IES INDOOR REPORT
PHOTOMETRIC FILENAME : AP-22-L30-835-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN from LLI-20113-1
[TESTLAB] LightLab International (www.LightLabInt.com)
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
[LUMCAT] AP-22-L30-835-DIM-UNV
[LUMINAIRE] RECESSED 2 X 2 ARCHED CENTER LED LUMINAIRE
[MORE] White steel fabricated housing with frosted white concave lens.
[MORE] 180 LEDs with90 mounted along each long side of clear plastic sheet.
[ISSUEDATE] 27-APR-2020
[_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	3341
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	117
Total Luminaire Watts	28.6
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.38
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.55 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	3408	3458	3563
55	3260	3330	3476
65	3044	3139	3325
75	2683	2780	3081
85	1641	1813	2219

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES INDOOR REPORT
PHOTOMETRIC FILENAME : AP-22-L30-835-DIM-UNV_.IES

CANDELA TABULATION

	0.0	22.5	45.0	67.5	90.0
0.0	1169.627	1169.627	1169.627	1169.627	1169.627
0.5	1170.018	1170.498	1168.853	1169.871	1169.651
1.0	1170.132	1170.181	1169.024	1169.171	1168.935
1.5	1169.448	1169.700	1168.910	1169.871	1168.576
2.0	1168.829	1169.008	1168.625	1169.179	1169.545
2.5	1168.527	1168.845	1168.584	1168.625	1168.658
3.0	1168.128	1167.876	1167.892	1168.568	1167.566
3.5	1166.263	1167.208	1166.776	1166.996	1167.550
4.0	1165.921	1166.418	1165.791	1166.312	1166.385
4.5	1165.221	1164.862	1165.090	1165.416	1165.465
5.0	1162.671	1163.885	1163.510	1164.186	1164.072
5.5	1162.117	1162.231	1161.368	1163.282	1163.722
6.0	1159.560	1160.008	1160.953	1162.240	1162.077
6.5	1157.988	1159.316	1159.421	1160.651	1159.983
7.0	1157.410	1156.905	1157.866	1159.430	1159.145
7.5	1154.714	1155.545	1155.984	1157.955	1158.916
8.0	1153.215	1153.573	1154.518	1156.180	1157.100
8.5	1150.878	1151.154	1151.562	1154.372	1155.781
9.0	1147.986	1148.353	1150.348	1152.507	1153.590
9.5	1145.494	1147.017	1147.481	1150.910	1152.067
10.0	1143.319	1144.240	1145.771	1148.735	1149.892
10.5	1140.908	1142.106	1143.735	1146.878	1147.620
11.0	1138.807	1139.271	1140.965	1144.411	1145.860
11.5	1135.240	1136.355	1138.538	1141.324	1142.138
12.0	1132.853	1134.181	1135.052	1139.434	1141.348
12.5	1130.418	1130.450	1132.413	1136.730	1138.082
13.0	1127.942	1127.999	1129.546	1134.710	1136.111
13.5	1124.252	1125.726	1127.771	1131.485	1133.260
14.0	1120.457	1122.420	1123.592	1128.602	1130.312
14.5	1117.557	1118.372	1121.849	1125.335	1128.487
15.0	1113.892	1115.586	1117.940	1122.452	1124.912
15.5	1110.968	1112.157	1115.179	1119.642	1121.727
16.0	1106.928	1108.492	1110.430	1116.686	1119.479
16.5	1103.377	1104.509	1107.425	1112.931	1115.806
17.0	1099.296	1101.129	1103.988	1109.649	1112.524
17.5	1095.745	1098.091	1100.860	1106.008	1109.388
18.0	1092.422	1093.872	1096.430	1102.302	1105.992
18.5	1089.010	1090.215	1092.772	1098.710	1102.294
19.0	1084.717	1085.801	1089.132	1094.988	1099.288
19.5	1079.798	1081.573	1085.092	1090.655	1094.996
20.0	1076.727	1077.216	1080.808	1087.136	1091.616
20.5	1072.557	1073.372	1076.605	1083.178	1086.868
21.0	1067.947	1068.876	1072.696	1079.350	1083.781
21.5	1063.419	1064.372	1068.061	1074.162	1078.185
22.0	1056.919	1059.794	1062.979	1070.057	1074.430
22.5	1053.319	1054.410	1058.418	1065.496	1070.586
23.0	1047.724	1050.265	1054.590	1060.739	1066.774
23.5	1043.334	1045.467	1050.077	1056.691	1061.716
24.0	1039.155	1040.475	1044.930	1052.448	1057.058
24.5	1033.625	1035.417	1039.750	1046.819	1052.399
25.0	1028.836	1029.528	1034.928	1043.073	1047.952
25.5	1023.387	1025.138	1029.919	1037.388	1042.332
26.0	1018.003	1019.754	1024.275	1032.550	1037.429
26.5	1012.163	1014.509	1019.730	1028.176	1033.674

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

CANDELA TABULATION - (Cont.)

27.0	1006.641	1008.620	1014.305	1022.589	1028.420
27.5	1002.113	1003.554	1008.938	1017.661	1024.014
28.0	995.157	997.275	1003.685	1011.341	1018.305
28.5	990.498	992.347	997.666	1006.152	1012.994
29.0	984.943	986.295	992.111	1000.370	1007.390
29.5	979.266	980.496	986.206	995.287	1001.714
30.0	972.311	975.113	980.252	989.684	996.362
30.5	967.163	968.931	973.964	983.591	991.019
31.0	960.281	963.132	968.980	978.037	984.748
31.5	954.466	956.526	962.431	972.042	980.008
32.0	947.697	950.393	956.200	966.300	973.337
32.5	942.525	944.301	950.613	960.151	967.245
33.0	935.651	938.070	944.252	953.399	961.600
33.5	928.492	931.831	937.801	948.235	955.337
34.0	923.189	924.957	931.163	941.507	948.984
34.5	916.128	918.148	924.989	934.706	943.323
35.0	909.017	911.884	917.920	928.516	936.091
35.5	902.893	904.766	912.023	922.090	930.585
36.0	894.976	897.835	904.750	915.322	923.963
36.5	889.600	891.286	898.405	908.488	917.056
37.0	881.643	884.844	891.311	901.492	910.801
37.5	874.532	877.065	884.265	894.837	903.251
38.0	867.047	870.069	876.740	888.028	897.094
38.5	861.020	862.959	870.134	880.665	890.488
39.0	853.291	855.270	862.535	873.734	884.029
39.5	846.327	848.208	855.294	867.235	876.723
40.0	838.101	841.065	847.899	859.570	869.914
40.5	831.512	833.360	841.163	851.874	862.682
41.0	824.238	825.541	834.012	845.350	855.612
41.5	815.825	819.042	826.030	838.060	848.290
42.0	808.120	811.149	818.724	830.355	840.243
42.5	800.700	803.143	810.563	823.310	833.540
43.0	792.376	795.169	803.616	815.206	826.193
43.5	785.705	787.896	795.658	807.981	818.814
44.0	777.332	780.069	787.969	800.073	810.799
44.5	769.139	772.136	780.305	791.846	803.176
45.0	761.222	764.040	772.282	784.003	795.805
45.5	753.533	756.449	764.398	776.330	787.635
46.0	745.926	748.263	756.473	768.625	779.588
46.5	737.056	740.102	747.457	760.367	772.356
47.0	729.131	731.493	740.339	752.776	764.007
47.5	720.392	723.739	731.607	744.444	756.164
48.0	711.897	715.196	723.226	736.470	748.467
48.5	703.434	706.806	715.171	727.844	739.320
49.0	694.972	698.523	706.888	719.895	731.526
49.5	686.990	690.183	698.442	711.245	724.196
50.0	678.878	681.834	689.873	703.426	715.196
50.5	669.894	672.843	681.199	694.760	706.562
51.0	661.285	664.331	672.777	686.192	698.596
51.5	652.888	656.276	664.160	678.006	689.963
52.0	644.393	647.178	655.722	669.405	682.185
52.5	635.181	638.569	647.219	660.348	672.753
53.0	626.800	629.341	638.040	652.081	664.282
53.5	617.466	620.618	629.781	643.090	655.893
54.0	609.134	611.618	620.203	634.415	647.243
54.5	600.468	603.359	611.805	625.839	639.066

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

CANDELA TABULATION - (Cont.)

55.0	590.572	594.449	603.261	617.271	629.838
55.5	581.938	585.221	594.058	608.238	620.732
56.0	573.468	576.066	585.180	599.181	612.351
56.5	563.898	567.196	575.634	590.197	603.547
57.0	554.718	558.424	567.001	581.213	594.546
57.5	545.775	549.017	557.683	572.425	585.270
58.0	536.784	539.822	548.846	563.376	577.068
58.5	527.726	530.422	539.593	553.855	567.115
59.0	518.702	521.390	530.260	545.287	558.612
59.5	509.474	512.333	521.675	536.189	549.155
60.0	499.782	502.926	511.934	526.733	539.610
60.5	490.440	493.917	503.007	517.684	530.251
61.0	481.366	484.274	493.632	508.554	520.698
61.5	472.106	475.331	484.372	499.040	511.347
62.0	461.973	465.459	475.030	488.892	501.916
62.5	453.356	456.305	465.582	479.705	491.849
63.0	443.672	446.979	456.068	470.110	482.197
63.5	434.697	437.620	447.240	461.045	473.156
64.0	425.118	428.173	437.629	450.986	463.578
64.5	415.744	418.839	428.409	441.424	454.049
65.0	406.312	409.382	419.050	431.968	443.916
65.5	396.782	399.763	409.358	421.925	434.444
66.0	387.383	390.144	400.317	412.453	424.524
66.5	377.829	380.965	390.617	402.704	415.247
67.0	368.544	371.534	381.047	393.215	405.725
67.5	358.974	362.208	371.542	383.205	395.854
68.0	349.844	352.841	362.167	373.839	386.544
68.5	340.591	343.336	352.214	364.089	376.632
69.0	330.858	333.929	342.400	354.218	367.152
69.5	321.223	324.310	332.618	344.819	357.386
70.0	312.117	314.846	322.909	335.045	347.457
70.5	302.571	305.528	313.388	325.629	338.221
71.0	293.286	295.942	303.573	315.619	328.244
71.5	283.969	286.575	293.832	306.123	318.535
72.0	274.488	277.298	284.229	296.422	309.006
72.5	265.529	267.964	274.757	287.088	299.607
73.0	256.179	258.769	265.203	277.559	289.898
73.5	246.910	249.337	255.665	267.761	280.320
74.0	237.722	240.036	246.299	258.296	270.750
74.5	228.405	230.865	236.802	248.816	261.025
75.0	219.372	221.449	227.313	239.278	251.854
75.5	209.932	212.376	217.922	229.610	241.974
76.0	200.998	203.197	208.646	220.317	232.689
76.5	191.566	194.066	199.230	210.836	223.135
77.0	182.949	185.099	190.238	201.486	213.679
77.5	173.981	176.123	181.075	192.315	203.946
78.0	164.949	166.920	171.750	182.810	194.343
78.5	156.055	157.920	162.578	173.688	184.521
79.0	147.006	148.651	153.367	164.207	175.024
79.5	138.454	139.757	144.220	154.719	165.266
80.0	129.502	130.488	135.065	145.263	155.281
80.5	120.942	121.781	126.204	135.986	145.588
81.0	112.130	112.830	117.114	126.399	135.961
81.5	103.806	104.140	108.383	117.350	126.220
82.0	95.042	95.343	99.587	108.008	116.674
82.5	86.677	86.612	90.758	98.805	107.194

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

CANDELA TABULATION - (Cont.)

83.0	78.206	77.995	82.246	89.927	97.689
83.5	69.793	69.369	73.857	81.155	88.461
84.0	61.420	60.988	65.501	72.375	79.176
84.5	53.259	52.852	57.502	63.831	70.102
85.0	45.187	45.008	49.903	55.702	61.078
85.5	38.297	37.499	42.345	47.240	51.923
86.0	32.441	31.423	35.642	39.502	43.420
86.5	26.878	25.795	28.808	31.569	34.396
87.0	21.934	20.533	22.415	23.848	25.681
87.5	17.381	15.679	16.461	16.648	17.536
88.0	13.097	11.435	10.971	10.067	9.635
88.5	9.627	7.925	6.353	3.885	2.329
89.0	6.141	5.091	3.738	2.509	1.645
89.5	2.794	2.476	2.036	1.596	1.157
90.0	0.000	0.000	0.000	0.000	0.000

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES INDOOR REPORT
PHOTOMETRIC FILENAME : AP-22-L30-835-DIM-UNV_.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	426.29	N.A.	12.80
0-30	903.94	N.A.	27.10
0-40	1479.57	N.A.	44.30
0-60	2618.66	N.A.	78.40
0-80	3279.31	N.A.	98.20
0-90	3340.92	N.A.	100.00
10-90	3230.39	N.A.	96.70
20-40	1053.29	N.A.	31.50
20-50	1650.78	N.A.	49.40
40-70	1555.78	N.A.	46.60
60-80	660.65	N.A.	19.80
70-80	243.96	N.A.	7.30
80-90	61.61	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	3340.92	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	110.54
10-20	315.75
20-30	477.66
30-40	575.63
40-50	597.49
50-60	541.59
60-70	416.69
70-80	243.96
80-90	61.61
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

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES INDOOR REPORT
PHOTOMETRIC FILENAME : AP-22-L30-835-DIM-UNV_.IES

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	97	97	97	97	95	95	95	95	90	90	90	87	87	87	83	83	83	81
1	88	85	81	78	86	83	79	77	79	77	74	76	74	72	73	71	70	68
2	80	74	68	63	78	72	67	62	69	65	61	66	63	60	64	61	58	56
3	73	64	58	52	71	63	57	52	61	55	51	58	54	50	56	53	49	47
4	67	57	50	44	65	56	49	44	54	48	43	52	47	43	50	46	42	40
5	62	51	44	38	60	50	43	38	48	42	37	47	41	37	45	40	37	35
6	57	46	38	33	55	45	38	33	44	37	33	42	37	32	41	36	32	30
7	53	42	34	29	51	41	34	29	40	33	29	38	33	29	37	32	29	27
8	49	38	31	26	48	37	31	26	36	30	26	35	30	26	34	29	26	24
9	46	35	28	23	45	34	28	23	33	27	23	32	27	23	32	27	23	22
10	43	32	26	21	42	32	25	21	31	25	21	30	25	21	29	24	21	19

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES INDOOR REPORT
PHOTOMETRIC FILENAME : AP-22-L30-835-DIM-UNV_.IES

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	16.9	18.6	17.3	18.9	19.2	17.2	18.9	17.6	19.2	19.5
	3H	18.7	20.2	19.1	20.6	20.9	19.2	20.7	19.5	21.0	21.3
	4H	19.4	20.8	19.8	21.2	21.5	19.9	21.3	20.3	21.7	22.0
	6H	19.9	21.2	20.3	21.6	22.0	20.5	21.8	20.9	22.2	22.5
	8H	20.1	21.3	20.5	21.7	22.1	20.7	21.9	21.1	22.3	22.7
	12H	20.1	21.3	20.6	21.7	22.1	20.8	22.0	21.2	22.4	22.8
4H	2H	17.6	19.0	18.0	19.3	19.7	17.8	19.3	18.2	19.6	20.0
	3H	19.6	20.8	20.0	21.2	21.6	20.0	21.2	20.4	21.6	22.0
	4H	20.4	21.5	20.9	21.9	22.4	20.9	21.9	21.3	22.3	22.8
	6H	21.1	22.0	21.5	22.4	22.9	21.6	22.5	22.0	23.0	23.4
	8H	21.2	22.1	21.7	22.6	23.0	21.8	22.7	22.3	23.1	23.6
	12H	21.3	22.1	21.8	22.6	23.1	22.0	22.8	22.4	23.2	23.7
8H	4H	20.8	21.7	21.2	22.1	22.6	21.2	22.0	21.6	22.5	22.9
	6H	21.5	22.2	22.0	22.7	23.2	22.0	22.7	22.5	23.2	23.7
	8H	21.8	22.4	22.3	22.9	23.4	22.3	22.9	22.8	23.4	23.9
	12H	21.9	22.5	22.4	23.0	23.5	22.5	23.1	23.0	23.6	24.1
12H	4H	20.8	21.6	21.3	22.1	22.6	21.2	22.0	21.7	22.5	22.9
	6H	21.6	22.2	22.1	22.7	23.2	22.0	22.7	22.6	23.2	23.7
	8H	21.9	22.5	22.4	22.9	23.5	22.4	23.0	22.9	23.5	24.0

Maximum UGR = 24.1

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES INDOOR REPORT
PHOTOMETRIC FILENAME : AP-22-L30-835-DIM-UNV_.IES

POLAR GRAPH

Maximum Candela = 1170.498 Located At Horizontal Angle = 22.5, Vertical Angle = .5
1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (.5) (Through Max. Cd.)
3 - Horizontal Cone Through Vertical Angle (0)

Photometric Toolbox® Copyright 2002-2019 by Lighting Analysts, Inc.
Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.