

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P775840

Luminaire Tested: HCDJBL510CSD-HCD82TRC-1000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775840
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B062-HCD82TRC)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD82TRC-1000lm-2700K
Description: 8 INCH ROUND NARROW SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

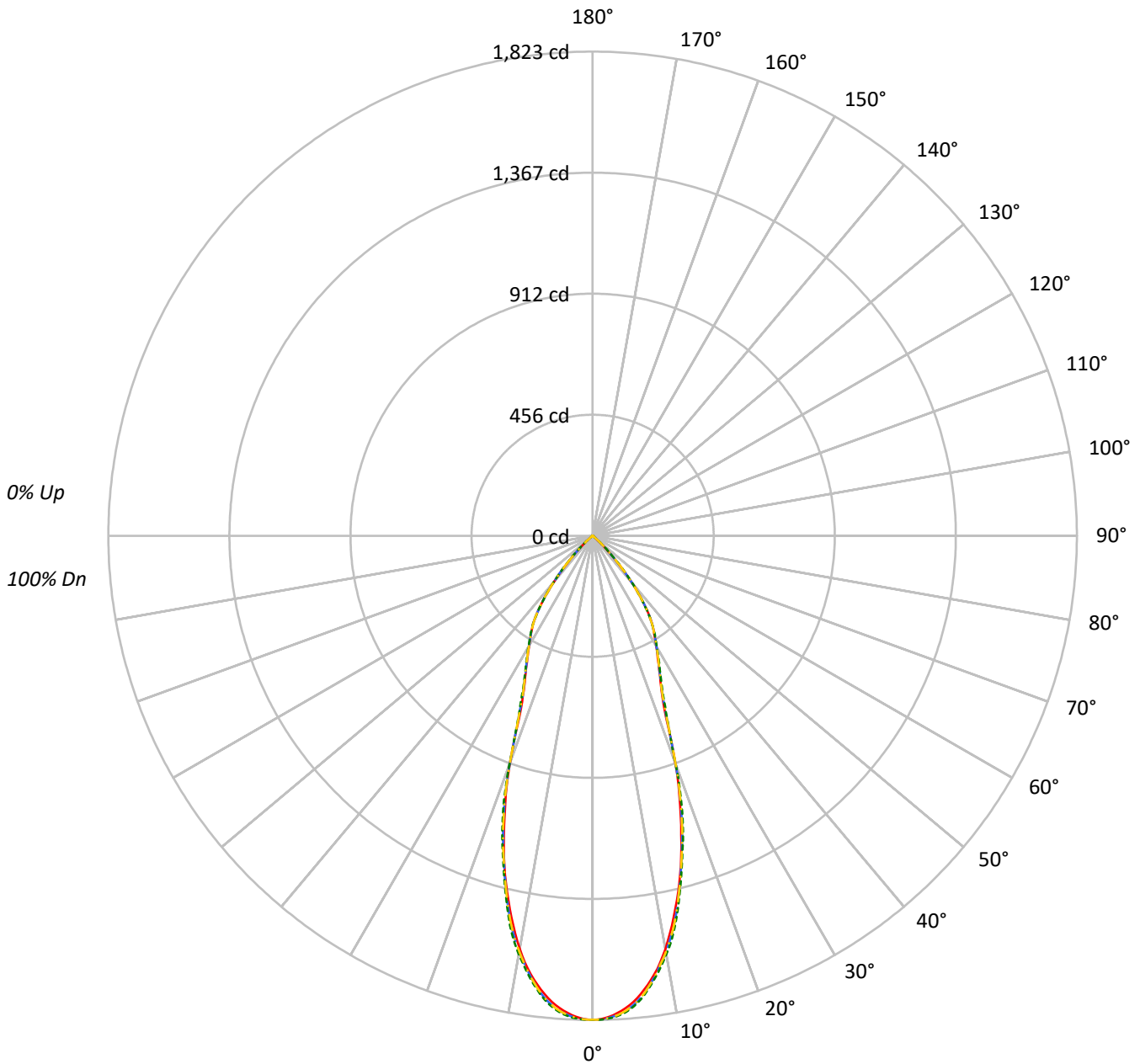
Lumens per Lamp: N/A
Luminaire Lumens: 1113.0 lumens
Efficiency: N/A
Efficacy: 111.3 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 0.66 / 0.66
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

Input Watts (W): 10
Input Voltage (V): NR
Input Current (Ain): NR
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: 24 FT



TEST NUMBER: P775840
CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					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	50	30	10	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94	94	94	94	94	94		
	2	108	104	100	97	106	102	99	96	99	96	94	96	94	92	93	91	90	88	88	88	88	88	88		
	3	103	97	92	89	101	96	91	88	93	90	87	91	88	85	89	86	84	82	82	82	82	82	82		
	4	98	91	86	82	97	90	85	81	88	84	80	86	82	80	84	81	79	77	77	77	77	77	77		
	5	94	86	80	76	92	85	80	76	83	79	75	81	78	74	80	77	74	72	72	72	72	72	72		
	6	89	81	75	71	88	80	75	71	79	74	70	77	73	70	76	72	69	68	68	68	68	68	68		
	7	85	76	71	67	84	76	70	67	75	70	66	73	69	66	72	68	65	64	64	64	64	64	64		
	8	81	72	67	63	80	72	66	63	71	66	62	70	65	62	69	65	62	61	61	61	61	61	61		
	9	78	69	63	59	77	68	63	59	67	62	59	66	62	59	66	62	59	57	57	57	57	57	57		
	10	75	65	60	56	74	65	60	56	64	59	56	63	59	56	63	59	56	54	54	54	54	54	54		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	55635	55635	55635	55635
5°	53975	54521	53975	54521
10°	48939	49596	48939	49596
15°	40577	40928	40577	40928
20°	29549	29673	29549	29673
25°	20357	20640	20357	20640
30°	16865	17041	16865	17041
35°	14077	14010	14077	14010
40°	9011	9135	9011	9135
45°	3648	4007	3648	4007
50°	684	760	684	760
55°	208	202	208	202
60°	134	134	134	134
65°	94	94	94	94
70°	62	71	62	71
75°	47	47	47	47
80°	35	35	35	35
85°	0	35	0	35

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 4007 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	14.7
10°-20°	352.2	31.6
20°-30°	288.9	26.0
30°-40°	227.4	20.4
40°-50°	74.8	6.7
50°-60°	4.4	0.4
60°-70°	1.3	0.1
70°-80°	0.5	0.0
80°-90°	0.1	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	804.5	72.3
0°-40°	1031.9	92.7
0°-60°	1111.1	99.8
0°-90°	1113.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1113.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1822	1822	1822	1822	1822	
5°	1761	1779	1761	1779	1761	162
15°	1284	1295	1284	1295	1284	349
25°	604	613	604	613	604	287
35°	378	376	378	376	378	227
45°	84	93	84	93	84	72
55°	4	4	4	4	4	4
65°	1	1	1	1	1	1
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



TEST NUMBER: P775840

CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1822.3	1822.3	1822.3	1822.3	1822.3	1822.3	1822.3	1822.3	1822.3	1822.3	1822.3
0.5°	1821.5	1821.7	1822.6	1820.8	1822.8	1820.8	1822.6	1821.7	1821.5	1821.7	1822.6
1°	1819.6	1820.0	1821.4	1819.7	1821.8	1819.7	1821.4	1820.0	1819.6	1820.0	1821.4
1.5°	1816.2	1817.1	1819.2	1817.9	1820.1	1817.9	1819.2	1817.1	1816.2	1817.1	1819.2
2°	1811.7	1812.9	1816.1	1815.2	1818.3	1815.2	1816.1	1812.9	1811.7	1812.9	1816.1
2.5°	1805.9	1807.8	1811.8	1811.6	1815.0	1811.6	1811.8	1807.8	1805.9	1807.8	1811.8
3°	1799.2	1801.7	1806.6	1806.7	1810.6	1806.7	1806.6	1801.7	1799.2	1801.7	1806.6
3.5°	1791.4	1794.7	1800.2	1800.5	1804.9	1800.5	1800.2	1794.7	1791.4	1794.7	1800.2
4°	1782.7	1787.1	1792.6	1793.0	1797.8	1793.0	1792.6	1787.1	1782.7	1787.1	1792.6
4.5°	1772.6	1778.1	1783.5	1784.4	1789.2	1784.4	1783.5	1778.1	1772.6	1778.1	1783.5
5°	1761.2	1768.1	1773.1	1774.4	1779.0	1774.4	1773.1	1768.1	1761.2	1768.1	1773.1
5.5°	1748.4	1756.6	1760.7	1763.2	1767.2	1763.2	1760.7	1756.6	1748.4	1756.6	1760.7
6°	1734.5	1743.7	1746.9	1750.7	1753.2	1750.7	1746.9	1743.7	1734.5	1743.7	1746.9
6.5°	1719.3	1729.2	1731.3	1736.8	1737.7	1736.8	1731.3	1729.2	1719.3	1729.2	1731.3
7°	1703.3	1713.0	1714.4	1721.9	1720.5	1721.9	1714.4	1713.0	1703.3	1713.0	1714.4
7.5°	1686.3	1695.2	1695.8	1705.6	1702.5	1705.6	1695.8	1695.2	1686.3	1695.2	1695.8
8°	1668.1	1676.0	1676.4	1687.9	1683.1	1687.9	1676.4	1676.0	1668.1	1676.0	1676.4
8.5°	1648.2	1654.7	1655.7	1668.5	1663.3	1668.5	1655.7	1654.7	1648.2	1654.7	1655.7
9°	1626.9	1631.9	1634.2	1647.3	1642.2	1647.3	1634.2	1631.9	1626.9	1631.9	1634.2
9.5°	1603.5	1607.1	1612.4	1624.2	1621.5	1624.2	1612.4	1607.1	1603.5	1607.1	1612.4
10°	1578.6	1581.3	1589.6	1599.0	1599.8	1599.0	1589.6	1581.3	1578.6	1581.3	1589.6
10.5°	1552.2	1553.9	1566.1	1572.3	1577.5	1572.3	1566.1	1553.9	1552.2	1553.9	1566.1
11°	1525.2	1525.9	1541.7	1544.4	1553.1	1544.4	1541.7	1525.9	1525.2	1525.9	1541.7
11.5°	1497.1	1497.6	1515.3	1515.5	1526.2	1515.5	1515.3	1497.6	1497.1	1497.6	1515.3
12°	1468.8	1469.2	1486.4	1486.9	1497.4	1486.9	1486.4	1469.2	1468.8	1469.2	1486.4
12.5°	1439.0	1441.4	1455.1	1457.8	1465.3	1457.8	1455.1	1441.4	1439.0	1441.4	1455.1
13°	1409.6	1413.1	1422.8	1428.2	1433.1	1428.2	1422.8	1413.1	1409.6	1413.1	1422.8
13.5°	1379.2	1384.0	1389.0	1396.7	1398.5	1396.7	1389.0	1384.0	1379.2	1384.0	1389.0
14°	1348.6	1353.4	1355.4	1363.9	1363.8	1363.9	1355.4	1353.4	1348.6	1353.4	1355.4
14.5°	1316.8	1320.6	1322.1	1330.7	1329.5	1330.7	1322.1	1320.6	1316.8	1320.6	1322.1
15°	1283.8	1286.2	1288.6	1296.4	1294.9	1296.4	1288.6	1286.2	1283.8	1286.2	1288.6
15.5°	1248.6	1250.0	1255.3	1262.3	1262.6	1262.3	1255.3	1250.0	1248.6	1250.0	1255.3
16°	1212.8	1213.7	1221.7	1227.9	1229.4	1227.9	1221.7	1213.7	1212.8	1213.7	1221.7
16.5°	1175.0	1177.7	1187.2	1193.8	1197.4	1193.8	1187.2	1177.7	1175.0	1177.7	1187.2
17°	1138.5	1141.7	1152.2	1159.9	1164.5	1159.9	1152.2	1141.7	1138.5	1141.7	1152.2
17.5°	1101.6	1106.0	1115.5	1124.9	1129.4	1124.9	1115.5	1106.0	1101.6	1106.0	1115.5
18°	1066.0	1069.2	1077.9	1088.2	1092.1	1088.2	1077.9	1069.2	1066.0	1069.2	1077.9
18.5°	1029.0	1032.0	1038.7	1048.9	1051.9	1048.9	1038.7	1032.0	1029.0	1032.0	1038.7
19°	991.1	993.1	998.3	1005.9	1009.0	1005.9	998.3	993.1	991.1	993.1	998.3
19.5°	951.4	951.6	955.5	961.3	964.2	961.3	955.5	951.6	951.4	951.6	955.5
20°	909.5	909.5	911.6	914.8	913.3	914.8	911.6	909.5	909.5	909.5	911.6
20.5°	868.3	866.8	867.7	867.6	863.2	867.6	867.7	866.8	868.3	866.8	867.7
21°	825.8	824.8	821.1	824.8	823.4	824.8	821.1	824.8	825.8	824.8	821.1



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CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	707.1	711.8	718.2	725.9	722.5	725.9	718.2	711.8	707.1	711.8	718.2
23°	679.4	682.6	689.2	699.7	699.8	699.7	689.2	682.6	679.4	682.6	689.2
23.5°	659.0	658.5	662.7	672.8	674.1	672.8	662.7	658.5	659.0	658.5	662.7
24°	637.1	639.3	641.9	650.1	650.7	650.1	641.9	639.3	637.1	639.3	641.9
24.5°	620.2	621.3	623.6	628.9	628.9	628.9	623.6	621.3	620.2	621.3	623.6
25°	604.3	605.7	608.1	612.9	612.7	612.9	608.1	605.7	604.3	605.7	608.1
25.5°	589.5	590.2	592.7	597.2	597.5	597.2	592.7	590.2	589.5	590.2	592.7
26°	575.2	575.8	577.6	581.0	581.5	581.0	577.6	575.8	575.2	575.8	577.6
26.5°	561.7	561.9	564.0	567.1	567.4	567.1	564.0	561.9	561.7	561.9	564.0
27°	548.0	548.6	550.8	554.7	555.7	554.7	550.8	548.6	548.0	548.6	550.8
27.5°	535.1	535.9	538.0	541.8	543.2	541.8	538.0	535.9	535.1	535.9	538.0
28°	522.9	523.7	525.7	528.5	529.8	528.5	525.7	523.7	522.9	523.7	525.7
28.5°	511.6	512.0	513.9	516.1	517.2	516.1	513.9	512.0	511.6	512.0	513.9
29°	500.3	500.6	502.4	504.3	505.5	504.3	502.4	500.6	500.3	500.6	502.4
29.5°	489.2	489.8	491.3	493.4	494.4	493.4	491.3	489.8	489.2	489.8	491.3
30°	478.4	479.0	480.4	482.4	483.4	482.4	480.4	479.0	478.4	479.0	480.4
30.5°	467.9	468.4	469.8	471.7	472.4	471.7	469.8	468.4	467.9	468.4	469.8
31°	457.6	458.1	459.4	461.4	462.4	461.4	459.4	458.1	457.6	458.1	459.4
31.5°	447.7	448.2	449.6	451.4	452.1	451.4	449.6	448.2	447.7	448.2	449.6
32°	438.2	438.6	439.9	441.7	442.4	441.7	439.9	438.6	438.2	438.6	439.9
32.5°	429.1	429.5	430.4	432.1	432.7	432.1	430.4	429.5	429.1	429.5	430.4
33°	420.3	420.5	421.0	421.8	422.4	421.8	421.0	420.5	420.3	420.5	421.0
33.5°	411.2	411.2	411.0	410.6	411.5	410.6	411.0	411.2	411.2	411.2	411.0
34°	400.9	400.5	400.3	399.0	401.0	399.0	400.3	400.5	400.9	400.5	400.3
34.5°	389.7	388.8	388.7	387.0	388.5	387.0	388.7	388.8	389.7	388.8	388.7
35°	377.7	376.5	376.5	374.9	375.9	374.9	376.5	376.5	377.7	376.5	376.5
35.5°	364.6	364.1	363.5	362.1	362.7	362.1	363.5	364.1	364.6	364.1	363.5
36°	351.0	350.8	349.7	348.9	349.0	348.9	349.7	350.8	351.0	350.8	349.7
36.5°	336.6	337.0	335.4	334.9	334.3	334.9	335.4	337.0	336.6	337.0	335.4
37°	321.1	322.3	320.9	320.6	319.8	320.6	320.9	322.3	321.1	322.3	320.9
37.5°	305.7	306.6	306.2	305.7	305.4	305.7	306.2	306.6	305.7	306.6	306.2
38°	290.3	291.0	290.5	290.9	290.6	290.9	290.5	291.0	290.3	291.0	290.5
38.5°	274.8	274.4	274.6	274.7	275.5	274.7	274.6	274.4	274.8	274.4	274.6
39°	259.1	258.2	258.7	258.7	260.3	258.7	258.7	258.2	259.1	258.2	258.7
39.5°	242.6	242.1	242.8	243.4	244.6	243.4	242.8	242.1	242.6	242.1	242.8
40°	226.1	226.5	227.4	228.3	229.2	228.3	227.4	226.5	226.1	226.5	227.4
40.5°	209.7	210.7	211.6	213.8	213.7	213.8	211.6	210.7	209.7	210.7	211.6
41°	193.8	194.9	196.2	198.8	198.4	198.8	196.2	194.9	193.8	194.9	196.2
41.5°	177.8	179.2	180.9	184.0	183.3	184.0	180.9	179.2	177.8	179.2	180.9
42°	162.5	163.9	166.2	169.3	168.8	169.3	166.2	163.9	162.5	163.9	166.2
42.5°	147.8	149.1	152.1	155.3	155.0	155.3	152.1	149.1	147.8	149.1	152.1
43°	133.6	135.3	138.4	142.0	141.7	142.0	138.4	135.3	133.6	135.3	138.4
43.5°	120.9	121.8	124.9	128.4	128.7	128.4	124.9	121.8	120.9	121.8	124.9



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CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	84.5	84.9	88.3	91.5	92.8	91.5	88.3	84.9	84.5	84.9	88.3
45.5°	72.9	73.8	77.6	80.4	82.1	80.4	77.6	73.8	72.9	73.8	77.6
46°	62.7	63.4	67.5	70.7	72.5	70.7	67.5	63.4	62.7	63.4	67.5
46.5°	53.4	54.6	57.9	61.9	64.0	61.9	57.9	54.6	53.4	54.6	57.9
47°	45.0	46.4	48.9	53.4	55.4	53.4	48.9	46.4	45.0	46.4	48.9
47.5°	37.8	39.2	41.5	45.4	46.9	45.4	41.5	39.2	37.8	39.2	41.5
48°	31.3	33.0	34.6	38.1	38.4	38.1	34.6	33.0	31.3	33.0	34.6
48.5°	25.8	27.3	28.6	31.6	31.1	31.6	28.6	27.3	25.8	27.3	28.6
49°	21.4	22.3	23.2	26.0	25.2	26.0	23.2	22.3	21.4	22.3	23.2
49.5°	17.9	18.2	19.2	20.9	20.0	20.9	19.2	18.2	17.9	18.2	19.2
50°	14.4	14.3	15.4	17.0	16.0	17.0	15.4	14.3	14.4	14.3	15.4
50.5°	10.9	11.3	11.9	13.5	12.6	13.5	11.9	11.3	10.9	11.3	11.9
51°	8.4	8.6	9.7	10.8	10.0	10.8	9.7	8.6	8.4	8.6	9.7
51.5°	6.3	7.1	7.7	9.0	8.9	9.0	7.7	7.1	6.3	7.1	7.7
52°	5.5	5.9	6.5	7.1	7.8	7.1	6.5	5.9	5.5	5.9	6.5
52.5°	5.0	5.1	5.6	6.0	6.6	6.0	5.6	5.1	5.0	5.1	5.6
53°	4.7	4.8	4.8	5.2	5.5	5.2	4.8	4.8	4.7	4.8	4.8
53.5°	4.5	4.5	4.6	4.5	4.4	4.5	4.6	4.5	4.5	4.5	4.6
54°	4.3	4.3	4.3	4.3	4.2	4.3	4.3	4.3	4.3	4.3	4.3
54.5°	4.1	4.1	4.1	4.1	4.0	4.1	4.1	4.1	4.1	4.1	4.1
55°	3.9	3.9	3.9	3.9	3.8	3.9	3.9	3.9	3.9	3.9	3.9
55.5°	3.7	3.7	3.7	3.7	3.6	3.7	3.7	3.7	3.7	3.7	3.7
56°	3.5	3.5	3.5	3.5	3.4	3.5	3.5	3.5	3.5	3.5	3.5
56.5°	3.3	3.3	3.4	3.3	3.2	3.3	3.4	3.3	3.3	3.3	3.4
57°	3.1	3.1	3.2	3.1	3.1	3.1	3.2	3.1	3.1	3.1	3.2
57.5°	2.9	3.0	3.0	2.9	2.9	2.9	3.0	3.0	2.9	3.0	3.0
58°	2.8	2.8	2.8	2.8	2.7	2.8	2.8	2.8	2.8	2.8	2.8
58.5°	2.6	2.7	2.7	2.6	2.6	2.6	2.7	2.7	2.6	2.7	2.7
59°	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.5
59.5°	2.3	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.3	2.4	2.4
60°	2.2	2.2	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.3
60.5°	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2
61°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
61.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
62°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
62.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
63°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
63.5°	1.5	1.5	1.6	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.6
64°	1.4	1.4	1.5	1.5	1.4	1.5	1.5	1.4	1.4	1.4	1.5
64.5°	1.3	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.3	1.4	1.4
65°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
65.5°	1.2	1.2	1.3	1.2	1.2	1.2	1.3	1.2	1.2	1.2	1.3
66°	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.2



TEST NUMBER: P775840

CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
68°	0.9	0.9	1.0	1.0	0.9	1.0	1.0	0.9	0.9	0.9	1.0
68.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
69°	0.8	0.8	0.9	0.9	0.8	0.9	0.9	0.8	0.8	0.8	0.9
69.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
70°	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.8
70.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
71°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
71.5°	0.6	0.6	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.6	0.7
72°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
73°	0.5	0.5	0.5	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.5
73.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
74°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
74.5°	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5
75°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
76°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
76.5°	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
77°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
77.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
78°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
78.5°	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
79°	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2
79.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
80°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
80.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
81°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
81.5°	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
82°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
82.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
83°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
83.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
84°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
84.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
85°	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
85.5°	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775840
CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775840

CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1822.3	1822.3	1822.3	1822.3	1822.3	1822.3
0.5°	1820.8	1822.8	1820.8	1822.6	1821.7	1821.5
1°	1819.7	1821.8	1819.7	1821.4	1820.0	1819.6
1.5°	1817.9	1820.1	1817.9	1819.2	1817.1	1816.2
2°	1815.2	1818.3	1815.2	1816.1	1812.9	1811.7
2.5°	1811.6	1815.0	1811.6	1811.8	1807.8	1805.9
3°	1806.7	1810.6	1806.7	1806.6	1801.7	1799.2
3.5°	1800.5	1804.9	1800.5	1800.2	1794.7	1791.4
4°	1793.0	1797.8	1793.0	1792.6	1787.1	1782.7
4.5°	1784.4	1789.2	1784.4	1783.5	1778.1	1772.6
5°	1774.4	1779.0	1774.4	1773.1	1768.1	1761.2
5.5°	1763.2	1767.2	1763.2	1760.7	1756.6	1748.4
6°	1750.7	1753.2	1750.7	1746.9	1743.7	1734.5
6.5°	1736.8	1737.7	1736.8	1731.3	1729.2	1719.3
7°	1721.9	1720.5	1721.9	1714.4	1713.0	1703.3
7.5°	1705.6	1702.5	1705.6	1695.8	1695.2	1686.3
8°	1687.9	1683.1	1687.9	1676.4	1676.0	1668.1
8.5°	1668.5	1663.3	1668.5	1655.7	1654.7	1648.2
9°	1647.3	1642.2	1647.3	1634.2	1631.9	1626.9
9.5°	1624.2	1621.5	1624.2	1612.4	1607.1	1603.5
10°	1599.0	1599.8	1599.0	1589.6	1581.3	1578.6
10.5°	1572.3	1577.5	1572.3	1566.1	1553.9	1552.2
11°	1544.4	1553.1	1544.4	1541.7	1525.9	1525.2
11.5°	1515.5	1526.2	1515.5	1515.3	1497.6	1497.1
12°	1486.9	1497.4	1486.9	1486.4	1469.2	1468.8
12.5°	1457.8	1465.3	1457.8	1455.1	1441.4	1439.0
13°	1428.2	1433.1	1428.2	1422.8	1413.1	1409.6
13.5°	1396.7	1398.5	1396.7	1389.0	1384.0	1379.2
14°	1363.9	1363.8	1363.9	1355.4	1353.4	1348.6
14.5°	1330.7	1329.5	1330.7	1322.1	1320.6	1316.8
15°	1296.4	1294.9	1296.4	1288.6	1286.2	1283.8
15.5°	1262.3	1262.6	1262.3	1255.3	1250.0	1248.6
16°	1227.9	1229.4	1227.9	1221.7	1213.7	1212.8
16.5°	1193.8	1197.4	1193.8	1187.2	1177.7	1175.0
17°	1159.9	1164.5	1159.9	1152.2	1141.7	1138.5
17.5°	1124.9	1129.4	1124.9	1115.5	1106.0	1101.6
18°	1088.2	1092.1	1088.2	1077.9	1069.2	1066.0
18.5°	1048.9	1051.9	1048.9	1038.7	1032.0	1029.0
19°	1005.9	1009.0	1005.9	998.3	993.1	991.1
19.5°	961.3	964.2	961.3	955.5	951.6	951.4
20°	914.8	913.3	914.8	911.6	909.5	909.5
20.5°	867.6	863.2	867.6	867.7	866.8	868.3
21°	824.8	823.4	824.8	821.1	824.8	825.8



TEST NUMBER: P775840

CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	725.9	722.5	725.9	718.2	711.8	707.1
23°	699.7	699.8	699.7	689.2	682.6	679.4
23.5°	672.8	674.1	672.8	662.7	658.5	659.0
24°	650.1	650.7	650.1	641.9	639.3	637.1
24.5°	628.9	628.9	628.9	623.6	621.3	620.2
25°	612.9	612.7	612.9	608.1	605.7	604.3
25.5°	597.2	597.5	597.2	592.7	590.2	589.5
26°	581.0	581.5	581.0	577.6	575.8	575.2
26.5°	567.1	567.4	567.1	564.0	561.9	561.7
27°	554.7	555.7	554.7	550.8	548.6	548.0
27.5°	541.8	543.2	541.8	538.0	535.9	535.1
28°	528.5	529.8	528.5	525.7	523.7	522.9
28.5°	516.1	517.2	516.1	513.9	512.0	511.6
29°	504.3	505.5	504.3	502.4	500.6	500.3
29.5°	493.4	494.4	493.4	491.3	489.8	489.2
30°	482.4	483.4	482.4	480.4	479.0	478.4
30.5°	471.7	472.4	471.7	469.8	468.4	467.9
31°	461.4	462.4	461.4	459.4	458.1	457.6
31.5°	451.4	452.1	451.4	449.6	448.2	447.7
32°	441.7	442.4	441.7	439.9	438.6	438.2
32.5°	432.1	432.7	432.1	430.4	429.5	429.1
33°	421.8	422.4	421.8	421.0	420.5	420.3
33.5°	410.6	411.5	410.6	411.0	411.2	411.2
34°	399.0	401.0	399.0	400.3	400.5	400.9
34.5°	387.0	388.5	387.0	388.7	388.8	389.7
35°	374.9	375.9	374.9	376.5	376.5	377.7
35.5°	362.1	362.7	362.1	363.5	364.1	364.6
36°	348.9	349.0	348.9	349.7	350.8	351.0
36.5°	334.9	334.3	334.9	335.4	337.0	336.6
37°	320.6	319.8	320.6	320.9	322.3	321.1
37.5°	305.7	305.4	305.7	306.2	306.6	305.7
38°	290.9	290.6	290.9	290.5	291.0	290.3
38.5°	274.7	275.5	274.7	274.6	274.4	274.8
39°	258.7	260.3	258.7	258.7	258.2	259.1
39.5°	243.4	244.6	243.4	242.8	242.1	242.6
40°	228.3	229.2	228.3	227.4	226.5	226.1
40.5°	213.8	213.7	213.8	211.6	210.7	209.7
41°	198.8	198.4	198.8	196.2	194.9	193.8
41.5°	184.0	183.3	184.0	180.9	179.2	177.8
42°	169.3	168.8	169.3	166.2	163.9	162.5
42.5°	155.3	155.0	155.3	152.1	149.1	147.8
43°	142.0	141.7	142.0	138.4	135.3	133.6
43.5°	128.4	128.7	128.4	124.9	121.8	120.9



TEST NUMBER: P775840

CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	91.5	92.8	91.5	88.3	84.9	84.5
45.5°	80.4	82.1	80.4	77.6	73.8	72.9
46°	70.7	72.5	70.7	67.5	63.4	62.7
46.5°	61.9	64.0	61.9	57.9	54.6	53.4
47°	53.4	55.4	53.4	48.9	46.4	45.0
47.5°	45.4	46.9	45.4	41.5	39.2	37.8
48°	38.1	38.4	38.1	34.6	33.0	31.3
48.5°	31.6	31.1	31.6	28.6	27.3	25.8
49°	26.0	25.2	26.0	23.2	22.3	21.4
49.5°	20.9	20.0	20.9	19.2	18.2	17.9
50°	17.0	16.0	17.0	15.4	14.3	14.4
50.5°	13.5	12.6	13.5	11.9	11.3	10.9
51°	10.8	10.0	10.8	9.7	8.6	8.4
51.5°	9.0	8.9	9.0	7.7	7.1	6.3
52°	7.1	7.8	7.1	6.5	5.9	5.5
52.5°	6.0	6.6	6.0	5.6	5.1	5.0
53°	5.2	5.5	5.2	4.8	4.8	4.7
53.5°	4.5	4.4	4.5	4.6	4.5	4.5
54°	4.3	4.2	4.3	4.3	4.3	4.3
54.5°	4.1	4.0	4.1	4.1	4.1	4.1
55°	3.9	3.8	3.9	3.9	3.9	3.9
55.5°	3.7	3.6	3.7	3.7	3.7	3.7
56°	3.5	3.4	3.5	3.5	3.5	3.5
56.5°	3.3	3.2	3.3	3.4	3.3	3.3
57°	3.1	3.1	3.1	3.2	3.1	3.1
57.5°	2.9	2.9	2.9	3.0	3.0	2.9
58°	2.8	2.7	2.8	2.8	2.8	2.8
58.5°	2.6	2.6	2.6	2.7	2.7	2.6
59°	2.5	2.4	2.5	2.5	2.5	2.5
59.5°	2.4	2.3	2.4	2.4	2.4	2.3
60°	2.2	2.2	2.2	2.3	2.2	2.2
60.5°	2.1	2.1	2.1	2.2	2.1	2.1
61°	2.0	2.0	2.0	2.0	2.0	2.0
61.5°	1.9	1.9	1.9	1.9	1.9	1.9
62°	1.8	1.8	1.8	1.8	1.8	1.8
62.5°	1.7	1.7	1.7	1.7	1.7	1.7
63°	1.6	1.6	1.6	1.6	1.6	1.6
63.5°	1.5	1.5	1.5	1.6	1.5	1.5
64°	1.5	1.4	1.5	1.5	1.4	1.4
64.5°	1.4	1.3	1.4	1.4	1.4	1.3
65°	1.3	1.3	1.3	1.3	1.3	1.3
65.5°	1.2	1.2	1.2	1.3	1.2	1.2
66°	1.2	1.2	1.2	1.2	1.2	1.1



TEST NUMBER: P775840

CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.0	1.0	1.0	1.0	1.0	1.0
68°	1.0	0.9	1.0	1.0	0.9	0.9
68.5°	0.9	0.9	0.9	0.9	0.9	0.9
69°	0.9	0.8	0.9	0.9	0.8	0.8
69.5°	0.8	0.8	0.8	0.8	0.8	0.8
70°	0.8	0.8	0.8	0.8	0.7	0.7
70.5°	0.7	0.7	0.7	0.7	0.7	0.7
71°	0.7	0.7	0.7	0.7	0.7	0.7
71.5°	0.7	0.6	0.7	0.7	0.6	0.6
72°	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	0.6	0.6	0.6	0.6	0.6	0.6
73°	0.6	0.5	0.6	0.5	0.5	0.5
73.5°	0.5	0.5	0.5	0.5	0.5	0.5
74°	0.5	0.5	0.5	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.4	0.4
75°	0.4	0.4	0.4	0.4	0.4	0.4
75.5°	0.4	0.4	0.4	0.4	0.4	0.4
76°	0.4	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.3	0.3	0.3
77°	0.3	0.3	0.3	0.3	0.3	0.3
77.5°	0.3	0.3	0.3	0.3	0.3	0.3
78°	0.3	0.3	0.3	0.3	0.3	0.3
78.5°	0.3	0.3	0.3	0.3	0.2	0.2
79°	0.3	0.2	0.3	0.2	0.2	0.2
79.5°	0.2	0.2	0.2	0.2	0.2	0.2
80°	0.2	0.2	0.2	0.2	0.2	0.2
80.5°	0.2	0.2	0.2	0.2	0.2	0.2
81°	0.2	0.2	0.2	0.2	0.2	0.2
81.5°	0.2	0.2	0.2	0.2	0.1	0.1
82°	0.1	0.1	0.1	0.1	0.1	0.1
82.5°	0.1	0.1	0.1	0.1	0.1	0.1
83°	0.1	0.1	0.1	0.1	0.1	0.1
83.5°	0.1	0.1	0.1	0.1	0.1	0.1
84°	0.1	0.1	0.1	0.1	0.1	0.1
84.5°	0.1	0.1	0.1	0.1	0.1	0.1
85°	0.1	0.1	0.1	0.1	0.0	0.0
85.5°	0.1	0.1	0.1	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775840
CATALOG NUMBER: HCDJBL510CSD-HCD82TRC-1000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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21.5°	782.6	782.1	783.5	787.9	787.3	787.9	783.5	782.1	782.6	782.1	783.5
22°	738.7	745.7	749.0	754.8	754.1	754.8	749.0	745.7	738.7	745.7	749.0



44°	108.4	109.2	112.0	115.5	115.9	115.5	112.0	109.2	108.4	109.2	112.0
44.5°	96.3	96.8	99.5	103.1	104.1	103.1	99.5	96.8	96.3	96.8	99.5



66.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
67°	1.0	1.0	1.1	1.1	1.0	1.1	1.1	1.0	1.0	1.0	1.1



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	787.9	787.3	787.9	783.5	782.1	782.6
22°	754.8	754.1	754.8	749.0	745.7	738.7

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44°	115.5	115.9	115.5	112.0	109.2	108.4
44.5°	103.1	104.1	103.1	99.5	96.8	96.3

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66.5°	1.1	1.1	1.1	1.1	1.1	1.1
67°	1.1	1.0	1.1	1.1	1.0	1.0

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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(END OF REPORT)