

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO COMMERCIAL

Report Number: P583906

Luminaire Tested: **HC815D010-HM80520927-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P583906  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC815D010-HM80520927-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1236.0 lumens  
Efficiency: N/A  
Efficacy: 88.3 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.08 / 1.17  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

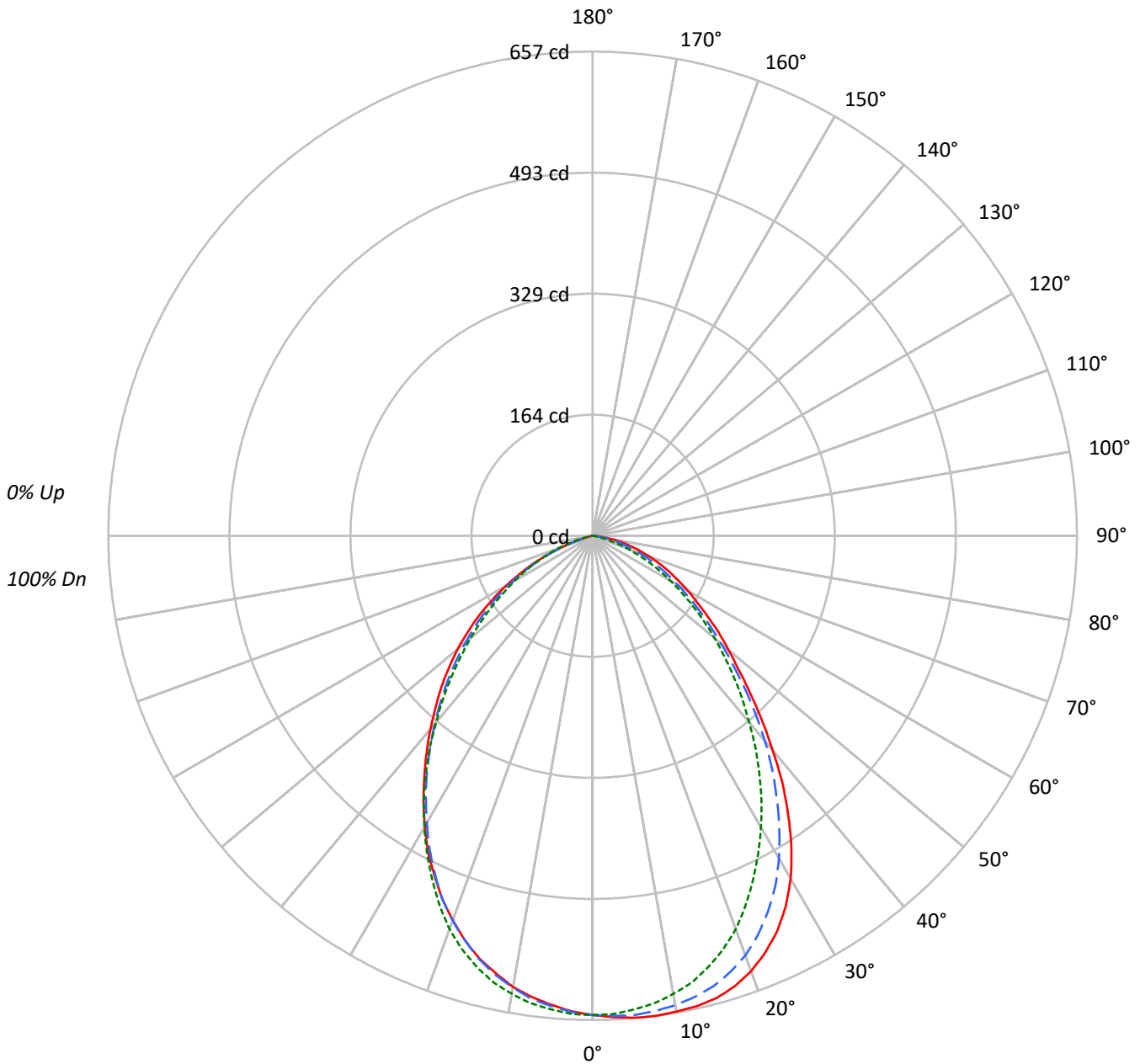
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	85	82	79	77								
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67								
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59								
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52								
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47								
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42								
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38								
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35								
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	20053	20053	20053
5°	20318	19972	19780
10°	20525	19764	19467
15°	20735	19346	18957
20°	20628	18633	18206
25°	20146	17519	17281
30°	19135	16262	16201
35°	17418	14839	14971
40°	15276	13280	13771
45°	13174	11814	12647
50°	11537	10372	11451
55°	10220	8914	10080
60°	9208	7499	8350
65°	8303	6020	6399
70°	7276	4382	3516
75°	6207	2288	929
80°	4777	622	142
85°	3078	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	61.4	5.0
10°-20°	172.5	14.0
20°-30°	244.8	19.8
30°-40°	257.7	20.9
40°-50°	219.2	17.7
50°-60°	158.4	12.8
60°-70°	90.1	7.3
70°-80°	28.4	2.3
80°-90°	3.4	0.3
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°	478.7	38.7
0°-40°	736.4	59.6
0°-60°	1114.0	90.1
0°-90°	1236.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1236.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	650	650	650	650	650	
5°	656	653	645	641	639	63
15°	650	633	606	595	594	183
25°	592	563	515	506	508	271
35°	463	436	394	392	398	288
45°	302	291	271	278	290	235
55°	190	176	166	175	188	171
65°	114	98	82	82	88	113
75°	52	40	19	9	8	56
85°	9	5	0	0	0	11
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3
2.5°	653.8	654.7	652.9	652.9	654.7	652.9	653.8	653.8	652.9	652.9	652.0
5°	656.4	655.5	655.5	655.5	656.4	654.7	653.8	654.7	652.9	652.9	652.9
7.5°	657.2	657.2	656.4	655.5	655.5	655.5	654.7	653.8	652.9	651.2	650.3
10°	655.5	655.5	656.4	654.7	654.7	652.9	652.9	651.2	651.2	649.5	646.8
12.5°	653.8	652.9	652.9	651.2	651.2	649.5	649.5	646.8	646.0	643.3	640.8
15°	649.5	648.5	646.8	646.0	645.2	644.2	642.5	641.7	639.0	635.5	633.0
17.5°	640.8	639.9	639.0	637.3	635.5	634.7	633.8	631.2	627.7	625.2	620.8
20°	628.6	627.7	627.7	625.2	624.3	621.7	620.8	617.3	614.7	609.5	606.0
22.5°	612.1	613.0	611.3	609.5	607.8	605.2	603.5	600.0	595.6	590.4	586.1
25°	592.1	593.0	591.3	589.5	587.0	585.1	583.5	578.3	573.9	567.8	562.6
27.5°	567.0	567.0	567.0	565.3	560.9	560.0	558.3	553.1	546.9	541.8	536.6
30°	537.4	536.6	536.6	533.9	532.2	528.8	526.1	521.8	517.4	511.4	505.4
32.5°	501.9	502.7	500.1	498.4	495.7	495.7	492.2	488.9	483.6	477.5	471.5
35°	462.7	463.7	461.9	461.0	456.7	455.9	455.0	450.7	447.2	442.8	435.8
37.5°	422.8	422.0	421.1	421.1	418.5	416.8	415.0	412.5	407.2	403.7	400.3
40°	379.5	379.5	379.5	378.6	377.6	376.0	375.1	373.3	369.8	366.4	363.8
42.5°	340.3	340.3	339.4	338.6	336.9	337.8	336.0	334.3	330.8	328.2	326.4
45°	302.1	302.1	302.1	303.1	301.2	298.7	298.7	296.9	295.2	293.4	290.9
47.5°	268.2	270.9	269.2	268.2	269.2	265.7	265.7	263.9	262.2	260.5	257.0
50°	240.5	240.5	240.5	238.7	237.9	237.9	235.3	233.5	232.7	231.0	227.5
52.5°	215.3	213.6	213.6	212.7	211.8	210.2	210.2	208.3	204.8	203.2	200.5
55°	190.1	190.1	189.3	188.5	187.5	186.7	185.8	183.2	181.5	178.8	176.3
57.5°	167.6	169.3	168.5	166.7	165.0	165.0	163.3	161.5	158.9	156.3	153.6
60°	149.3	148.5	148.5	147.6	145.8	145.0	144.1	141.5	138.9	136.3	133.8
62.5°	130.3	130.3	130.3	128.5	126.8	125.9	125.1	123.3	119.8	117.2	115.4
65°	113.8	112.9	111.9	111.1	110.3	108.6	107.6	105.9	103.3	100.7	98.1
67.5°	97.2	96.4	96.4	95.6	92.9	92.1	92.1	89.4	86.9	84.2	81.6
70°	80.7	80.7	80.7	79.0	78.1	77.2	76.4	74.7	72.1	69.4	66.9
72.5°	66.9	66.0	66.0	65.1	62.5	61.7	60.7	59.0	56.4	54.7	53.0
75°	52.1	52.1	51.2	50.4	49.5	48.6	47.7	46.0	43.4	40.8	39.9
77.5°	39.9	39.0	39.0	38.2	36.5	35.5	35.5	33.9	31.2	29.5	27.8
80°	26.9	27.8	26.9	26.0	25.2	24.3	23.5	22.5	20.8	19.2	17.4
82.5°	16.5	17.4	16.5	16.5	15.7	14.7	14.7	13.0	12.2	11.3	10.4
85°	8.7	8.7	8.7	8.7	7.8	7.8	7.8	7.0	6.0	5.2	5.2
87.5°	2.7	3.5	2.7	2.7	2.7	2.7	2.7	2.7	1.7	1.7	1.7
90°	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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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3
2.5°	652.9	652.0	651.2	651.2	651.2	651.2	651.2	650.3	649.5	649.5	649.5
5°	651.2	651.2	651.2	650.3	649.5	649.5	647.7	646.8	646.0	645.2	644.2
7.5°	649.5	647.7	646.8	646.0	645.2	645.2	643.3	641.7	641.7	639.9	638.2
10°	644.2	643.3	641.7	639.9	639.0	638.2	636.5	633.8	633.0	631.2	629.5
12.5°	638.2	636.5	634.7	631.2	630.3	629.5	626.0	623.3	621.7	620.8	616.5
15°	630.3	626.8	624.3	620.0	619.0	617.3	614.7	612.1	608.6	606.0	604.3
17.5°	616.5	613.0	608.6	604.3	602.6	602.6	598.2	594.8	590.4	588.6	585.1
20°	600.0	595.6	592.1	587.0	584.3	581.8	579.1	573.9	570.4	567.8	563.5
22.5°	580.8	574.8	570.4	565.3	560.9	558.3	553.9	549.6	545.3	542.6	539.2
25°	556.6	551.3	544.4	539.2	536.6	533.1	527.9	523.6	519.2	514.9	513.1
27.5°	529.6	522.7	516.6	510.6	507.9	505.4	499.2	494.0	490.6	486.2	484.5
30°	500.1	493.2	486.2	481.0	478.4	474.0	470.6	464.5	460.2	456.7	452.4
32.5°	466.2	461.0	455.0	447.2	445.4	442.0	436.7	434.2	428.9	426.3	422.8
35°	429.8	426.3	420.2	414.2	411.5	409.8	405.5	400.3	396.8	394.2	392.5
37.5°	395.0	390.7	384.6	380.3	378.6	376.0	370.8	368.1	364.6	362.9	359.5
40°	357.8	353.4	349.1	346.4	343.8	342.1	338.6	336.0	332.6	329.9	329.1
42.5°	321.3	318.6	315.2	311.7	310.9	308.2	306.4	303.9	301.2	300.4	297.8
45°	288.2	285.7	282.2	278.7	277.9	276.1	275.2	272.6	270.9	270.9	270.9
47.5°	255.2	252.7	249.2	247.5	248.4	244.9	244.9	244.0	242.2	242.2	243.0
50°	225.7	222.3	221.4	219.7	218.0	216.2	217.0	214.5	214.5	216.2	215.3
52.5°	198.0	194.5	193.6	191.8	191.0	191.0	190.1	190.1	189.3	190.1	190.1
55°	172.8	170.1	168.5	166.7	165.8	165.8	165.8	165.0	164.1	165.8	166.7
57.5°	150.3	149.3	147.6	145.0	144.1	143.3	142.4	142.4	142.4	142.4	143.3
60°	130.3	128.5	126.8	124.1	124.1	123.3	122.4	121.6	121.6	121.6	121.6
62.5°	112.9	110.3	107.6	105.9	105.1	104.2	103.3	101.6	101.6	101.6	101.6
65°	95.6	92.9	91.2	89.4	87.7	87.7	85.9	85.1	83.4	82.5	80.7
67.5°	79.0	77.2	75.6	72.9	72.1	71.2	69.4	68.6	66.0	65.1	64.2
70°	64.2	61.7	59.9	58.2	57.4	55.6	53.9	52.1	50.4	48.6	46.9
72.5°	50.4	47.7	46.0	44.2	42.5	42.5	39.9	38.2	35.5	33.9	31.2
75°	37.4	34.7	33.0	30.4	29.5	28.7	26.0	24.3	21.7	19.2	17.4
77.5°	25.2	23.5	21.7	19.2	17.4	17.4	14.7	13.0	11.3	8.7	7.8
80°	15.7	13.9	12.2	10.4	10.4	8.7	7.8	6.0	4.3	3.5	2.7
82.5°	8.7	7.8	7.0	5.2	5.2	4.3	3.5	2.7	1.7	0.8	0.8
85°	4.3	3.5	2.7	2.7	1.7	1.7	1.7	0.8	0.8	0.0	0.0
87.5°	1.7	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0
90°	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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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3
2.5°	648.5	648.5	647.7	647.7	647.7	646.8	647.7	646.8	646.8	646.8	647.7
5°	645.2	643.3	643.3	642.5	642.5	641.7	642.5	641.7	640.8	639.9	640.8
7.5°	638.2	636.5	635.5	634.7	634.7	634.7	633.8	633.0	633.8	631.2	633.0
10°	628.6	627.7	626.0	625.2	624.3	625.2	624.3	622.5	622.5	622.5	621.7
12.5°	616.5	614.7	613.8	613.0	611.3	611.3	612.1	610.3	610.3	608.6	608.6
15°	601.7	600.0	598.2	598.2	596.5	596.5	595.6	595.6	594.8	593.8	593.8
17.5°	583.5	580.8	579.1	580.0	579.1	578.3	578.3	576.5	575.6	576.5	576.5
20°	561.8	560.0	558.3	559.1	557.4	556.6	557.4	554.8	555.6	555.6	555.6
22.5°	537.4	536.6	533.9	533.9	532.2	531.4	532.2	532.2	533.1	532.2	532.2
25°	510.6	508.8	507.1	507.1	506.2	505.4	506.2	507.1	506.2	507.1	507.1
27.5°	481.9	479.2	479.2	477.5	477.5	478.4	477.5	478.4	479.2	479.2	481.0
30°	450.7	449.7	448.9	448.0	448.0	448.9	448.9	448.9	449.7	451.5	451.5
32.5°	421.1	419.3	417.7	417.7	419.3	418.5	419.3	419.3	421.1	421.1	422.8
35°	389.0	389.0	387.3	388.1	388.1	388.1	388.1	389.8	391.6	392.5	394.2
37.5°	359.5	356.8	357.8	357.8	358.6	357.8	360.3	360.3	362.1	362.1	363.8
40°	327.3	327.3	328.2	327.3	328.2	328.2	329.9	331.6	332.6	334.3	335.1
42.5°	296.9	298.7	296.9	297.8	298.7	299.6	300.4	301.2	304.7	306.4	309.1
45°	269.2	270.0	270.9	271.7	270.9	272.6	273.5	275.2	277.9	278.7	279.6
47.5°	242.2	243.0	244.0	244.9	244.9	246.5	247.5	249.2	250.9	251.8	252.7
50°	216.2	218.0	218.8	218.8	219.7	221.4	223.2	223.2	224.9	227.5	228.3
52.5°	192.8	192.8	194.5	195.3	196.2	196.2	198.8	199.7	200.5	202.3	204.0
55°	166.7	169.3	170.1	170.1	172.0	173.6	174.5	175.3	175.3	178.8	178.8
57.5°	144.1	145.0	146.8	146.8	146.8	149.3	149.3	151.1	152.0	152.8	154.6
60°	121.6	123.3	123.3	124.1	123.3	125.1	125.9	127.6	128.5	129.4	130.3
62.5°	100.7	100.7	101.6	101.6	101.6	101.6	103.3	103.3	105.1	105.9	106.8
65°	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	81.6	81.6	83.4
67.5°	62.5	61.7	59.9	60.7	59.9	59.9	59.0	59.0	59.9	59.9	61.7
70°	45.2	44.2	42.5	42.5	41.7	40.8	39.9	39.0	38.2	38.2	38.2
72.5°	29.5	27.8	25.2	24.3	24.3	22.5	20.8	20.0	20.0	20.0	20.0
75°	14.7	13.0	11.3	10.4	10.4	8.7	9.5	8.7	8.7	8.7	8.7
77.5°	6.0	4.3	3.5	3.5	3.5	2.7	2.7	2.7	2.7	2.7	2.7
80°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	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
90°	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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**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	650.3	650.3	650.3	650.3	650.3	650.3	650.3	650.3
2.5°	646.8	646.8	645.2	646.0	646.0	646.0	646.0	646.0
5°	639.0	639.9	639.0	639.9	639.9	639.0	639.0	639.0
7.5°	631.2	632.0	631.2	632.0	632.0	632.0	631.2	631.2
10°	621.7	621.7	621.7	621.7	621.7	620.8	621.7	621.7
12.5°	608.6	608.6	608.6	609.5	609.5	608.6	608.6	607.8
15°	594.8	593.0	593.8	594.8	593.8	593.8	593.8	593.8
17.5°	575.6	576.5	575.6	575.6	575.6	575.6	576.5	575.6
20°	555.6	555.6	556.6	555.6	555.6	555.6	555.6	554.8
22.5°	533.1	532.2	532.2	533.1	533.1	532.2	533.1	533.1
25°	507.9	508.8	507.9	507.9	508.8	508.8	508.8	507.9
27.5°	481.0	481.9	482.7	481.9	481.9	481.9	482.7	483.6
30°	453.2	455.0	453.2	453.2	455.0	454.0	455.0	455.0
32.5°	423.7	426.3	424.5	426.3	426.3	427.2	426.3	427.2
35°	394.2	396.8	396.8	396.8	397.7	398.5	398.5	397.7
37.5°	366.4	367.3	367.3	369.0	369.8	370.8	370.8	369.8
40°	337.8	339.4	340.3	340.3	340.3	342.1	343.8	342.1
42.5°	309.9	310.9	311.7	311.7	313.4	314.3	315.2	315.2
45°	283.1	284.7	285.7	286.5	287.4	289.1	288.2	290.0
47.5°	255.2	257.9	258.7	259.6	261.4	262.2	263.1	263.9
50°	230.0	231.8	231.8	233.5	236.2	236.2	237.9	238.7
52.5°	204.8	205.8	206.7	207.5	209.2	211.0	211.0	212.7
55°	180.6	181.5	181.5	182.3	183.2	186.7	187.5	187.5
57.5°	155.4	155.4	157.1	158.0	158.9	160.6	160.6	160.6
60°	131.1	131.9	131.9	132.8	133.8	135.4	136.3	135.4
62.5°	106.8	107.6	107.6	108.6	110.3	111.1	110.3	110.3
65°	84.2	85.1	85.1	85.9	87.7	87.7	86.9	87.7
67.5°	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7
70°	39.0	38.2	37.4	38.2	38.2	38.2	37.4	39.0
72.5°	19.2	20.0	20.0	20.0	20.0	20.0	20.0	19.2
75°	8.7	8.7	7.8	7.8	7.8	8.7	8.7	7.8
77.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	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
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)