39.033	39.385	40.337
82.5	36.128	35.767	35.860	36.113	37.022

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CANDELA TABULATION - (Cont.)

83.0	33.196	32.773	32.761	32.967	33.787
83.5	30.214	29.769	29.607	29.820	30.556
84.0	27.333	26.842	26.579	26.759	27.450
84.5	24.422	23.908	23.562	23.698	24.363
85.0	21.648	21.063	20.632	20.800	21.350
85.5	18.800	18.191	17.755	17.851	18.315
86.0	16.101	15.477	15.065	15.092	15.474
86.5	13.401	12.736	12.382	12.315	12.564
87.0	10.696	10.130	9.795	9.580	9.702
87.5	8.063	7.774	7.370	6.908	6.937
88.0	5.615	5.538	4.995	4.276	4.029
88.5	3.840	3.515	2.788	1.320	0.911
89.0	2.336	1.793	1.021	0.732	0.624
89.5	1.122	0.856	0.622	0.497	0.454
90.0	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	152.36	N.A.	12.60
0-30	323.77	N.A.	26.80
0-40	531.12	N.A.	43.90
0-60	943.94	N.A.	78.00
0-80	1185.78	N.A.	98.00
0-90	1210.01	N.A.	100.00
10-90	1170.58	N.A.	96.70
20-40	378.76	N.A.	31.30
20-50	594.88	N.A.	49.20
40-70	564.77	N.A.	46.70
60-80	241.84	N.A.	20.00
70-80	89.89	N.A.	7.40
80-90	24.23	N.A.	2.00
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	1210.01	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	39.42
10-20	112.93
20-30	171.41
30-40	207.35
40-50	216.11
50-60	196.71
60-70	151.94
70-80	89.89
80-90	24.23
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	104	99	95	106	101	97	94	97	94	91	93	91	88	90	87	85	83
2	99	90	83	77	96	88	82	76	85	79	75	81	77	73	78	75	71	69
3	90	79	71	64	87	77	70	63	74	68	62	72	66	61	69	64	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	61	56	52	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	43
6	70	56	47	41	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	42	34	29	55	42	34	29	41	33	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	25	24

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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	10.3	11.9	10.6	12.2	12.5	10.4	12.0	10.7	12.3	12.6
	3H	12.1	13.6	12.5	13.9	14.3	12.2	13.8	12.6	14.1	14.4
	4H	12.8	14.2	13.2	14.6	15.0	13.0	14.4	13.4	14.7	15.1
	6H	13.4	14.7	13.8	15.0	15.4	13.5	14.9	14.0	15.2	15.6
	8H	13.6	14.8	14.0	15.2	15.6	13.7	15.0	14.2	15.4	15.8
	12H	13.6	14.9	14.1	15.2	15.7	13.8	15.0	14.2	15.4	15.8
4H	2H	10.9	12.3	11.3	12.7	13.1	11.0	12.4	11.4	12.8	13.1
	3H	13.0	14.2	13.4	14.6	15.0	13.1	14.3	13.5	14.7	15.1
	4H	13.9	14.9	14.3	15.3	15.8	14.0	15.1	14.4	15.5	15.9
	6H	14.5	15.5	15.0	15.9	16.4	14.7	15.6	15.1	16.1	16.5
	8H	14.8	15.6	15.2	16.1	16.5	14.9	15.8	15.4	16.2	16.7
	12H	14.9	15.7	15.4	16.2	16.6	15.1	15.8	15.5	16.3	16.8
8H	4H	14.2	15.1	14.7	15.5	16.0	14.3	15.2	14.8	15.6	16.1
	6H	15.0	15.7	15.5	16.2	16.7	15.1	15.9	15.6	16.3	16.8
	8H	15.3	15.9	15.8	16.4	16.9	15.4	16.1	15.9	16.6	17.1
	12H	15.5	16.1	16.0	16.6	17.1	15.6	16.2	16.1	16.7	17.3
12H	4H	14.2	15.0	14.7	15.5	16.0	14.3	15.1	14.8	15.6	16.1
	6H	15.1	15.7	15.6	16.2	16.7	15.2	15.9	15.7	16.3	16.9
	8H	15.4	16.0	15.9	16.5	17.0	15.5	16.1	16.0	16.6	17.2

Maximum UGR = 17.3

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POLAR GRAPH

Maximum Candela = 417.34 Located At Horizontal Angle = 0, Vertical Angle = 1
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (1) (Through Max. Cd.)

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