

# 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-V-8-TW-

ITL86712.900.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST]ITL86712.900 Family Correlation File

[TESTLAB]INDEPENDENT TESTING LABORATORIES, INC.

[TESTDATE]02/10/16

[ISSUEDATE]03/30/16

[MANUFAC]FINELITE, INC.

[LUMCAT]HP-WS-4W-2D-4ft-V-8-TW

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

[OTHER]INPUT ELECTRICAL: 120.0 VOLTS, 40.7 WATTS

[OTHER]INPUT ELECTRICAL: 277.0 VOLTS, 41.7 WATTS

[ABSOLUTE]LUMENS]3097

[OTHER]see [www.finelite.com](http://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](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	3097
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	76
Total Luminaire Watts	40.7
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	8435	8248	8256
55	7578	7551	7537
65	6403	6514	6696
75	5123	5203	5562
85	3603	3567	3203

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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	1235	1235	1235	1235	1235	1235	1235	1235	1235	1235
2.5	1258	1256	1255	1254	1252	1249	1246	1242	1239	1237
5.0	1280	1280	1279	1276	1272	1264	1256	1248	1239	1232
7.5	1298	1297	1296	1290	1283	1274	1264	1250	1236	1224
10.0	1316	1313	1311	1304	1294	1280	1265	1248	1228	1211
12.5	1326	1323	1322	1314	1301	1282	1263	1240	1217	1197
15.0	1333	1330	1329	1319	1303	1281	1259	1228	1202	1178
17.5	1336	1334	1331	1320	1302	1277	1250	1214	1185	1156
20.0	1335	1333	1329	1317	1297	1269	1238	1197	1164	1133
22.5	1330	1329	1324	1309	1288	1256	1221	1177	1139	1105
25.0	1323	1320	1315	1298	1274	1241	1202	1155	1112	1075
27.5	1311	1309	1303	1284	1259	1223	1180	1130	1084	1042
30.0	1298	1294	1287	1267	1240	1201	1155	1103	1053	1008
32.5	1280	1277	1269	1248	1218	1177	1129	1073	1020	971
35.0	1258	1258	1247	1225	1193	1150	1100	1041	985	935
37.5	1235	1235	1223	1199	1166	1121	1068	1008	948	896
40.0	1210	1208	1195	1171	1136	1090	1033	971	910	854
42.5	1180	1180	1166	1140	1105	1057	999	935	871	812
45.0	1144	1144	1131	1106	1070	1020	961	896	830	768
47.5	1111	1108	1095	1070	1033	983	923	857	790	725
50.0	1069	1066	1054	1029	993	943	882	815	747	680
52.5	1020	1020	1008	986	951	902	841	774	705	636
55.0	967	967	957	937	906	859	799	731	661	592
57.5	911	913	903	884	858	814	755	688	617	549
60.0	856	857	847	828	803	765	711	644	573	503
62.5	799	800	790	771	746	711	663	598	529	458
65.0	741	743	733	717	689	654	614	554	484	414
67.5	685	687	677	660	633	599	562	508	441	371
70.0	629	630	619	603	576	543	507	461	395	327
72.5	572	573	565	547	522	488	453	409	352	285
75.0	514	513	508	491	467	437	400	357	305	243
77.5	458	458	452	435	413	384	347	307	262	201
80.0	404	403	397	382	360	332	297	259	214	160
82.5	350	349	343	328	308	282	249	213	170	119
85.0	295	294	290	275	256	232	203	168	127	77
87.5	240	243	236	225	204	181	155	124	89	37
90.0	188	189	184	173	153	132	107	79	51	18
92.5	155	155	150	140	120	100	76	50	25	6
95.0	117	117	112	103	86	68	47	24	11	2
97.5	84	85	79	71	56	40	22	14	7	1
100.0	54	54	49	42	29	20	15	10	3	1
102.5	28	27	23	21	19	16	12	7	2	0
105.0	19	18	18	17	15	13	9	3	1	0
107.5	15	15	15	14	13	10	7	2	1	0
110.0	13	13	12	12	11	8	2	2	1	0
112.5	11	11	11	10	9	5	2	1	0	0
115.0	9	9	9	8	7	2	1	1	0	0
117.5	7	7	7	7	1	1	1	0	0	0
120.0	6	5	3	1	1	1	1	0	0	0
122.5	0	0	0	0	0	0	0	0	0	0
125.0	0	0	0	0	0	0	0	0	0	0
127.5	0	0	0	0	0	0	0	0	0	0
130.0	0	0	0	0	0	0	0	0	0	0
132.5	0	0	0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
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**CANDELA TABULATION - (Cont.)**

135.0	0	0	0	0	0	0	0	0	0	0
137.5	0	0	0	0	0	0	0	0	0	0
140.0	0	0	0	0	0	0	0	0	0	0
142.5	0	0	0	0	0	0	0	0	0	0
145.0	0	0	0	0	0	0	0	0	0	0
147.5	0	0	0	0	0	0	0	0	0	0
150.0	0	0	0	0	0	0	0	0	0	0
152.5	0	0	0	0	0	0	0	0	0	0
155.0	0	0	0	0	0	0	0	0	0	0
157.5	0	0	0	0	0	0	0	0	0	0
160.0	0	0	0	0	0	0	0	0	0	0
162.5	0	0	0	0	0	0	0	0	0	0
165.0	0	0	0	0	0	0	0	0	0	0
167.5	0	0	0	0	0	0	0	0	0	0
170.0	0	0	0	0	0	0	0	0	0	0
172.5	0	0	0	0	0	0	0	0	0	0
175.0	0	0	0	0	0	0	0	0	0	0
177.5	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0

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	1235	1235	1235	1235	1235
2.5	1235	1231	1227	1220	1220
5.0	1229	1219	1198	1172	1168
7.5	1219	1197	1149	1123	1115
10.0	1207	1166	1108	1067	1051
12.5	1192	1125	1058	1003	981
15.0	1172	1085	1002	932	903
17.5	1148	1046	943	858	828
20.0	1122	1003	878	783	741
22.5	1092	955	813	707	664
25.0	1060	907	746	632	586
27.5	1025	856	683	559	511
30.0	989	803	617	487	437
32.5	950	750	553	416	366
35.0	909	698	489	348	297
37.5	868	644	426	283	232
40.0	824	589	364	220	170
42.5	781	536	305	161	112
45.0	735	482	248	105	60
47.5	691	430	193	55	16
50.0	645	378	141	14	5
52.5	600	328	93	6	3
55.0	555	278	49	4	2
57.5	509	230	13	3	1
60.0	464	184	6	2	0
62.5	419	139	5	1	0
65.0	375	97	3	1	0
67.5	331	58	3	1	0
70.0	288	23	2	1	0
72.5	245	7	2	1	0
75.0	204	5	2	1	0
77.5	165	4	1	1	0
80.0	127	3	1	1	0

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CANDELA TABULATION - (Cont.)

82.5	89	2	1	1	0
85.0	52	1	1	0	0
87.5	18	1	1	0	0
90.0	0	0	0	0	0
92.5	0	0	0	0	0
95.0	0	0	0	0	0
97.5	0	0	0	0	0
100.0	0	0	0	0	0
102.5	0	0	0	0	0
105.0	0	0	0	0	0
107.5	0	0	0	0	0
110.0	0	0	0	0	0
112.5	0	0	0	0	0
115.0	0	0	0	0	0
117.5	0	0	0	0	0
120.0	0	0	0	0	0
122.5	0	0	0	0	0
125.0	0	0	0	0	0
127.5	0	0	0	0	0
130.0	0	0	0	0	0
132.5	0	0	0	0	0
135.0	0	0	0	0	0
137.5	0	0	0	0	0
140.0	0	0	0	0	0
142.5	0	0	0	0	0
145.0	0	0	0	0	0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	437.52	N.A.	14.10
0-30	897.34	N.A.	29.00
0-40	1416.16	N.A.	45.70
0-60	2354.39	N.A.	76.00
0-80	2930.94	N.A.	94.60
0-90	3051.59	N.A.	98.50
10-90	2935.43	N.A.	94.80
20-40	978.64	N.A.	31.60
20-50	1480.47	N.A.	47.80
40-70	1281.87	N.A.	41.40
60-80	576.55	N.A.	18.60
70-80	232.91	N.A.	7.50
80-90	120.65	N.A.	3.90
90-110	43.18	N.A.	1.40
90-120	45.22	N.A.	1.50
90-130	45.30	N.A.	1.50
90-150	45.30	N.A.	1.50
90-180	45.30	N.A.	1.50
110-180	2.12	N.A.	0.10
0-180	3096.89	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	116.16
10-20	321.36
20-30	459.82
30-40	518.82
40-50	501.82
50-60	436.41
60-70	343.64
70-80	232.91
80-90	120.65
90-100	36.68
100-110	6.50
110-120	2.04
120-130	0.08
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**

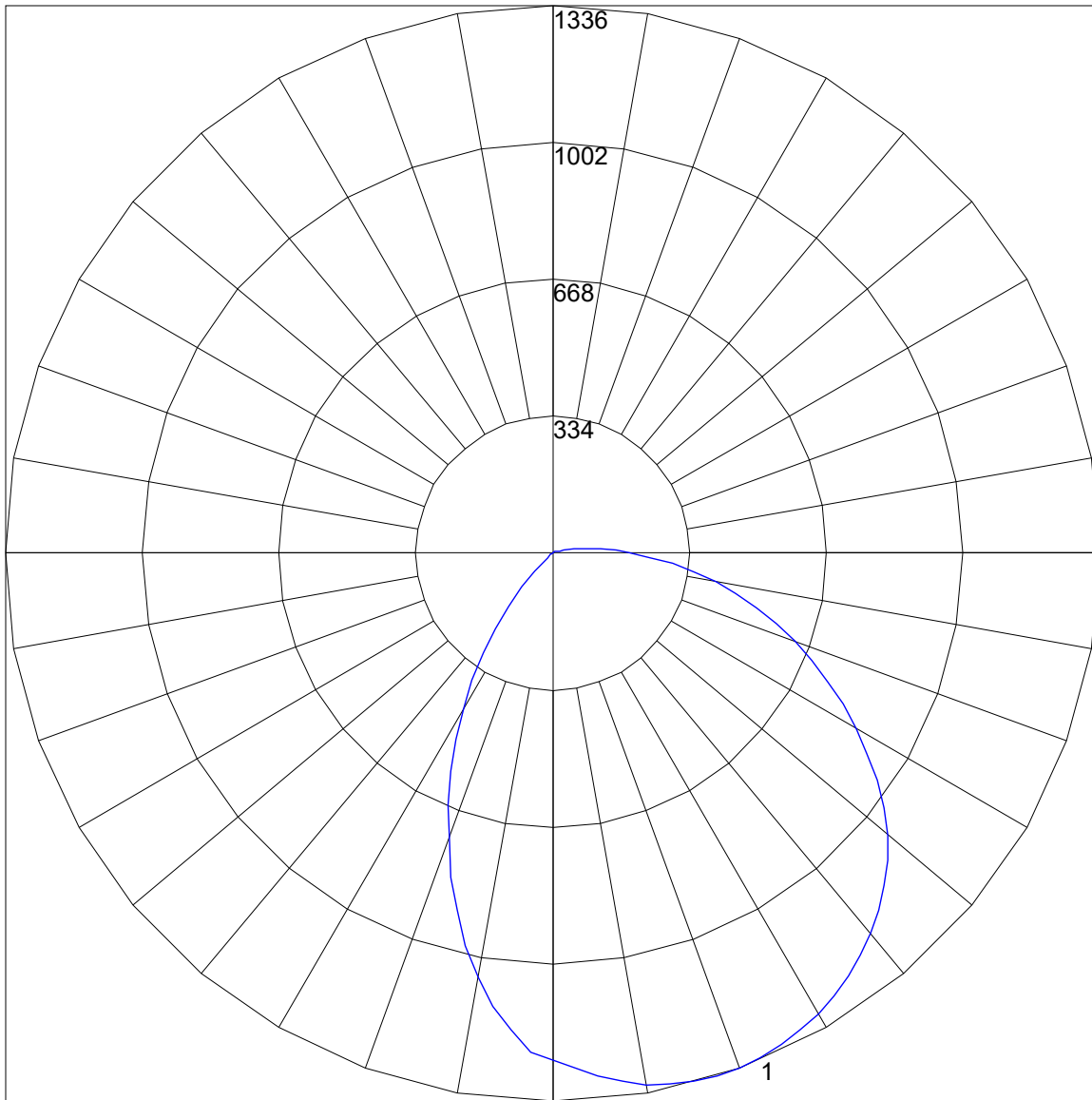
Effective Floor Cavity Reflectance 0.20

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

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**POLAR GRAPH**



Maximum Candela = 1336 Located At Horizontal Angle = 0, Vertical Angle = 17.5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)