

Family Correlated Photometric Data

The following photometric information is developed using correlated data. Finelite considers a family to be a group of luminaires where critical performance metrics such as photometric performance, thermal performance, and electrical performance can be accurately projected via a combination of LM79 tests at the luminaire level and well-documented specifications at the component level.

For more information, please download [Finelite's Family Correlated White Paper](#)

Additional links:

- [Solid-State Lighting: Early Lessons Learned on the Way to Market](#)
(U.S. Department of Energy)
- [Lighting Facts®](#)
- [Design Lights Consortium®](#)

IES INDOOR REPORT
PHOTOMETRIC FILENAME : HP-WS-4W-2D-4FT-H-8-35-ITL86712.003.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]ITL86712.003 Family Correlation File
[TESTLAB]INDEPENDENT TESTING LABORATORIES, INC.
[TESTDATE]02/10/16
[ISSUE DATE]03/30/16
[MANUFAC]FINELITE, INC.
[LUMCAT]HP-WS-4W-2D-4ft-H-8-35
[OTHER]INPUT ELECTRICAL: 120.0 VOLTS, 28.3 WATTS
[OTHER]INPUT ELECTRICAL: 277.0 VOLTS, 29.2 WATTS
[ABSOLUTE LUMENS]2409
[OTHER]see www.finelite.com for source file ITL86712. For further details on Finelite family correlation files, go to
[more]http://www.finelite.com/download_files/series_downloads/photometry_pdf/FL_Family_Correlation_WhitePaper.pdf

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2409
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	85
Total Luminaire Watts	28.3
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.54
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.24
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.32 ft
Luminous Width (90-270)	4.00 ft
Luminous Height	0.19 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	6562	6416	6422
55	5894	5873	5863
65	4981	5067	5208
75	3985	4047	4326
85	2803	2775	2492

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CANDELA TABULATION

	<u>0.0</u>	<u>5.0</u>	<u>15.0</u>	<u>25.0</u>	<u>35.0</u>	<u>45.0</u>	<u>55.0</u>	<u>65.0</u>	<u>75.0</u>	<u>85.0</u>
0.0	960.645	960.645	960.645	960.645	960.645	960.645	960.645	960.645	960.645	960.645
2.5	978.535	976.980	976.202	975.424	973.868	971.535	969.201	966.090	963.756	962.200
5.0	995.648	995.648	994.870	992.537	989.425	983.202	976.980	970.757	963.756	958.311
7.5	1009.649	1008.871	1008.094	1003.426	997.982	990.981	983.202	972.312	961.423	952.088
10.0	1023.651	1021.317	1019.761	1014.316	1006.538	995.648	983.980	970.757	955.200	941.976
12.5	1031.429	1029.096	1028.318	1022.095	1011.983	997.204	982.425	964.534	946.643	931.086
15.0	1036.874	1034.540	1033.763	1025.984	1013.539	996.426	979.313	955.200	934.976	916.307
17.5	1039.208	1037.652	1035.318	1026.762	1012.761	993.314	972.312	944.310	921.752	899.195
20.0	1038.430	1036.874	1033.763	1024.428	1008.871	987.092	962.978	931.086	905.417	881.304
22.5	1034.540	1033.763	1029.873	1018.206	1001.871	976.980	949.755	915.529	885.971	859.524
25.0	1029.096	1026.762	1022.873	1009.649	990.981	965.312	934.976	898.417	864.969	836.189
27.5	1019.761	1018.206	1013.539	998.759	979.313	951.311	917.863	878.970	843.189	810.520
30.0	1009.649	1006.538	1001.093	985.536	964.534	934.198	898.417	857.969	819.076	784.073
32.5	995.648	993.314	987.092	970.757	947.421	915.529	878.193	834.633	793.407	755.292
35.0	978.535	978.535	969.979	952.866	927.975	894.527	855.635	809.742	766.182	727.290
37.5	960.645	960.645	951.311	932.642	906.973	871.970	830.744	784.073	737.402	696.954
40.0	941.198	939.643	929.531	910.862	883.638	847.856	803.519	755.292	707.843	664.284
42.5	917.863	917.863	906.973	886.749	859.524	822.187	777.072	727.290	677.507	631.614
45.0	889.860	889.860	879.748	860.302	832.299	793.407	747.514	696.954	645.615	597.389
47.5	864.191	861.858	851.746	832.299	803.519	764.627	717.956	666.617	614.501	563.941
50.0	831.522	829.188	819.854	800.408	772.405	733.513	686.064	633.948	581.054	528.938
52.5	793.407	793.407	784.073	766.960	739.735	701.621	654.172	602.056	548.384	494.713
55.0	752.181	752.181	744.402	728.845	704.732	668.173	621.502	568.608	514.159	460.487
57.5	708.621	710.177	702.399	687.619	667.395	633.170	587.277	535.161	479.933	427.040
60.0	665.840	666.617	658.839	644.060	624.614	595.055	553.051	500.935	445.708	391.259
62.5	621.502	622.280	614.501	599.722	580.276	553.051	515.715	465.154	411.483	356.255
65.0	576.387	577.943	570.164	557.718	535.939	508.714	477.600	430.929	376.479	322.030
67.5	532.827	534.383	526.604	513.381	492.379	465.932	437.152	395.148	343.032	288.582
70.0	489.268	490.045	481.489	469.044	448.042	422.373	394.370	358.589	307.251	254.357
72.5	444.930	445.708	439.485	425.484	406.038	379.591	352.366	318.141	273.803	221.687
75.0	399.815	399.037	395.148	381.924	363.256	339.920	311.140	277.692	237.244	189.018
77.5	356.255	356.255	351.588	338.365	321.252	298.694	269.914	238.800	203.797	156.348
80.0	314.251	313.474	308.806	297.139	280.026	258.246	231.021	201.463	166.460	124.456
82.5	272.247	271.470	266.803	255.135	239.578	219.354	193.685	165.682	132.234	92.564
85.0	229.466	228.688	225.576	213.909	199.130	180.461	157.904	130.679	98.787	59.894
87.5	186.684	189.018	183.573	175.016	158.681	140.791	120.567	96.453	69.229	28.780
90.0	146.236	147.014	143.124	134.568	119.011	102.676	83.230	61.450	39.670	14.001
92.5	120.567	120.567	116.677	108.899	93.342	77.785	59.117	38.892	19.446	4.667
95.0	91.008	91.008	87.119	80.119	66.895	52.894	36.559	18.668	8.556	1.556
97.5	65.339	66.117	61.450	55.227	43.560	31.114	17.113	10.890	5.445	0.778
100.0	42.004	42.004	38.115	32.670	22.558	15.557	11.668	7.778	2.334	0.778
102.5	21.780	21.002	17.891	16.335	14.779	12.446	9.334	5.445	1.556	0.000
105.0	14.779	14.001	14.001	13.223	11.668	10.112	7.001	2.334	0.778	0.000
107.5	11.668	11.668	11.668	10.890	10.112	7.778	5.445	1.556	0.778	0.000
110.0	10.112	10.112	9.334	9.334	8.556	6.223	1.556	1.556	0.778	0.000
112.5	8.556	8.556	8.556	7.778	7.001	3.889	1.556	0.778	0.000	0.000
115.0	7.001	7.001	7.001	6.223	5.445	1.556	0.778	0.778	0.000	0.000
117.5	5.445	5.445	5.445	5.445	0.778	0.778	0.778	0.000	0.000	0.000
120.0	4.667	3.889	2.334	0.778	0.778	0.778	0.778	0.000	0.000	0.000
122.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
127.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
132.5	0.000	0.000	0.000	0.000	0.000	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	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
152.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
157.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
162.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
167.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Vert. Angles **Horizontal Angles**

	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>
0.0	960.645	960.645	960.645	960.645	960.645
2.5	960.645	957.533	954.422	948.977	948.977
5.0	955.978	948.199	931.864	911.640	908.529
7.5	948.199	931.086	893.750	873.526	867.303
10.0	938.865	906.973	861.858	829.966	817.520
12.5	927.197	875.081	822.965	780.184	763.071
15.0	911.640	843.967	779.406	724.956	702.399
17.5	892.972	813.631	733.513	667.395	644.060
20.0	872.748	780.184	682.952	609.057	576.387
22.5	849.412	742.847	632.392	549.940	516.492
25.0	824.521	705.510	580.276	491.601	455.820
27.5	797.296	665.840	531.272	434.818	397.481
30.0	769.294	624.614	479.933	378.813	339.920
32.5	738.957	583.387	430.151	323.586	284.693
35.0	707.066	542.939	380.369	270.692	231.021
37.5	675.174	500.935	331.364	220.132	180.461
40.0	640.948	458.154	283.137	171.127	132.234
42.5	607.501	416.928	237.244	125.234	87.119
45.0	571.720	374.924	192.907	81.674	46.671
47.5	537.494	334.475	150.125	42.782	12.446
50.0	501.713	294.027	109.677	10.890	3.889
52.5	466.710	255.135	72.340	4.667	2.334
55.0	431.707	216.242	38.115	3.111	1.556
57.5	395.926	178.905	10.112	2.334	0.778
60.0	360.922	143.124	4.667	1.556	0.000
62.5	325.919	108.121	3.889	0.778	0.000
65.0	291.694	75.451	2.334	0.778	0.000
67.5	257.468	45.115	2.334	0.778	0.000
70.0	224.021	17.891	1.556	0.778	0.000
72.5	190.573	5.445	1.556	0.778	0.000
75.0	158.681	3.889	1.556	0.778	0.000
77.5	128.345	3.111	0.778	0.778	0.000
80.0	98.787	2.334	0.778	0.778	0.000

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CANDELA TABULATION - (Cont.)

82.5	69.229	1.556	0.778	0.778	0.000
85.0	40.448	0.778	0.778	0.000	0.000
87.5	14.001	0.778	0.778	0.000	0.000
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
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	340.32	N.A.	14.10
0-30	698.00	N.A.	29.00
0-40	1101.56	N.A.	45.70
0-60	1831.36	N.A.	76.00
0-80	2279.83	N.A.	94.60
0-90	2373.68	N.A.	98.50
10-90	2283.32	N.A.	94.80
20-40	761.24	N.A.	31.60
20-50	1151.58	N.A.	47.80
40-70	997.10	N.A.	41.40
60-80	448.47	N.A.	18.60
70-80	181.17	N.A.	7.50
80-90	93.85	N.A.	3.90
90-110	33.59	N.A.	1.40
90-120	35.17	N.A.	1.50
90-130	35.24	N.A.	1.50
90-150	35.24	N.A.	1.50
90-180	35.24	N.A.	1.50
110-180	1.65	N.A.	0.10
0-180	2408.91	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	90.36
10-20	249.97
20-30	357.67
30-40	403.56
40-50	390.34
50-60	339.46
60-70	267.30
70-80	181.17
80-90	93.85
90-100	28.53
100-110	5.06
110-120	1.59
120-130	0.06
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

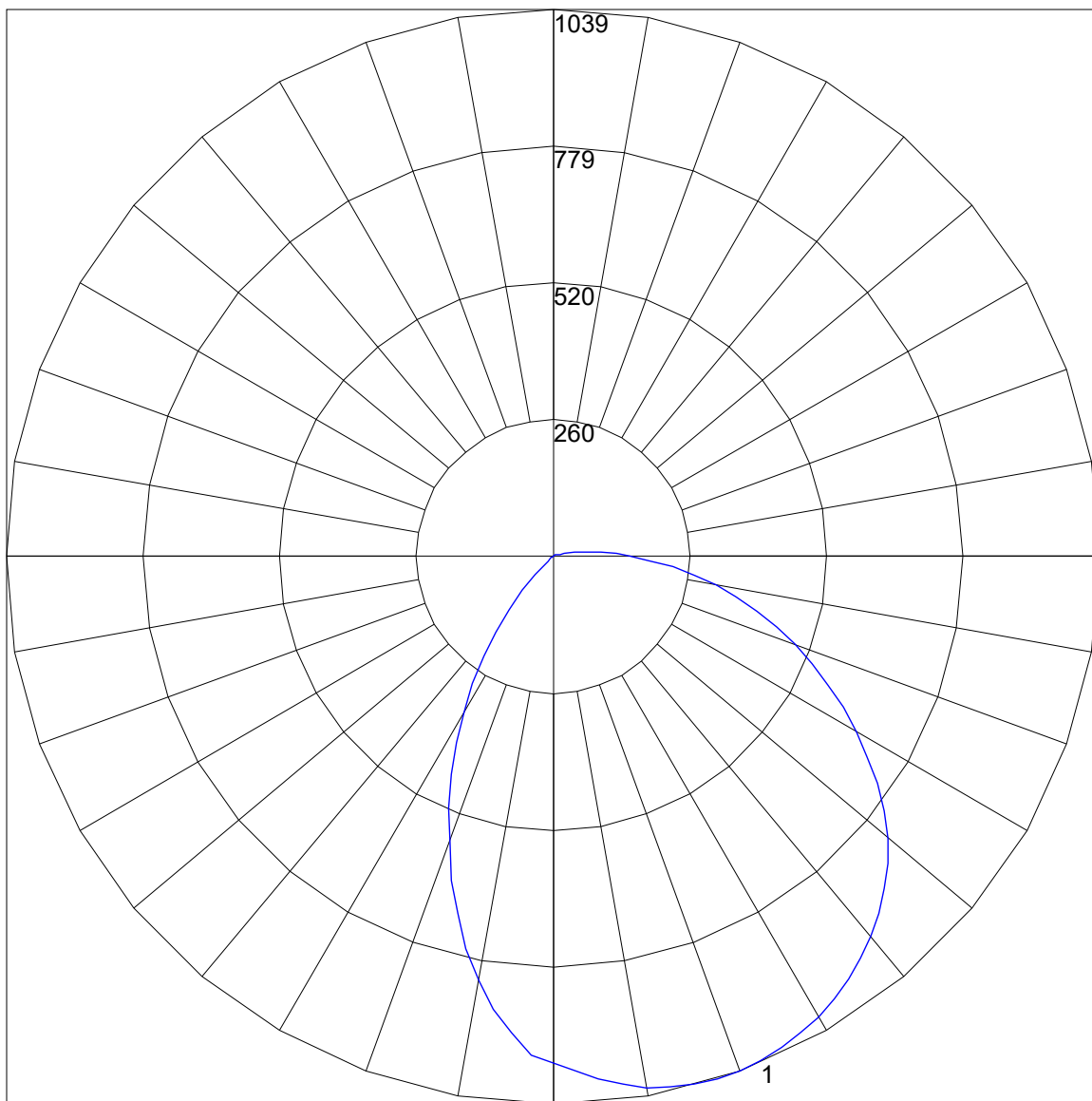
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	110	110	110	105	105	105	101	101	101	99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	88	85	83	81
2	98	89	82	77	95	87	81	76	84	78	74	80	76	72	77	73	70	68
3	89	79	71	64	87	77	69	63	74	67	62	71	65	61	68	63	59	57
4	82	70	61	54	80	69	60	54	66	59	53	63	57	52	61	56	51	49
5	76	63	54	47	73	62	53	47	59	52	46	57	51	46	55	50	45	43
6	70	57	48	41	68	56	47	41	54	46	41	52	45	40	50	44	40	38
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	46	40	36	34
8	61	47	39	33	59	47	38	33	45	38	33	44	37	32	42	36	32	30
9	57	44	35	30	55	43	35	30	42	35	30	40	34	29	39	33	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

POLAR GRAPH



Maximum Candela = 1039.208 Located At Horizontal Angle = 0, Vertical Angle = 17.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)