

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: P583778

Luminaire Tested: **HC810D010-HM80520927-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P583778  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC810D010-HM80520927-81WWW  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 859.9 lumens  
Efficiency: N/A  
Efficacy: 86.9 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.04 / 1.13  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

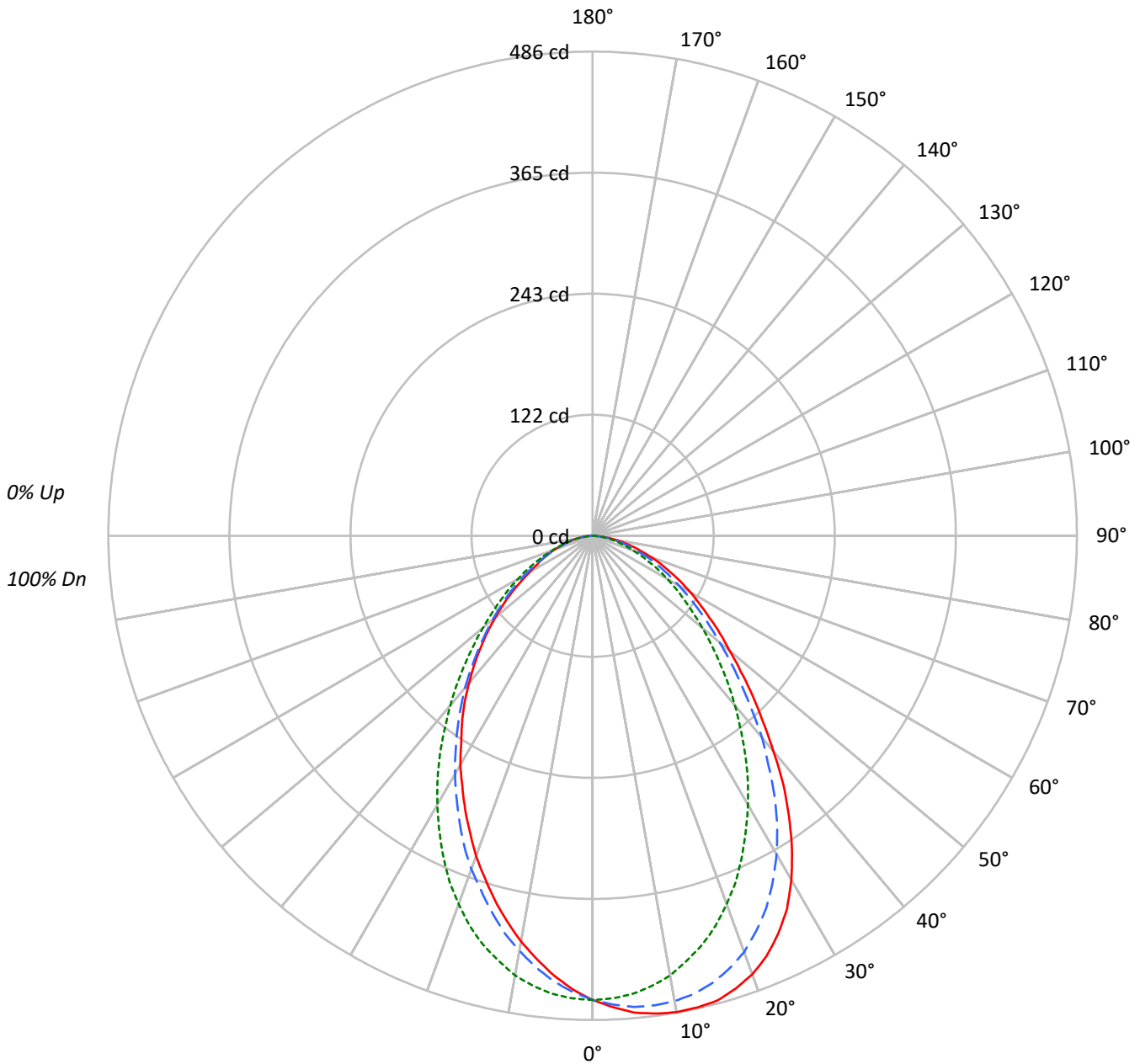
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
RC	80									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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76																			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66																			
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41																			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38																			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34																			
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32																			

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

	0°	90°	180°
0°	14367	14367	14367
5°	14870	14288	13719
10°	15202	14034	12948
15°	15419	13565	12093
20°	15371	12906	11226
25°	14994	12068	10303
30°	14204	11099	9454
35°	12923	10043	8594
40°	11352	8932	7761
45°	9895	7858	6921
50°	8616	6884	6097
55°	7683	6048	5306
60°	6975	5298	4521
65°	6268	4611	4108
70°	5581	3931	3706
75°	4897	3312	3169
80°	4155	2681	2788
85°	3149	1981	2264



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.6	5.1
10°-20°	120.3	14.0
20°-30°	166.9	19.4
30°-40°	172.6	20.1
40°-50°	144.5	16.8
50°-60°	104.9	12.2
60°-70°	66.2	7.7
70°-80°	32.8	3.8
80°-90°	8.1	0.9
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°	330.8	38.5
0°-40°	503.4	58.5
0°-60°	752.8	87.5
0°-90°	859.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	859.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	466	466	466	466	466	
5°	480	475	462	449	443	46
15°	483	465	425	391	379	136
25°	441	412	355	316	303	202
35°	343	318	267	236	228	214
45°	227	210	180	162	159	176
55°	143	130	112	103	99	129
65°	86	75	63	56	56	86
75°	41	34	28	27	27	44
85°	9	7	6	6	6	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°	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9
2.5°	473.6	473.6	474.2	473.6	473.6	473.6	472.9	472.9	472.3	472.3	470.9
5°	480.4	479.2	480.4	479.2	479.2	479.2	478.6	477.3	476.7	475.4	474.8
7.5°	483.7	483.0	483.0	482.4	482.4	481.8	481.2	480.4	477.9	477.3	475.4
10°	485.5	484.9	484.9	484.3	483.0	483.0	481.8	481.2	477.9	476.7	474.2
12.5°	484.9	484.9	484.9	484.3	482.4	481.8	480.4	478.6	476.1	473.6	470.9
15°	483.0	483.0	481.8	481.2	479.2	477.9	477.3	474.2	471.7	468.4	464.7
17.5°	476.7	476.7	476.1	474.8	472.9	471.7	470.3	467.2	464.7	459.6	455.8
20°	468.4	467.8	467.2	465.3	463.4	462.8	460.8	456.5	453.3	449.5	444.5
22.5°	456.5	455.8	455.2	453.9	450.8	449.5	448.2	445.1	439.5	435.6	429.2
25°	440.7	440.7	439.5	437.5	434.3	433.1	431.2	428.0	423.0	417.2	412.2
27.5°	422.3	421.7	419.7	418.5	416.0	414.1	411.0	407.1	402.1	397.6	391.4
30°	398.9	398.9	397.6	395.8	392.6	391.4	388.8	384.4	379.4	373.6	369.3
32.5°	372.4	372.4	370.5	369.3	367.3	364.2	363.5	358.4	354.0	349.7	344.6
35°	343.3	343.9	342.7	340.2	336.9	336.9	335.7	331.3	326.2	321.8	318.0
37.5°	314.2	312.3	311.7	310.5	308.6	306.0	304.7	302.8	298.5	295.2	289.6
40°	282.0	282.6	281.4	280.1	279.5	277.5	276.9	273.7	270.6	266.8	264.3
42.5°	252.9	252.9	252.9	251.6	250.4	248.5	247.9	245.9	242.1	239.6	235.8
45°	226.9	225.0	225.0	224.4	223.8	222.5	220.7	219.4	216.8	214.9	210.5
47.5°	201.7	202.3	201.7	201.1	199.2	198.6	197.8	195.3	192.8	190.9	187.8
50°	179.6	180.8	179.6	179.6	178.3	177.7	176.3	174.5	172.6	169.5	166.2
52.5°	161.2	161.2	160.6	160.0	158.1	156.7	156.1	155.5	152.4	149.9	147.4
55°	142.9	143.5	143.5	141.6	141.0	139.7	139.1	137.1	135.9	132.1	130.3
57.5°	127.1	126.5	127.1	125.8	124.5	123.3	122.6	121.4	119.5	117.0	114.4
60°	113.1	111.9	111.9	111.3	110.0	109.4	108.1	106.3	104.3	101.8	99.9
62.5°	99.3	98.7	98.0	97.4	96.0	95.4	94.8	92.9	91.0	89.2	87.3
65°	85.9	85.9	85.3	84.1	83.4	82.8	82.2	80.9	78.4	77.2	75.2
67.5°	73.9	73.3	73.3	72.1	70.8	70.2	70.2	68.9	67.1	65.1	63.8
70°	61.9	62.6	61.9	61.3	60.1	60.1	58.8	58.2	55.7	55.1	53.1
72.5°	51.2	51.2	50.6	50.6	49.3	48.7	48.7	47.4	46.2	44.8	43.6
75°	41.1	41.1	41.1	40.5	39.8	38.6	38.6	38.0	36.7	35.5	34.1
77.5°	32.2	31.6	31.6	31.0	30.3	29.7	29.7	29.1	27.8	27.2	26.0
80°	23.4	22.7	22.7	22.7	21.5	22.1	21.5	20.9	20.2	19.6	19.0
82.5°	15.1	15.7	15.7	15.1	14.5	14.5	14.5	13.9	13.9	13.2	12.6
85°	8.9	8.9	8.9	8.9	8.2	8.2	8.2	7.6	7.6	7.6	7.0
87.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.1	3.1	3.1	3.1	3.1
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°	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9
2.5°	470.9	469.7	469.1	468.4	468.4	467.8	467.2	465.9	465.9	464.7	464.1
5°	473.6	471.7	470.3	469.1	468.4	467.2	465.9	464.1	463.4	461.6	459.6
7.5°	474.2	470.9	469.7	467.2	465.9	464.7	462.2	460.2	457.7	455.8	453.3
10°	471.7	469.1	465.9	462.8	462.2	460.2	456.5	453.9	450.8	448.2	444.5
12.5°	467.8	464.1	460.8	457.1	455.2	453.3	449.5	445.7	441.3	436.8	433.1
15°	461.6	457.1	452.7	448.2	445.7	443.8	439.5	435.0	430.6	424.9	421.1
17.5°	452.1	447.0	442.6	436.8	434.3	432.5	426.7	421.7	416.0	410.4	406.5
20°	440.1	433.7	428.6	422.3	420.5	417.2	411.6	405.9	399.5	393.3	388.8
22.5°	424.2	417.9	412.2	405.9	402.7	399.5	393.9	386.9	380.6	375.5	371.1
25°	405.9	400.1	393.3	387.5	383.8	380.0	373.6	367.9	362.3	354.7	350.3
27.5°	385.6	378.8	373.6	366.0	362.3	359.8	352.8	345.2	340.2	333.2	328.1
30°	362.9	356.5	350.9	343.3	339.4	336.9	330.7	323.7	318.7	311.7	306.6
32.5°	338.8	331.9	324.9	319.9	315.5	313.0	306.0	301.6	295.2	289.6	283.9
35°	313.0	306.0	301.0	294.0	291.5	289.0	283.2	277.5	271.9	266.8	262.4
37.5°	285.1	280.1	274.4	269.4	267.4	264.9	257.9	252.9	248.5	243.4	239.6
40°	257.9	253.5	249.8	244.7	241.5	239.6	234.5	230.2	225.0	221.9	218.2
42.5°	233.3	228.3	224.4	220.7	217.4	215.6	211.2	207.9	204.2	201.1	196.6
45°	207.3	204.8	200.4	197.2	195.3	192.8	189.7	185.8	182.7	180.2	177.1
47.5°	184.6	182.1	178.9	175.1	173.8	172.0	168.8	166.2	163.7	161.2	158.1
50°	163.7	160.6	158.1	155.5	154.2	152.4	149.2	148.0	146.0	143.5	141.6
52.5°	144.7	142.2	139.7	136.5	135.9	134.6	132.8	130.3	128.4	127.1	125.8
55°	127.7	125.1	123.3	120.8	120.1	118.9	116.4	115.0	113.8	112.5	111.3
57.5°	112.5	110.0	107.5	106.3	104.9	103.7	103.0	101.2	99.9	99.3	98.0
60°	98.7	96.0	94.2	92.3	91.7	91.0	89.8	88.5	87.3	85.9	85.3
62.5°	85.3	82.8	81.6	80.3	79.0	79.0	77.8	76.4	75.2	74.6	73.3
65°	73.3	72.1	70.2	68.3	67.7	67.7	65.7	65.1	64.4	63.2	61.9
67.5°	61.9	60.7	58.8	58.2	57.6	56.9	56.3	55.1	53.7	53.1	51.8
70°	51.8	50.6	49.3	48.7	48.1	47.4	46.2	45.6	44.2	43.6	43.0
72.5°	41.7	41.1	39.8	39.2	38.6	38.0	37.3	36.7	35.5	34.7	34.1
75°	33.5	32.9	31.6	31.0	30.3	30.3	29.7	28.5	27.8	27.8	27.2
77.5°	25.2	24.6	24.0	23.4	22.7	22.7	22.1	21.5	20.9	20.9	20.2
80°	18.4	17.7	17.1	17.1	17.1	16.5	15.7	15.7	15.1	15.1	14.5
82.5°	12.0	12.0	11.4	11.4	11.4	10.7	10.7	10.1	10.1	10.1	10.1
85°	7.0	7.0	7.0	6.4	6.4	6.4	6.4	6.4	6.4	5.6	6.4
87.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.5	2.5	2.5
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°	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9
2.5°	463.4	462.8	461.6	461.6	460.2	460.2	459.6	459.0	458.3	457.7	457.1
5°	459.0	456.5	455.2	454.6	453.3	452.7	450.8	449.5	448.8	447.6	446.3
7.5°	450.8	448.2	445.7	445.1	444.5	442.0	440.1	438.1	436.8	435.6	434.3
10°	441.3	438.7	435.6	434.3	433.1	430.0	427.4	425.5	423.0	420.5	419.7
12.5°	430.0	426.1	422.3	421.1	419.1	416.0	413.5	410.4	408.4	405.2	404.6
15°	416.6	412.2	409.0	405.9	404.6	401.5	397.0	394.5	390.8	389.4	386.3
17.5°	400.9	396.4	392.0	390.8	388.8	384.4	380.0	376.8	373.0	371.1	369.3
20°	384.4	378.8	374.3	373.0	370.5	366.7	362.3	359.2	355.9	352.2	350.3
22.5°	365.4	359.2	355.3	352.2	351.5	347.1	342.1	339.4	336.9	333.8	331.3
25°	344.6	338.8	334.4	331.9	330.7	326.8	323.1	319.9	316.1	314.2	311.1
27.5°	323.1	319.3	313.6	311.1	309.2	306.0	301.6	299.7	295.9	293.4	291.5
30°	302.2	296.5	293.4	290.2	288.2	285.1	281.4	279.5	276.2	273.7	271.9
32.5°	279.5	275.6	271.2	270.0	267.4	264.3	261.8	258.6	256.0	253.5	252.9
35°	258.6	253.5	249.1	247.9	245.9	242.8	241.5	239.6	236.4	235.8	233.3
37.5°	235.8	233.3	228.3	226.3	225.7	223.2	220.7	219.4	217.4	215.6	214.9
40°	214.3	211.2	208.7	206.7	205.4	203.6	201.1	200.4	199.2	196.6	196.0
42.5°	194.1	190.9	188.4	187.8	185.8	184.0	182.7	180.8	180.2	179.6	178.3
45°	174.5	172.6	170.1	169.5	168.8	166.2	165.0	163.7	162.5	161.8	160.6
47.5°	156.7	154.9	153.0	152.4	151.1	150.5	148.6	148.0	146.0	145.4	144.7
50°	139.7	138.5	137.1	136.5	135.3	134.6	133.4	132.1	130.9	130.3	129.6
52.5°	124.5	123.3	122.0	121.4	120.8	119.5	118.3	117.0	116.4	115.8	115.0
55°	110.0	108.8	108.1	107.5	106.9	106.3	104.3	103.7	103.0	102.4	101.2
57.5°	96.8	95.4	94.2	94.2	93.5	92.9	91.7	90.4	90.4	89.2	87.9
60°	84.7	83.4	82.2	81.6	80.9	79.7	79.0	78.4	77.8	77.2	75.8
62.5°	72.1	71.4	70.2	70.2	68.9	68.3	67.7	67.1	66.4	65.1	64.4
65°	61.3	60.7	59.4	58.8	58.8	58.2	56.9	56.3	55.7	55.7	55.1
67.5°	51.2	50.6	49.3	48.7	48.7	48.1	47.4	47.4	46.8	46.2	46.8
70°	42.3	41.1	41.1	40.5	40.5	39.8	39.2	39.2	39.2	39.8	39.8
72.5°	33.5	32.9	32.2	32.2	32.2	32.2	31.6	31.6	32.2	32.9	32.9
75°	26.6	26.0	26.0	26.0	25.2	25.2	26.0	26.0	26.6	26.6	26.6
77.5°	19.6	19.6	19.6	19.6	19.6	19.6	20.2	20.2	20.9	20.9	20.9
80°	14.5	14.5	14.5	14.5	14.5	15.1	15.1	15.1	15.1	15.1	15.7
82.5°	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.7	10.7	10.7	10.7
85°	5.6	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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°	465.9	465.9	465.9	465.9	465.9	465.9	465.9	465.9
2.5°	456.5	456.5	456.5	457.1	455.8	455.8	455.8	455.8
5°	445.7	445.1	444.5	445.1	443.8	443.8	443.2	443.2
7.5°	432.5	431.8	431.2	431.2	430.0	430.0	429.2	428.6
10°	417.9	416.6	417.2	416.0	415.4	414.7	414.1	413.5
12.5°	402.1	400.9	400.1	398.9	397.6	397.0	397.6	396.4
15°	385.0	383.1	382.5	381.3	380.0	379.4	379.4	378.8
17.5°	366.0	364.8	364.2	362.9	362.3	361.0	360.4	359.8
20°	348.3	345.2	345.8	344.6	343.9	341.4	341.4	342.1
22.5°	328.7	326.8	325.6	324.3	323.7	322.4	322.4	321.8
25°	309.2	307.2	306.6	305.3	304.7	303.5	302.8	302.8
27.5°	290.2	287.6	287.6	286.4	285.1	284.5	283.9	283.2
30°	270.0	268.0	267.4	267.4	266.8	266.8	264.9	265.5
32.5°	251.0	249.8	249.1	247.9	247.9	247.3	247.3	245.3
35°	232.0	230.2	230.8	229.5	228.9	228.3	228.9	228.3
37.5°	213.7	212.4	212.4	211.2	211.2	210.5	209.9	211.2
40°	195.3	194.7	194.1	193.4	194.1	193.4	192.2	192.8
42.5°	177.1	177.1	176.3	176.3	175.7	175.7	175.7	175.7
45°	160.6	160.0	160.0	159.3	159.3	159.3	159.3	158.7
47.5°	144.1	143.5	143.5	143.5	142.9	142.9	142.2	142.9
50°	128.4	128.4	127.7	127.7	128.4	127.7	127.1	127.1
52.5°	113.8	113.8	113.1	113.1	112.5	111.9	112.5	112.5
55°	100.5	99.9	99.3	99.3	98.7	98.0	98.0	98.7
57.5°	87.9	87.3	86.7	86.7	85.3	84.7	84.7	84.7
60°	75.8	74.6	74.6	73.9	73.9	73.3	73.3	73.3
62.5°	64.4	63.8	63.8	63.8	63.8	63.2	63.2	63.2
65°	55.1	55.1	55.1	55.7	55.7	56.3	56.3	56.3
67.5°	47.4	48.1	48.1	48.1	48.7	48.7	48.7	48.1
70°	40.5	40.5	40.5	41.1	41.1	41.1	41.1	41.1
72.5°	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
75°	26.6	27.2	27.2	27.2	26.6	27.2	27.2	26.6
77.5°	20.9	20.9	20.9	20.9	20.9	20.9	20.9	20.9
80°	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
82.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
85°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)