

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: HALO

Report Number: P407861

Luminaire Tested: **ALS10A40-DL**

Issue Date: 08/27/2020

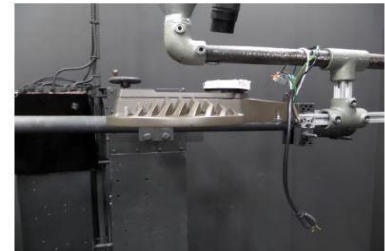
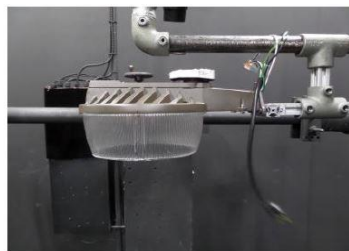
**Test Information**

Test Method: LM-79-08  
Report Number: P407861  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2006-852-16)  
Test Lab: INNOVATIONS CENTER(G1)  
Issue Date: 08/27/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: ALS10A40-DL  
Description: HALO OUTDOOR BARN LIGHT STANDARD 10000LM W/ DROP LENS  
Light Source: (102) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10497.2 lumens  
Efficiency: N/A  
Efficacy: 136.7 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 0.67' x H: 0.25')  
IES Classification: Type V - Short - Cutoff  
BUG Rating: B3 - U3 - G2

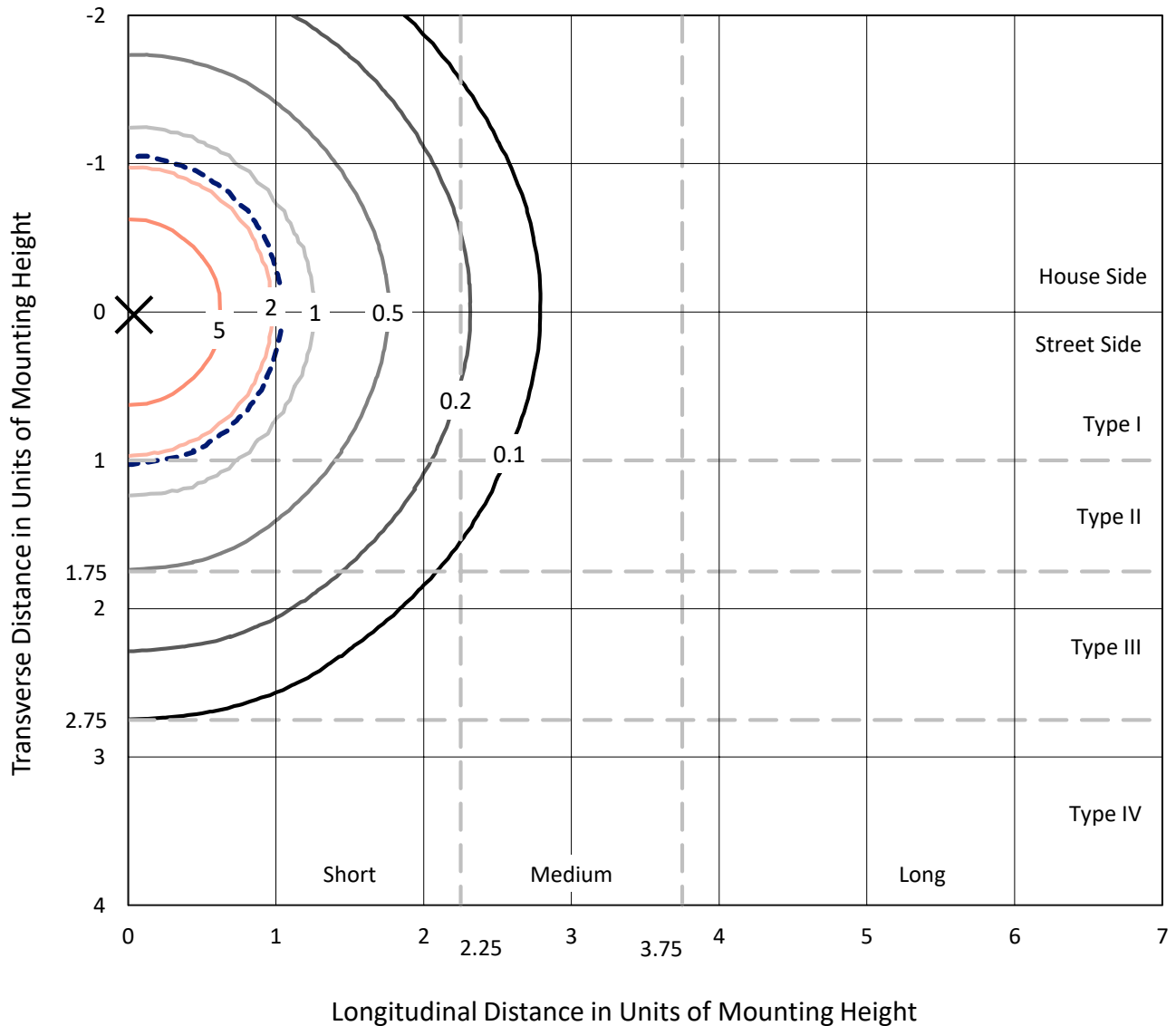
Input Watts (W): 76.8  
Input Voltage (V): 120.0  
Input Current (Ain): 0.647  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

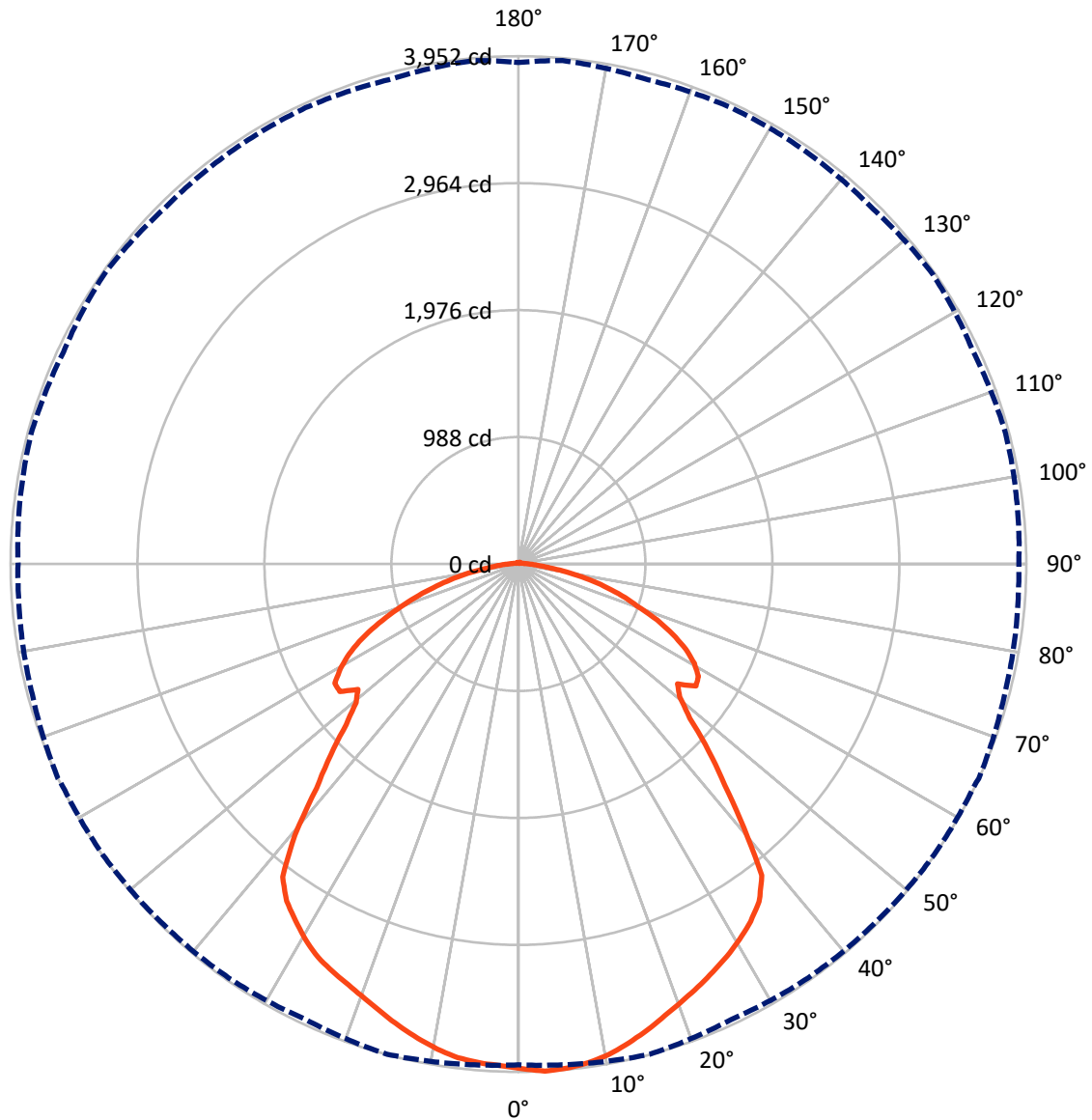
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.8 fc  
 Type V - Short - Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 65-Deg Lateral    - - - Horizontal Cone Through 2.5-Deg Vertical

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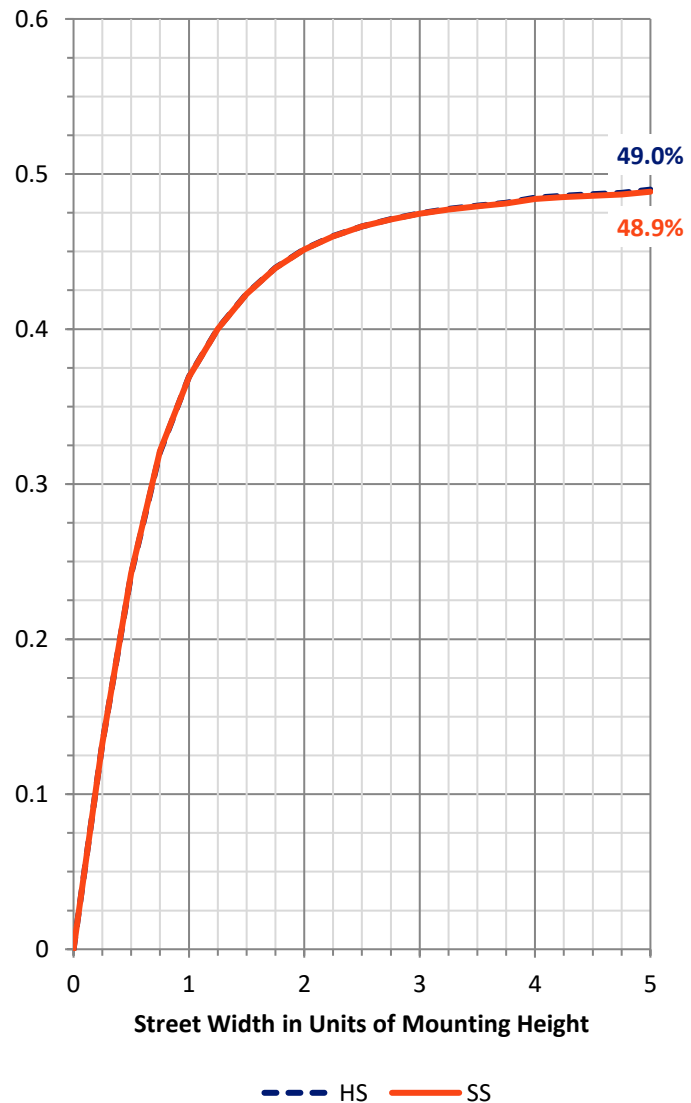
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	5207.1	64.2	5271.3
	% Fixture	49.6	0.6	50.2
<b>Street Side</b>	Lumens	5159.8	66.1	5225.9
	% Fixture	49.2	0.6	49.8
<b>Total</b>	Lumens	10366.9	130.3	10497.2
	% Fixture	98.8	1.2	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	371.2	3.5
10°-20°	1052.3	10.0
20°-30°	1608.2	15.3
30°-40°	1966.5	18.7
40°-50°	1623.3	15.5
50°-60°	1480.6	14.1
60°-70°	1314.8	12.5
70°-80°	732.7	7.0
80°-90°	217.2	2.1
90°-100°	54.4	0.5
100°-110°	24.8	0.2
110°-120°	13.3	0.1
120°-130°	11.8	0.1
130°-140°	11.7	0.1
140°-150°	9.6	0.1
150°-160°	3.8	0.0
160°-170°	0.7	0.0
170°-180°	0.2	0.0
0°-90°	10366.9	98.8
0°-180°	10497.2	100.0



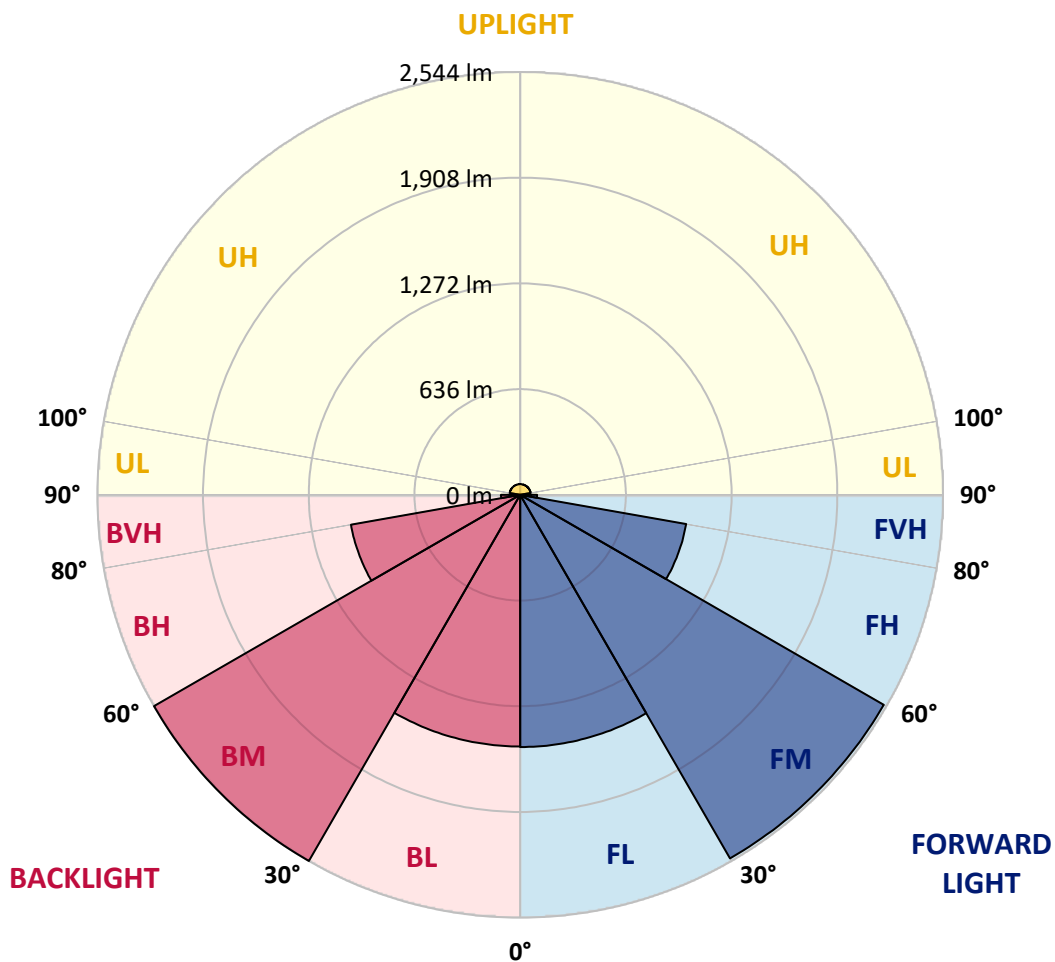
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1517.6	14.5			
FM	(30°-60°)	2526.2	24.1			
FH	(60°-80°)	1014.1	9.7			G1/1800
FVH	(80°-90°)	101.9	1.0			G2/225
BL	(0°-30°)	1514.2	14.4	B3/2500		
BM	(30°-60°)	2544.1	24.2	B3/5000		
BH	(60°-80°)	1033.5	9.8	B3/2500		G1/1800
BVH	(80°-90°)	115.3	1.1			G2/225
UL	(90°-100°)	54.4	0.5		U3/500	
UH	(100°-180°)	64.2	0.6		U3/500	

**BUG Rating: B3-U3-G2**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	64°	65°	75°	85°
0°	3928	3928	3928	3928	3928	3928	3928	3928	3928	3928	3928
2.5°	3897	3912	3949	3912	3931	3937	3947	3945	3952	3917	3900
5°	3885	3899	3939	3905	3914	3923	3937	3934	3942	3909	3888
7.5°	3858	3876	3915	3881	3891	3899	3917	3910	3918	3881	3865
10°	3822	3834	3878	3847	3856	3861	3878	3871	3881	3844	3822
12.5°	3770	3782	3823	3792	3798	3806	3826	3817	3824	3789	3770
15°	3708	3712	3761	3731	3728	3737	3763	3758	3762	3722	3710
17.5°	3634	3641	3690	3662	3657	3661	3694	3688	3694	3663	3638
20°	3568	3571	3624	3600	3592	3591	3625	3627	3633	3602	3570
22.5°	3506	3504	3555	3543	3536	3530	3559	3566	3576	3545	3519
25°	3442	3443	3502	3488	3477	3470	3502	3511	3516	3493	3468
27.5°	3394	3396	3450	3433	3412	3408	3447	3450	3457	3440	3410
30°	3343	3335	3393	3371	3341	3334	3378	3381	3391	3373	3343
32.5°	3278	3270	3317	3294	3263	3252	3292	3309	3317	3301	3259
35°	3210	3195	3226	3195	3171	3172	3198	3221	3226	3223	3186
37.5°	3046	3015	3069	3038	3039	3063	3075	3082	3076	3090	3073
40°	2657	2638	2666	2688	2690	2725	2731	2697	2701	2701	2703
42.5°	2297	2287	2316	2311	2333	2363	2375	2343	2353	2335	2342
45°	2035	2011	2023	2066	2072	2065	2078	2080	2077	2063	2053
47.5°	1763	1772	1808	1823	1795	1791	1806	1815	1796	1811	1830
50°	1636	1626	1648	1660	1630	1607	1618	1619	1625	1656	1687
52.5°	1555	1543	1593	1618	1580	1551	1548	1549	1551	1589	1649
55°	1668	1663	1714	1738	1698	1675	1684	1679	1676	1707	1758
57.5°	1667	1657	1703	1704	1658	1635	1646	1654	1651	1691	1757
60°	1622	1608	1634	1634	1581	1558	1569	1575	1573	1612	1671
62.5°	1499	1485	1517	1509	1463	1440	1454	1464	1463	1501	1552
65°	1339	1318	1353	1343	1313	1293	1306	1320	1321	1352	1392
67.5°	1158	1162	1179	1178	1132	1117	1134	1152	1163	1178	1219
70°	998	995	1008	1003	955	954	972	988	982	1012	1055
72.5°	847	829	833	832	812	805	823	838	843	860	886
75°	691	675	677	677	659	659	670	680	688	694	714
77.5°	547	533	531	532	523	522	532	530	537	540	562
80°	380	363	372	375	379	381	383	387	380	381	390
82.5°	241	235	236	234	239	240	247	249	247	248	252
85°	162	161	163	163	163	166	166	166	166	167	166
87.5°	114	110	115	112	110	110	113	115	114	117	118
90°	76	76	76	75	75	74	75	76	77	79	81
92.5°	56	56	56	56	55	56	57	57	57	60	61
95°	44	43	44	44	43	43	44	44	44	45	46
97.5°	36	35	36	36	35	35	35	35	35	36	36
100°	29	30	30	30	30	30	30	30	30	31	31
102.5°	26	26	26	27	26	26	27	27	27	27	27
105°	24	24	24	24	24	24	24	24	24	24	24
107.5°	20	20	20	21	21	21	21	21	21	21	21
110°	16	16	17	18	19	19	18	18	17	17	17



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	64°	65°	75°	85°
112.5°	13	13	14	17	17	17	17	16	16	15	13
115°	11	12	13	15	16	16	16	16	15	13	12
117.5°	11	11	13	14	15	15	15	14	14	13	11
120°	12	12	12	13	14	14	14	14	14	13	12
122.5°	13	13	13	13	14	14	14	14	13	13	15
125°	14	14	13	13	14	14	14	14	14	15	16
127.5°	16	16	14	14	15	15	14	15	15	16	16
130°	18	18	16	15	15	15	15	15	15	16	15
132.5°	21	20	18	17	16	16	16	16	16	16	15
135°	21	20	19	17	16	17	16	16	16	16	15
137.5°	22	21	20	18	17	17	17	17	17	17	16
140°	21	20	20	18	17	17	17	16	17	17	16
142.5°	20	20	19	18	17	16	16	16	16	17	16
145°	18	18	17	17	16	16	15	16	15	16	16
147.5°	16	15	15	15	14	14	14	14	14	15	15
150°	13	13	13	12	12	13	12	13	12	13	13
152.5°	10	10	10	10	10	10	10	10	10	11	11
155°	7	7	7	7	7	7	7	8	8	8	9
157.5°	4	4	5	5	5	5	5	6	5	6	6
160°	3	3	3	3	3	4	4	4	4	4	4
162.5°	2	2	2	2	3	3	2	3	3	3	3
165°	2	2	2	2	2	2	2	2	2	2	2
167.5°	2	2	2	2	2	2	2	2	2	2	2
170°	2	2	2	2	2	2	2	2	2	2	2
172.5°	2	2	2	2	2	2	2	2	2	2	2
175°	2	2	2	2	2	2	2	2	2	2	2
177.5°	2	2	2	2	2	2	2	2	2	2	2
180°	1	1	1	1	1	1	1	1	1	1	1





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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3928	3928	3928	3928	3928	3928	3928	3928	3928	3928	3928
2.5°	3894	3905	3925	3906	3935	3905	3912	3918	3901	3933	3903
5°	3881	3895	3910	3893	3924	3894	3900	3904	3889	3922	3892
7.5°	3861	3875	3886	3870	3900	3870	3877	3883	3866	3900	3867
10°	3820	3833	3843	3827	3857	3834	3840	3847	3832	3866	3825
12.5°	3763	3781	3790	3773	3803	3775	3782	3793	3775	3808	3766
15°	3702	3715	3723	3712	3735	3706	3716	3728	3713	3745	3704
17.5°	3634	3650	3659	3647	3662	3639	3648	3662	3646	3681	3637
20°	3570	3593	3604	3585	3594	3574	3591	3602	3582	3615	3565
22.5°	3515	3536	3551	3532	3538	3516	3530	3550	3527	3554	3511
25°	3458	3486	3502	3485	3487	3453	3468	3494	3477	3502	3458
27.5°	3407	3430	3457	3435	3430	3391	3398	3442	3428	3452	3409
30°	3338	3362	3386	3361	3350	3318	3320	3363	3361	3384	3339
32.5°	3244	3275	3307	3273	3261	3231	3228	3267	3280	3306	3258
35°	3168	3191	3217	3183	3161	3148	3143	3151	3181	3225	3181
37.5°	3070	3088	3080	3048	3046	3054	3025	3027	3047	3106	3063
40°	2717	2725	2733	2733	2786	2776	2790	2746	2753	2811	2738
42.5°	2353	2345	2368	2347	2413	2379	2375	2370	2391	2383	2361
45°	2004	2067	2072	2083	2127	2120	2102	2099	2082	2097	2046
47.5°	1845	1843	1825	1831	1845	1814	1847	1858	1851	1881	1867
50°	1701	1693	1687	1660	1647	1646	1645	1673	1663	1712	1672
52.5°	1648	1646	1624	1584	1550	1544	1547	1585	1586	1589	1560
55°	1761	1763	1734	1707	1670	1640	1658	1685	1662	1670	1647
57.5°	1762	1773	1745	1704	1674	1655	1670	1698	1693	1702	1679
60°	1679	1695	1655	1607	1578	1572	1592	1633	1619	1621	1598
62.5°	1560	1562	1537	1494	1464	1460	1486	1513	1502	1501	1489
65°	1392	1396	1384	1348	1328	1321	1324	1350	1340	1342	1328
67.5°	1215	1225	1217	1180	1160	1165	1168	1177	1174	1174	1166
70°	1054	1066	1048	1007	983	984	996	1013	1018	1011	1004
72.5°	894	892	889	844	829	825	832	846	852	851	848
75°	713	712	716	687	686	689	692	698	697	694	679
77.5°	561	566	557	540	551	559	564	569	568	563	554
80°	405	402	410	398	408	418	425	433	430	425	425
82.5°	264	262	270	263	274	281	286	290	289	283	279
85°	165	169	175	180	184	188	189	198	198	196	191
87.5°	117	120	125	128	128	132	133	137	140	140	137
90°	81	82	85	85	87	87	89	91	93	93	91
92.5°	61	62	63	63	65	63	64	64	64	64	62
95°	46	46	48	48	49	49	49	48	47	46	46
97.5°	36	36	37	37	39	39	38	38	37	36	36
100°	31	31	32	32	32	32	32	31	29	29	29
102.5°	27	27	28	28	29	28	27	26	23	23	23
105°	24	24	24	24	25	25	24	21	18	19	19
107.5°	21	21	21	21	21	21	20	18	16	17	17
110°	17	17	17	17	18	17	16	14	13	14	14



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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	13	13	13	13	14	13	13	11	10	11	11
115°	11	11	12	12	12	12	12	10	8	8	8
117.5°	11	11	13	15	15	13	12	10	7	6	6
120°	12	12	13	15	15	14	12	10	7	6	6
122.5°	15	15	15	14	14	13	12	12	9	5	5
125°	16	17	15	14	14	13	12	11	9	5	5
127.5°	16	16	15	14	14	13	12	11	10	7	6
130°	15	15	15	14	14	13	12	11	10	6	5
132.5°	15	15	15	14	14	14	13	13	10	6	5
135°	15	15	14	14	15	14	15	14	11	6	5
137.5°	16	15	15	15	16	16	17	16	12	6	5
140°	16	15	15	15	16	17	18	17	13	7	5
142.5°	16	15	15	16	17	18	20	18	13	7	6
145°	16	15	15	15	17	18	19	18	13	7	6
147.5°	15	14	15	14	16	17	18	16	12	7	5
150°	14	13	14	13	14	15	15	14	10	6	5
152.5°	11	11	11	11	12	12	12	11	8	5	4
155°	9	9	9	9	9	9	9	8	6	4	4
157.5°	6	6	6	6	6	6	6	5	4	3	3
160°	4	4	4	4	4	4	4	3	3	3	3
162.5°	3	3	3	3	3	3	3	3	2	2	2
165°	2	2	2	2	2	2	2	2	2	2	2
167.5°	2	2	2	2	2	2	2	2	2	2	2
170°	2	2	2	2	2	2	2	2	2	2	2
172.5°	2	2	2	2	2	2	2	2	2	2	2
175°	2	2	2	2	2	2	2	2	2	2	2
177.5°	2	2	2	2	2	2	2	2	2	2	2
180°	1	1	1	1	1	1	1	1	1	1	1

(END OF REPORT)