

REPORT NUMBER: ITL88850-GONIOPHOTOMETRY

PAGE: 1 OF 8

ISSUE DATE: 01/26/17

PREPARED FOR: FINELITE, INC.

ADDRESS: 30500 WHIPPLE ROAD

UNION CITY, CA 94587

CATALOG NUMBER: HP-WG-6W-4D-4-V-835

LUMINAIRE: FABRICATED WHITE PAINTED METAL HOUSING, EXTRUDED WHITE PAINTED METAL INTERIOR HOUSING/CIRCUIT BOARD MOUNT, 4 WHITE CIRCUIT BOARDS EACH WITH 40 LEDS, FROSTED HOLOGRAPHIC PLASTIC LENS, FORMED SEMI-SPECULAR METAL FORWARD REFLECTOR, EXTRUDED WHITE PLASTIC LOWER CUTOFF SHIELD. LENS FROSTED BOTH SIDES. VERTICAL PHOTOMETRIC CENTER LOCATED AT BACK BOTTOM EDGE OF HOUSING (CEILING HEIGHT).

LAMPS: ONE HUNDRED SIXTY WHITE LIGHT EMITTING DIODES (LEDS), AIMED AT THE HORIZON.

INPUT ELECTRICAL: 277.0 VOLTS, 37.6 WATTS, 0.141 AMPS

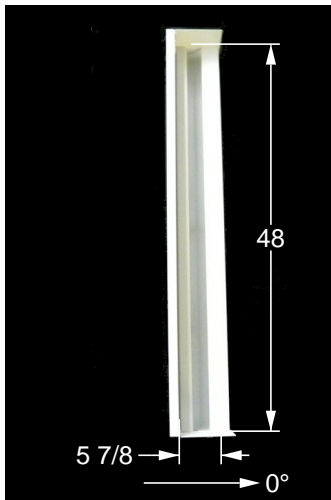
MOUNTING: RECESSED

LED DRIVER: OSRAM OTi 50/120-277/1A4 DIM L, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST. CLIENT STATES DRIVER PROGRAMMED FOR 700mA OUTPUT.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (277VAC, 60Hz) TO THE DRIVER.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET



THIS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.

Checked	<u>M KLOPF</u> TECHNICIAN
Approved	<u>R BEATTIE</u> LIGHTING ENGINEER

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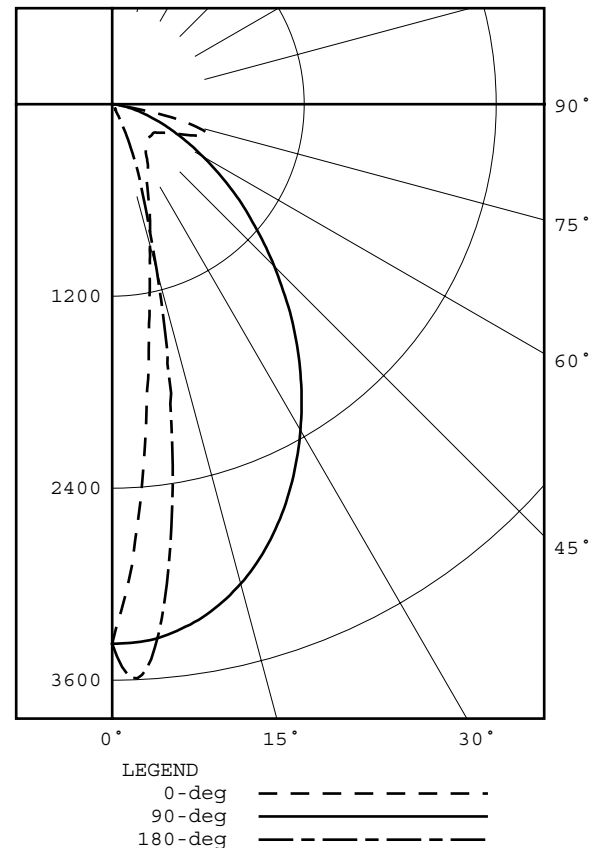
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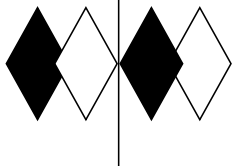
CANDELA DISTRIBUTION						FLUX
	0.0	45.0	90.0	135.0	180.0	
0	3371	3371	3371	3371	3371	
5	2258	2649	3348	3535	3323	272
15	915	1253	3103	1938	1073	502
25	512	718	2639	620	196	472
35	366	466	2051	130	30	387
45	320	335	1433	31	3	306
55	313	274	890	7	1	232
65	433	280	458	4	0	200
75	546	365	170	2	0	182
85	36	35	20	1	0	38
90	34	31	0	0	0	
95	31	28	0	0	0	13
105	24	19	0	0	0	8
115	15	7	0	0	0	4
125	1	2	0	0	0	1
135	0	1	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

ZONAL LUMEN	SUMMARY	
ZONE	LUMENS	%FIXT
0- 30	1246	47.6
0- 40	1632	62.4
0- 60	2170	82.9
0- 90	2589	99.0
90-120	25	1.0
90-130	26	1.0
90-150	26	1.0
90-180	26	1.0
0-180	2616	100.0

EFFICACY (277V) = 69.6 lm/W
EFFICACY (120V) = 71.1 lm/W **
** THE EFFICACY AT 120 VOLTS IS BASED ON
THE LUMENS FROM THIS REPORT AND THE
WATTAGE MEASURED AT 120 VOLTS FROM ITL
REPORT NUMBER ITL88849-THD.

CIE TYPE - DIRECT
PLANE : 0-DEG 90-DEG 180-DEG
SPACING CRITERIA : 0.26 1.07 0.41
BEAM ANGLE (50%) : 18.6 X 78.1 DEGREES
FIELD ANGLE (10%) : 58.1 X 135.9 DEGREES





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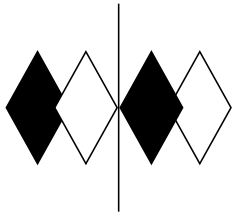
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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0	112.5	135.0	157.5
0.0	3371	3371	3371	3371	3371	3371	3371	3371	3371	3371	3371	3371	3371	3371
0.5	3259	3282	3285	3293	3300	3308	3321	3334	3349	3363	3371	3403	3430	3446
1.0	3172	3188	3193	3207	3223	3242	3268	3295	3326	3355	3371	3434	3483	3509
1.5	3079	3087	3095	3116	3140	3171	3211	3255	3301	3346	3369	3461	3527	3557
2.0	2980	2982	2996	3024	3058	3099	3155	3213	3275	3337	3369	3487	3560	3587
2.5	2879	2876	2892	2928	2972	3044	3095	3170	3250	3328	3367	3509	3584	3598
3.0	2731	2766	2785	2830	2882	2950	3034	3126	3223	3316	3364	3527	3597	3592
3.5	2616	2649	2675	2728	2791	2891	2973	3081	3194	3305	3361	3542	3598	3567
4.0	2501	2531	2561	2621	2698	2791	2911	3036	3167	3296	3358	3554	3586	3526
4.5	2380	2410	2443	2514	2601	2730	2846	2989	3139	3282	3354	3560	3566	3470
5.0	2258	2288	2325	2404	2500	2649	2780	2940	3107	3268	3348	3562	3535	3403
5.5	2138	2167	2209	2293	2400	2562	2712	2892	3076	3254	3340	3560	3494	3323
6.0	2019	2052	2094	2185	2302	2477	2643	2842	3044	3239	3333	3555	3445	3235
6.5	1902	1941	1984	2076	2202	2390	2574	2790	3012	3223	3325	3543	3388	3142
7.0	1798	1833	1880	1975	2104	2302	2502	2740	2979	3208	3317	3528	3325	3041
7.5	1730	1737	1782	1878	2009	2216	2431	2687	2945	3191	3306	3509	3257	2963
8.0	1635	1649	1691	1785	1920	2131	2361	2635	2912	3174	3297	3488	3184	2856
8.5	1549	1563	1608	1699	1833	2049	2290	2581	2877	3157	3290	3462	3107	2745
9.0	1466	1486	1529	1618	1751	1969	2220	2527	2843	3138	3277	3434	3026	2631
9.5	1390	1416	1457	1545	1674	1891	2150	2476	2809	3122	3268	3402	2944	2515
10.0	1344	1352	1392	1477	1601	1818	2083	2420	2772	3103	3256	3363	2858	2399
11.0	1219	1236	1276	1354	1473	1679	1951	2314	2701	3065	3230	3282	2682	2162
11.5	1181	1186	1224	1300	1414	1615	1889	2260	2663	3044	3215	3237	2591	2045
12.0	1130	1138	1176	1250	1359	1555	1828	2208	2627	3025	3201	3188	2501	1927
12.5	1081	1094	1131	1201	1308	1497	1769	2155	2589	3004	3186	3140	2406	1810
13.0	1049	1055	1089	1156	1261	1443	1714	2105	2553	2983	3171	3092	2312	1697
13.5	1004	1016	1050	1114	1215	1392	1658	2052	2517	2967	3156	3041	2219	1586
14.0	976	981	1014	1075	1171	1344	1607	2001	2478	2942	3137	2989	2125	1475
14.5	939	949	981	1038	1132	1297	1559	1952	2441	2929	3120	2938	2032	1370
15.0	915	918	948	1004	1094	1253	1510	1902	2403	2907	3103	2884	1938	1271
16.0	861	864	885	943	1025	1174	1421	1810	2329	2862	3066	2776	1759	1090
17.0	812	816	834	887	963	1102	1339	1722	2255	2814	3026	2666	1585	934
18.0	765	772	790	837	908	1037	1263	1630	2184	2769	2984	2541	1420	802
19.0	721	729	746	792	858	978	1192	1552	2114	2719	2941	2428	1263	694
20.0	676	687	706	750	819	925	1128	1478	2046	2669	2894	2313	1121	606
22.5	580	586	606	654	719	811	987	1311	1879	2541	2772	2027	832	433
25.0	512	517	531	568	631	718	871	1164	1722	2406	2639	1748	620	283
27.5	475	477	484	507	557	638	770	1044	1574	2269	2499	1491	486	162
30.0	448	450	454	467	500	569	686	932	1436	2126	2353	1244	347	68
32.5	405	410	422	436	459	511	615	831	1307	1982	2203	1016	233	44
35.0	366	368	381	401	425	466	553	747	1187	1838	2051	834	130	35
37.5	351	352	355	367	393	429	500	673	1076	1695	1896	683	62	31
40.0	336	338	339	346	361	396	454	606	972	1555	1742	560	44	27
42.5	327	328	327	329	338	363	417	549	876	1417	1582	459	36	13
45.0	320	320	320	317	320	335	383	496	786	1284	1433	362	31	5
47.5	309	309	309	308	307	315	351	451	701	1155	1287	266	27	4
50.0	312	311	303	298	297	298	322	408	626	1031	1145	185	19	4
52.5	314	314	314	299	287	285	298	370	558	914	1018	110	8	3
55.0	313	313	309	304	285	274	277	334	494	802	890	60	7	3
57.5	331	330	318	304	293	265	260	299	435	699	769	40	6	2
60.0	358	356	343	322	293	273	248	268	379	592	656	32	5	2
62.5	387	386	370	346	308	273	237	242	327	503	553	26	5	2
65.0	433	431	407	371	331	280	242	219	280	420	458	18	4	2
67.5	500	498	465	413	354	299	242	202	239	345	373	10	4	1
70.0	577	573	534	471	392	317	249	190	198	279	297	9	3	1
72.5	621	616	583	522	437	341	259	190	166	220	229	7	3	1
75.0	546	548	535	510	453	365	269	189	139	166	170	6	2	1
77.5	379	385	389	396	387	350	275	188	120	119	119	5	2	1
80.0	130	140	162	204	241	250	241	183	111	80	74	4	1	1
82.5	37	38	39	43	67	104	146	151	103	48	39	3	1	0

THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.



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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0	112.5	135.0	157.5
85.0	36	36	37	37	36	35	41	75	83	28	20	2	1	0
87.5	35	35	36	36	35	33	31	28	36	20	8	1	0	0
90.0	34	34	35	34	33	31	29	26	22	12	0	0	0	0
92.5	32	32	33	33	32	30	27	23	18	8	0	0	0	0
95.0	31	31	32	32	30	28	25	20	14	4	0	0	0	0
97.5	29	30	30	30	28	26	22	17	11	2	0	0	0	0
100.0	28	28	29	28	27	24	20	15	7	1	0	0	0	0
102.5	26	26	27	26	24	22	18	12	5	1	0	0	0	0
105.0	24	24	25	24	22	19	15	8	3	1	0	0	0	0
107.5	22	22	23	22	20	17	12	6	3	1	0	0	0	0
110.0	20	20	20	19	17	14	8	4	2	0	0	0	0	0
112.5	17	17	17	16	14	10	5	3	1	0	0	0	0	0
115.0	15	14	15	13	11	7	4	3	1	0	0	0	0	0
117.5	12	11	11	10	8	4	3	2	1	0	0	0	0	0
120.0	8	8	8	7	4	4	3	2	1	0	0	0	0	0
122.5	5	5	4	3	3	3	2	2	1	0	0	0	0	0
125.0	1	1	1	2	2	2	2	1	0	0	0	0	0	0
127.5	0	0	1	2	2	2	2	1	0	0	0	0	0	0
130.0	0	0	1	1	2	2	1	1	0	0	0	0	0	0
132.5	0	0	0	1	1	1	1	1	0	0	0	0	0	0
135.0	0	0	0	0	1	1	1	1	0	0	0	0	0	0
137.5	0	0	0	0	0	1	1	1	0	0	0	0	0	0
140.0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
142.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION
LATERAL ANGLE

	180.0
0.0	3371
0.5	3452
1.0	3518
1.5	3562
2.0	3588
2.5	3592
3.0	3572
3.5	3534
4.0	3478
4.5	3406
5.0	3323
5.5	3228
6.0	3126
6.5	3017
7.0	2903
7.5	2785
8.0	2664
8.5	2540
9.0	2415
9.5	2290
10.0	2160
11.0	1907
11.5	1844
12.0	1658
12.5	1599
13.0	1484
13.5	1373
14.0	1266
14.5	1167
15.0	1073
16.0	908
17.0	771
18.0	662
19.0	575
20.0	505
22.5	331
25.0	196
27.5	85
30.0	45
32.5	35
35.0	30
37.5	26
40.0	16
42.5	3
45.0	3
47.5	2
50.0	1
52.5	1
55.0	1
57.5	0
60.0	0
62.5	0
65.0	0
67.5	0
70.0	0
72.5	0
75.0	0
77.5	0
80.0	0
82.5	0



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CANDELA DISTRIBUTION
LATERAL ANGLE

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



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	77
5- 10	194
10- 15	247
15- 20	255
20- 25	246
25- 30	227
30- 35	204
35- 40	182
40- 45	163
45- 50	143
50- 55	123
55- 60	108
60- 65	100
65- 70	100
70- 75	103
75- 80	79
80- 85	28
85- 90	10
90- 95	7
95-100	6
100-105	5
105-110	4
110-115	2
115-120	1
120-125	1
125-130	0
130-135	0
135-140	0
140-145	0
145-150	0
150-155	0
155-160	0
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	272
0- 20	773
0- 30	1246
0- 40	1632
0- 50	1938
0- 60	2170
0- 70	2370
0- 80	2552
0- 90	2589
0-100	2603
0-110	2611
0-120	2615
0-130	2615
0-140	2616
0-150	2616
0-160	2616
0-170	2616
0-180	2616



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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	101	101	101	99
1	110	106	102	99	107	104	100	97	99	96	94	95	93	91	91	90	88	86
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75
3	95	86	79	73	92	84	78	72	81	76	71	78	74	70	76	72	68	66
4	88	78	71	65	86	77	70	64	74	68	63	72	67	63	70	65	62	60
5	83	72	64	58	81	71	64	58	69	62	57	67	61	57	65	60	56	54
6	78	66	59	53	76	65	58	53	64	57	53	62	56	52	60	55	52	50
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	53	48	44	43
9	66	54	47	42	64	54	47	42	52	46	42	51	46	42	50	45	42	40
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS TEST SAMPLE.

NOTE: THE ZONAL CAVITY CALCULATION TECHNIQUE IS ACCURATE WHEN LUMINAIRES WITH SYMMETRIC CANDELA DISTRIBUTIONS ARE EMPLOYED AND WHEN THE LUMINAIRES ARE LOCATED SYMMETRICALLY THROUGHOUT THE ROOM. THIS UNIT HAS SPECIAL CHARACTERISTICS AND THEREFORE THESE COEFFICIENTS SHOULD BE USED WITH CAUTION.