

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-4D-4ft-B-8-TW-ITL86713.902.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST]ITL86713.902 Family Correlation File

[TESTLAB]INDEPENDENT TESTING LABORATORIES, INC.

[TESTDATE]02/11/16

[ISSUEDATE]03/30/31

[MANUFAC]FINELITE, INC.

[LUMCAT]HP-WS-4W-4D-4ft-B-8-TW

[OTHER]ies file is based on 3500K; see luminaire tech sheet at www.finelite.com for lumen adjustment factors for other CCT's & CRI

[OTHER]INPUT ELECTRICAL: 120.0 VOLTS, 20.3 WATTS

[OTHER]INPUT ELECTRICAL: 277.0 VOLTS, 21.7 WATTS

[ABSOLUTE]LUMENS]1573

[OTHER]see www.finelite.com for source file ITL86713. 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	1573
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	77
Total Luminaire Watts	20.3
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.60
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.08
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.32 ft
Luminous Width (90-270)	4.00 ft
Luminous Height	0.36 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3514	3573	4143
55	3027	3124	3721
65	2473	2582	3239
75	1925	1975	2579
85	1344	1335	1286

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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	641.347	641.347	641.347	641.347	641.347	641.347	641.347	641.347	641.347	641.347
2.5	656.274	655.760	654.730	653.701	651.127	649.583	647.009	644.951	642.892	641.347
5.0	676.349	675.319	673.775	671.202	667.084	661.936	656.274	649.583	642.377	639.289
7.5	691.276	689.732	688.702	685.099	679.437	673.260	664.510	654.216	642.892	635.171
10.0	705.173	702.600	701.570	696.423	690.246	680.467	669.657	656.274	640.833	628.479
12.5	714.438	712.380	711.350	705.688	697.452	685.614	671.716	655.245	637.230	620.758
15.0	721.130	719.071	718.556	711.350	702.600	688.187	672.231	651.642	631.568	612.008
17.5	724.218	723.703	721.645	714.953	704.144	688.187	670.687	646.495	624.362	601.714
20.0	725.248	724.218	722.159	714.953	703.629	685.614	666.054	639.803	614.582	589.360
22.5	724.218	722.674	720.615	712.380	699.511	681.496	659.878	631.568	604.287	575.977
25.0	721.130	719.586	716.497	707.232	693.849	674.805	651.642	621.273	591.419	561.565
27.5	714.953	714.438	710.321	700.541	686.129	666.054	641.862	609.435	577.522	546.638
30.0	707.747	706.718	702.085	691.791	676.349	655.245	629.509	596.566	562.595	530.167
32.5	698.482	697.452	692.820	681.496	665.025	642.892	615.611	582.669	547.153	511.637
35.0	687.673	687.158	681.496	669.657	652.671	628.994	601.199	566.712	529.137	492.592
37.5	676.349	674.805	668.628	656.789	638.259	614.067	584.728	550.241	512.666	471.488
40.0	661.422	660.392	653.701	641.347	622.303	597.081	566.712	531.711	492.077	450.384
42.5	645.980	645.465	638.774	624.876	605.831	579.580	548.182	512.666	472.518	429.795
45.0	630.538	628.479	621.273	607.376	587.301	561.565	528.623	492.077	451.929	408.177
47.5	610.979	609.949	602.228	588.331	568.771	541.491	508.034	472.003	430.310	385.529
50.0	589.875	588.846	581.639	567.742	548.697	520.387	486.930	449.870	409.206	362.366
52.5	566.198	565.168	559.506	545.094	527.078	498.769	464.797	427.222	386.559	340.233
55.0	539.947	538.402	532.226	520.902	502.372	476.635	442.664	404.574	364.425	317.071
57.5	511.637	510.607	505.975	493.621	476.635	452.443	418.986	381.926	340.748	293.908
60.0	483.842	482.297	476.635	465.311	448.840	427.222	395.824	359.793	318.100	269.716
62.5	454.502	452.443	447.296	435.972	419.501	399.427	370.602	335.086	294.423	246.553
65.0	425.163	423.619	417.957	406.633	390.162	370.087	344.351	310.379	270.231	223.391
67.5	395.824	394.794	388.617	377.293	361.852	341.263	316.556	286.187	247.068	200.743
70.0	366.484	365.455	360.822	347.954	333.027	311.923	287.731	259.936	222.361	178.095
72.5	337.660	336.115	330.968	319.130	304.203	284.128	258.907	232.656	198.169	155.447
75.0	308.320	306.261	302.144	290.820	276.407	256.333	231.112	205.375	173.462	132.799
77.5	279.496	278.981	272.804	261.995	248.097	229.053	205.375	178.610	148.756	110.666
80.0	251.701	250.156	244.494	234.200	220.302	202.287	177.580	152.873	123.019	89.047
82.5	223.391	221.847	216.185	206.919	194.051	176.036	152.359	128.167	99.342	66.914
85.0	193.022	194.566	188.904	179.639	165.741	149.785	127.137	104.489	76.694	44.781
87.5	165.227	166.256	161.109	151.844	138.976	123.534	103.460	80.812	56.105	23.677
90.0	136.402	137.432	132.799	124.049	111.181	96.768	77.723	56.620	35.001	11.839
92.5	120.446	118.901	115.298	106.548	95.224	80.297	62.282	41.178	21.618	4.633
95.0	101.401	99.857	96.254	88.018	77.209	62.796	46.325	27.795	13.383	1.544
97.5	83.385	82.356	79.268	71.032	61.252	48.384	32.942	21.618	10.809	1.029
100.0	67.429	66.400	63.311	56.105	46.840	36.545	28.310	19.045	7.721	0.515
102.5	53.017	51.987	49.414	44.266	39.634	33.972	26.251	17.501	4.118	0.000
105.0	46.325	45.811	44.266	41.693	37.575	31.913	24.707	14.412	2.059	0.000
107.5	44.266	43.752	42.722	40.149	36.031	30.369	23.163	10.295	1.029	0.000
110.0	42.207	42.207	40.663	38.604	34.487	28.825	19.560	6.691	0.515	0.000
112.5	40.663	40.663	39.119	37.060	32.942	27.280	14.927	3.603	0.515	0.000
115.0	39.119	39.119	38.090	35.516	31.913	21.618	10.295	1.544	0.515	0.000
117.5	38.090	38.090	36.545	33.972	26.766	16.986	7.206	1.029	0.515	0.000
120.0	36.545	36.031	33.972	28.310	21.104	12.353	4.118	0.515	0.515	0.000
122.5	30.369	30.369	27.795	22.648	15.956	8.236	1.544	0.515	0.000	0.000
125.0	24.192	23.677	21.618	17.501	11.324	4.633	0.515	0.515	0.000	0.000
127.5	18.530	18.015	16.471	12.353	7.206	2.059	0.515	0.515	0.000	0.000
130.0	13.383	12.868	11.324	8.236	3.603	0.515	0.515	0.515	0.000	0.000
132.5	8.750	8.750	7.206	4.118	0.515	0.000	0.000	0.000	0.000	0.000

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CANDELA TABULATION - (Cont.)

135.0	4.633	4.633	3.603	1.029	0.000	0.000	0.000	0.000	0.000	0.000
137.5	1.029	1.029	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. Horizontal Angles

	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>
0.0	641.347	641.347	641.347	641.347	641.347
2.5	640.833	635.171	624.876	615.096	610.979
5.0	637.744	617.670	586.787	565.168	557.447
7.5	632.082	593.478	543.550	506.489	495.680
10.0	626.420	567.742	496.195	445.237	429.281
12.5	618.185	538.402	447.296	387.073	363.396
15.0	608.405	507.004	397.368	326.336	299.055
17.5	596.052	473.547	347.954	266.113	235.744
20.0	582.154	439.061	298.026	207.949	175.007
22.5	566.712	404.574	250.156	153.388	118.387
25.0	550.241	370.087	203.316	101.916	66.400
27.5	533.255	335.086	158.535	56.105	26.766
30.0	514.210	300.599	115.813	18.015	8.750
32.5	493.621	266.628	76.694	8.750	5.662
35.0	473.032	233.170	41.178	5.662	3.603
37.5	451.414	200.743	14.412	4.118	2.059
40.0	429.281	169.345	9.265	2.574	1.029
42.5	406.118	138.461	6.691	1.544	0.000
45.0	383.470	109.122	4.633	1.029	0.000
47.5	359.278	81.327	3.088	0.515	0.000
50.0	336.115	55.076	2.059	0.515	0.000
52.5	312.953	30.884	1.029	0.515	0.000
55.0	289.276	13.383	0.515	0.000	0.000
57.5	265.598	9.265	0.515	0.000	0.000
60.0	242.436	6.177	0.515	0.000	0.000
62.5	218.758	4.118	0.515	0.000	0.000
65.0	196.110	2.574	0.000	0.000	0.000
67.5	173.462	1.544	0.000	0.000	0.000
70.0	150.814	0.515	0.000	0.000	0.000
72.5	128.681	0.515	0.000	0.000	0.000
75.0	107.063	0.515	0.000	0.000	0.000
77.5	85.959	0.515	0.000	0.000	0.000
80.0	65.885	0.515	0.000	0.000	0.000

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CANDELA TABULATION - (Cont.)

82.5	46.325	0.515	0.000	0.000	0.000
85.0	27.280	0.515	0.000	0.000	0.000
87.5	9.265	0.000	0.000	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	212.89	N.A.	13.50
0-30	421.38	N.A.	26.80
0-40	653.82	N.A.	41.60
0-60	1114.48	N.A.	70.90
0-80	1434.95	N.A.	91.20
0-90	1511.46	N.A.	96.10
10-90	1452.82	N.A.	92.40
20-40	440.94	N.A.	28.00
20-50	679.79	N.A.	43.20
40-70	646.57	N.A.	41.10
60-80	320.47	N.A.	20.40
70-80	134.56	N.A.	8.60
80-90	76.51	N.A.	4.90
90-110	46.95	N.A.	3.00
90-120	56.77	N.A.	3.60
90-130	60.95	N.A.	3.90
90-150	61.51	N.A.	3.90
90-180	61.51	N.A.	3.90
110-180	14.55	N.A.	0.90
0-180	1572.96	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	58.64
10-20	154.25
20-30	208.50
30-40	232.44
40-50	238.85
50-60	221.81
60-70	185.91
70-80	134.56
80-90	76.51
90-100	32.15
100-110	14.80
110-120	9.82
120-130	4.18
130-140	0.56
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

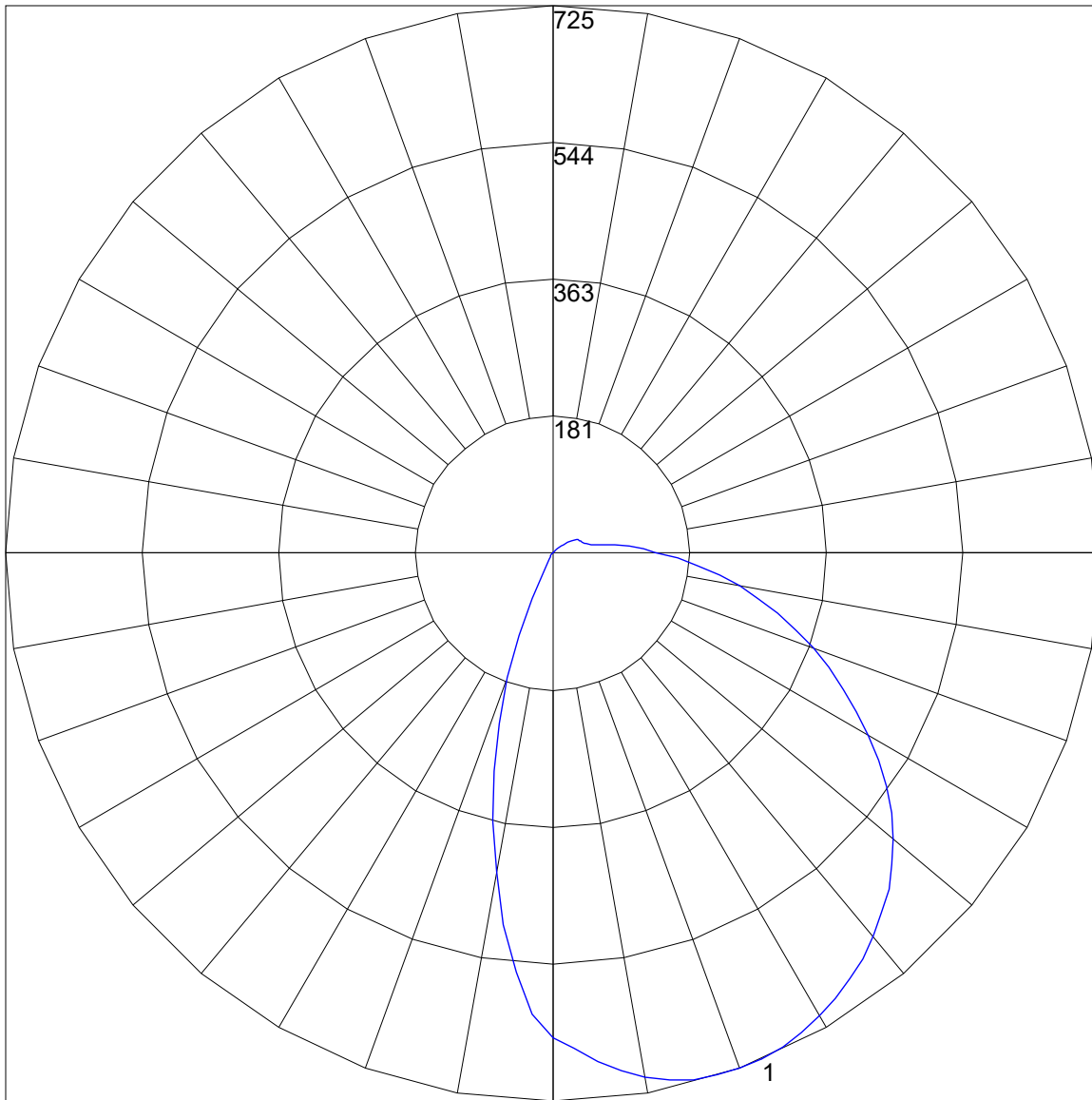
Effective Floor Cavity Reflectance 0.20

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	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	96
1	106	101	96	92	103	98	94	90	93	90	86	89	86	83	84	82	80	78
2	96	88	80	74	93	85	79	73	81	76	71	77	73	68	74	70	66	64
3	88	77	68	62	85	75	67	61	71	65	59	68	62	58	65	60	56	54
4	80	68	59	52	78	67	58	52	63	56	50	61	54	49	58	53	48	46
5	74	61	52	45	72	60	51	45	57	49	44	55	48	43	52	47	42	40
6	69	55	46	39	66	54	45	39	52	44	38	50	43	38	48	42	37	35
7	64	50	41	35	62	49	41	35	47	40	34	45	39	34	44	38	33	31
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	40	34	30	28
9	56	42	34	28	54	41	34	28	40	33	28	39	32	27	37	31	27	25
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	35	29	25	23

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POLAR GRAPH



Maximum Candela = 725.248 Located At Horizontal Angle = 0, Vertical Angle = 20
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)