

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: LUMARK

Report Number: P196370

Luminaire Tested: **NAV-AF-02-D-UNV-T4W-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196370
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-T4W-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8112 lumens
Efficiency: N/A
Efficacy: 122.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

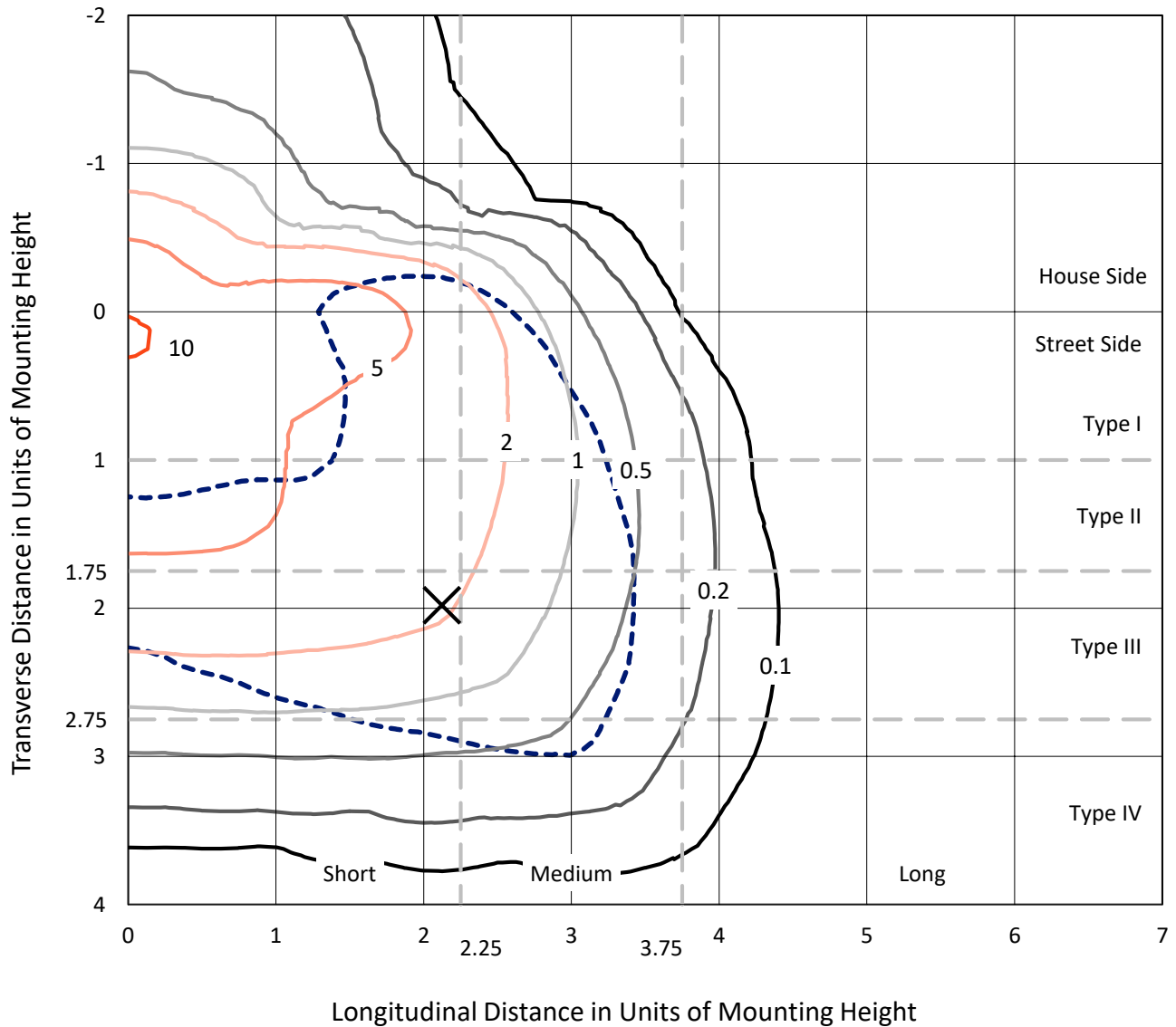
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

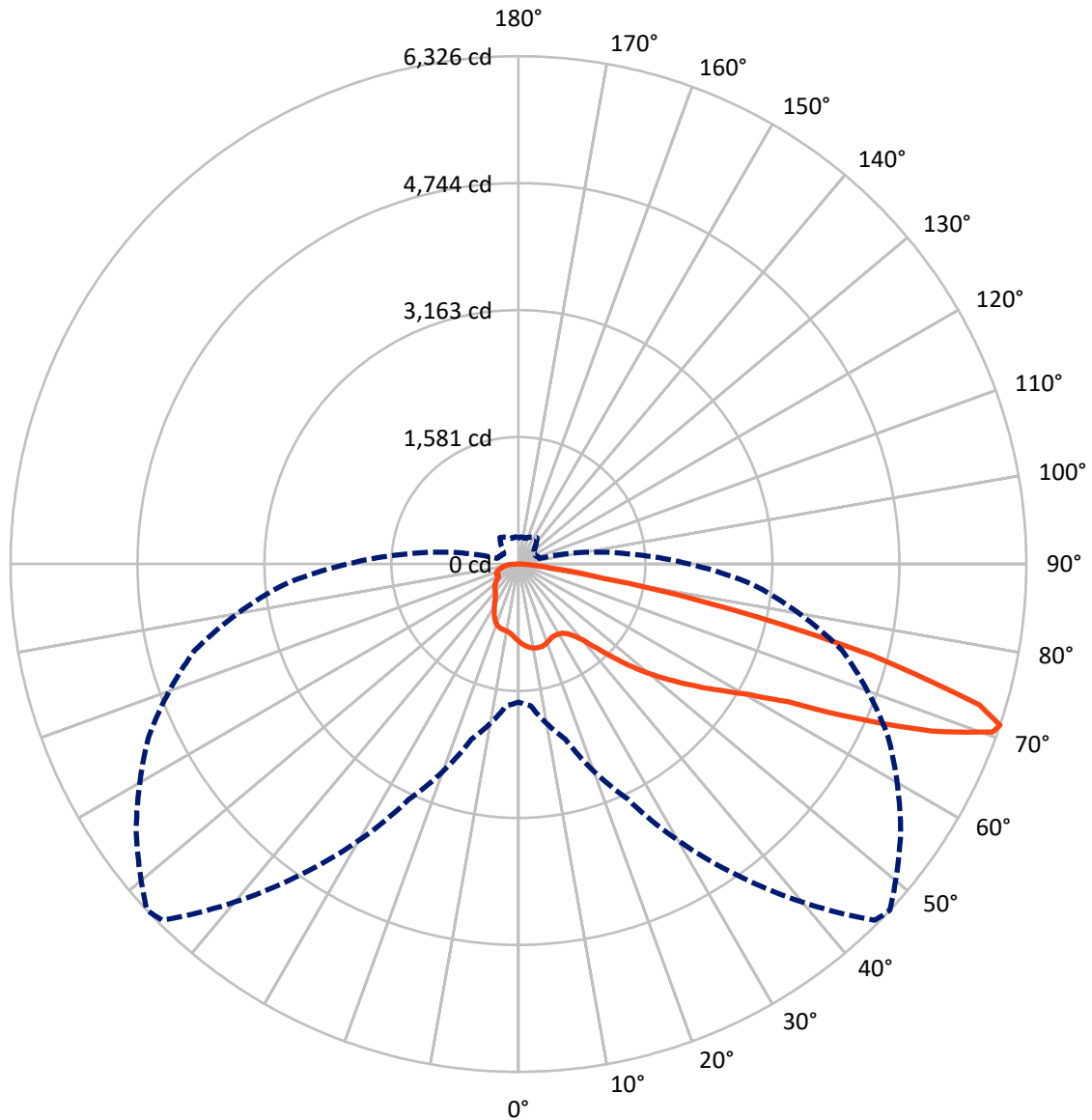
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.1 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1738.5	0.0	1738.5
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	6373.5	0.0	6373.5
	% Fixture	78.6	0.0	78.6
Total	Lumens	8112.0	0.0	8112.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.1	1.1
10°-20°	269.5	3.3
20°-30°	400.4	4.9
30°-40°	574.9	7.1
40°-50°	1019.4	12.6
50°-60°	1744.3	21.5
60°-70°	2476.2	30.5
70°-80°	1356.2	16.7
80°-90°	179.0	2.2
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°-90°	8112.0	100.0
0°-180°	8112.0	100.0



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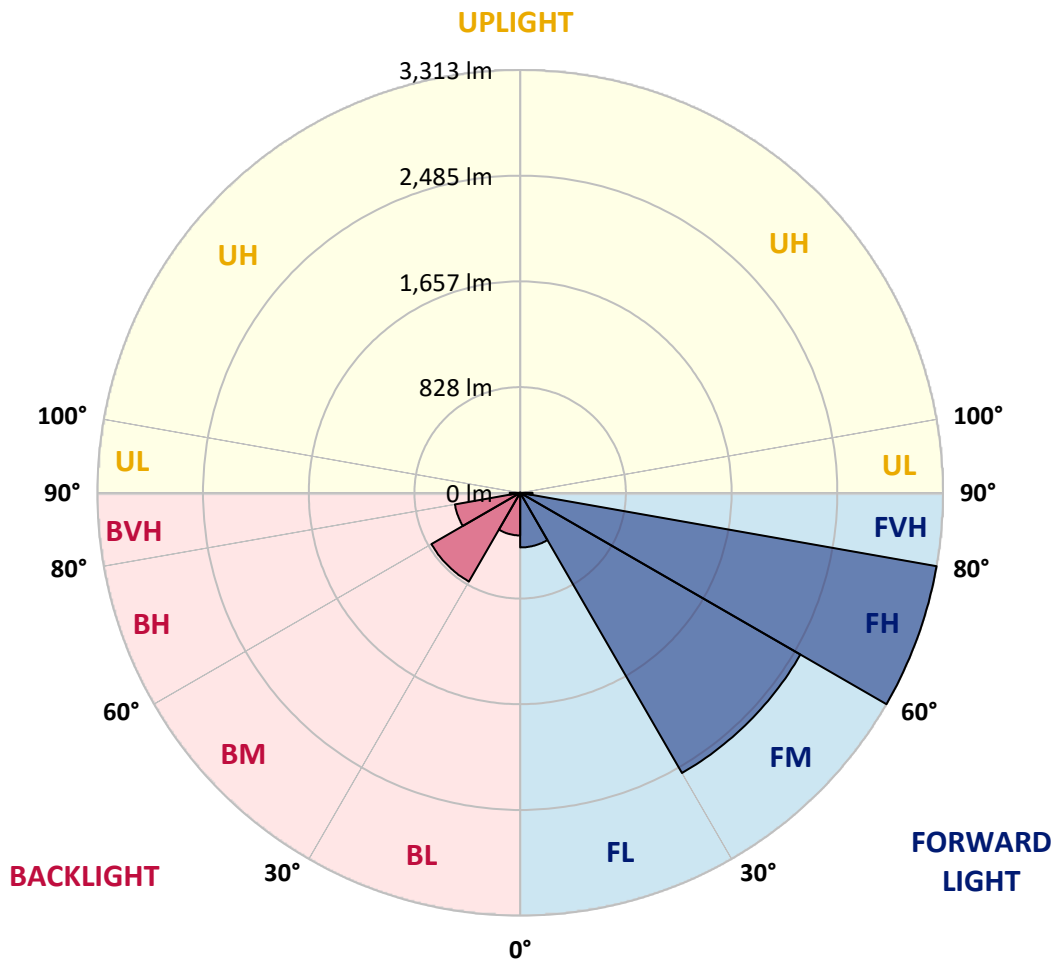
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	428.1	5.3			
FM	(30°-60°)	2535.2	31.3			
FH	(60°-80°)	3313.0	40.8			G2/5000
FVH	(80°-90°)	97.1	1.2			G1/100
BL	(0°-30°)	333.9	4.1	B1/500		
BM	(30°-60°)	803.3	9.9	B1/1000		
BH	(60°-80°)	519.4	6.4	B2/1000		G2/1000
BVH	(80°-90°)	81.9	1.0			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	964.6	964.6	964.6	964.6	964.6	964.6	964.6	964.6	964.6	964.6	964.6
2.5°	1023.6	1021.4	1022.4	1018.8	1009.9	1000.4	1000.4	990.4	979.9	969.3	957.8
5°	1087.1	1084.0	1081.4	1069.8	1052.4	1033.0	1029.8	1009.9	988.3	966.8	945.7
7.5°	1140.3	1137.1	1129.2	1108.2	1082.9	1054.0	1050.4	1024.1	995.6	965.7	936.3
10°	1178.1	1176.0	1160.7	1133.9	1104.5	1070.3	1064.0	1037.2	1003.5	966.3	928.9
12.5°	1199.1	1195.9	1177.5	1146.0	1111.3	1076.7	1070.3	1044.5	1006.2	965.2	921.6
15°	1190.7	1189.1	1171.8	1139.7	1105.0	1075.0	1069.8	1043.5	1004.6	961.5	914.7
17.5°	1154.9	1158.6	1145.0	1113.4	1085.0	1064.0	1058.2	1033.5	996.8	952.6	904.2
20°	1105.5	1109.7	1102.9	1070.8	1054.6	1040.9	1037.7	1017.7	983.6	939.4	891.6
22.5°	1052.9	1056.6	1057.2	1027.2	1021.9	1016.7	1014.1	999.8	972.0	931.5	883.2
25°	1016.7	1020.9	1021.9	995.6	998.8	1000.4	999.8	989.9	969.9	931.5	884.2
27.5°	1007.2	1009.3	1008.3	984.1	989.9	998.8	999.3	997.3	978.4	942.0	899.0
30°	1039.8	1040.9	1027.8	991.4	997.3	1008.8	1009.3	1008.3	996.1	969.3	932.0
32.5°	1180.7	1179.7	1134.5	1040.9	1020.9	1025.1	1026.7	1036.1	1037.2	1014.6	979.9
35°	1395.2	1394.7	1342.1	1182.3	1088.2	1066.1	1068.2	1082.9	1096.1	1080.8	1060.9
37.5°	1631.2	1632.8	1600.7	1384.2	1233.3	1141.3	1139.2	1150.2	1173.8	1179.2	1181.8
40°	1893.1	1900.9	1899.3	1616.0	1436.7	1269.6	1248.5	1235.9	1281.7	1310.6	1347.8
42.5°	2192.2	2190.0	2191.1	1870.5	1669.0	1471.4	1432.5	1373.6	1426.7	1476.7	1558.7
45°	2449.3	2457.6	2464.0	2141.1	1929.3	1702.2	1662.8	1555.5	1603.4	1678.0	1803.2
47.5°	2707.9	2693.1	2704.7	2442.4	2219.0	1965.6	1914.6	1770.0	1814.7	1919.9	2110.1
50°	3009.1	3002.3	2949.7	2835.6	2569.0	2232.6	2165.9	1993.9	2059.2	2199.5	2489.1
52.5°	3279.3	3242.4	3201.5	3144.8	2913.4	2502.9	2418.2	2226.9	2346.8	2520.8	2959.7
55°	3378.1	3353.4	3402.8	3476.4	3277.7	2778.3	2683.7	2498.7	2671.0	2888.2	3513.2
57.5°	3483.2	3491.6	3603.1	3751.9	3622.6	3072.1	2969.6	2820.4	3026.9	3299.2	4132.0
60°	3535.8	3569.5	3791.9	4071.0	3950.6	3394.5	3296.2	3190.0	3421.8	3753.5	4749.2
62.5°	3544.7	3589.9	3904.9	4182.9	4402.2	3888.0	3774.5	3659.4	3914.8	4255.5	5196.0
65°	3380.8	3450.1	3894.9	4320.7	4813.8	4712.8	4640.8	4440.0	4575.1	4697.6	5272.2
67.5°	2898.7	2974.4	3509.5	4264.0	5143.9	5568.7	5555.0	5258.6	5085.1	4868.4	4707.1
70°	2127.5	2188.5	2702.6	3645.2	4999.9	6240.5	6264.8	5789.0	5227.5	4505.8	3500.1
71°	1720.6	1773.2	2257.9	3236.2	4719.2	6275.2	6325.7	5812.6	5079.3	4178.2	2930.2
72.5°	1070.8	1100.3	1499.2	2442.4	4063.7	5917.8	6002.9	5509.8	4612.5	3531.6	2071.3
75°	404.3	415.8	556.2	1077.2	2425.5	4445.8	4548.9	4164.0	3240.4	2016.0	866.8
77.5°	217.1	222.9	276.0	447.8	972.0	2548.6	2681.1	2375.1	1554.5	705.5	354.4
80°	145.7	149.2	190.8	265.5	446.8	970.5	1080.8	953.6	582.0	402.6	252.4
82.5°	94.1	96.2	129.8	174.5	288.6	341.2	389.5	406.9	363.2	288.6	152.4
85°	62.0	63.6	85.7	111.4	178.7	168.2	172.5	225.6	247.6	190.3	77.8
87.5°	35.7	36.8	51.6	57.3	80.4	63.1	68.3	107.2	147.2	124.1	44.7
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	964.6	964.6	964.6	964.6	964.6	964.6	964.6	964.6	964.6	964.6	964.6
2.5°	952.6	948.4	938.9	933.1	930.5	929.5	928.4	930.5	930.5	929.5	927.3
5°	935.2	927.3	911.6	900.5	894.8	893.1	895.3	897.8	899.5	899.5	897.8
7.5°	922.6	911.0	890.0	874.7	865.8	863.2	869.0	878.4	884.8	887.9	888.4
10°	912.1	896.3	873.2	857.4	850.1	849.0	856.3	868.5	881.6	887.4	888.4
12.5°	902.7	884.8	859.5	844.8	839.5	842.2	852.1	863.2	878.4	886.9	887.4
15°	893.6	875.2	848.4	833.2	832.2	836.4	845.9	854.8	866.3	876.9	876.9
17.5°	883.2	863.2	835.3	821.1	821.1	824.8	831.1	835.9	843.2	853.2	852.6
20°	870.5	850.1	821.6	806.9	803.8	801.7	801.7	802.7	809.1	818.0	819.6
22.5°	861.1	840.0	810.1	792.3	778.1	764.3	758.6	756.5	762.3	770.7	772.7
25°	861.1	840.0	806.4	776.4	741.7	715.5	704.4	701.2	707.1	714.9	718.1
27.5°	875.2	854.3	814.8	762.3	698.7	656.6	643.4	640.8	646.1	652.4	655.5
30°	908.4	887.9	839.0	745.9	650.8	595.7	580.9	578.3	580.9	583.5	587.2
32.5°	963.6	946.2	878.4	731.2	602.4	540.4	522.5	518.3	519.4	519.9	523.0
35°	1053.5	1045.7	931.0	713.9	556.7	495.2	476.8	468.4	467.9	470.5	474.1
37.5°	1191.2	1195.9	998.8	688.7	518.8	463.1	444.8	436.3	432.1	437.4	441.6
40°	1385.7	1396.7	1077.2	654.5	487.8	444.2	424.7	416.9	411.1	409.5	411.6
42.5°	1638.6	1635.4	1157.1	610.9	454.2	431.6	411.1	402.6	393.2	381.2	378.5
45°	1938.3	1893.1	1223.9	557.2	415.8	419.5	398.4	386.9	372.1	354.4	352.2
47.5°	2292.0	2167.4	1264.8	499.9	380.1	403.8	384.3	366.4	344.8	333.3	331.7
50°	2718.4	2488.6	1293.7	441.6	348.0	383.7	364.3	340.6	319.7	316.5	316.0
52.5°	3223.0	2867.6	1329.5	389.0	322.7	358.0	344.3	320.2	303.3	304.9	304.9
55°	3759.8	3259.8	1330.6	347.5	300.7	328.1	329.6	310.2	297.1	302.3	303.8
57.5°	4249.2	3602.6	1225.9	318.0	279.7	304.3	324.9	313.8	303.8	322.2	323.9
60°	4676.1	3866.4	1001.0	293.9	262.3	295.4	335.4	336.4	334.3	384.3	388.0
62.5°	4832.2	3869.1	710.7	273.3	252.9	300.7	357.5	359.1	359.1	405.3	412.1
65°	4613.5	3546.9	473.1	261.3	246.5	312.3	375.3	368.5	352.2	384.3	377.0
67.5°	3842.8	2760.9	345.9	253.4	237.6	312.8	391.1	373.8	345.9	373.3	360.6
70°	2641.1	1756.9	289.7	246.0	227.1	299.1	399.6	372.1	336.4	348.0	331.2
71°	2125.9	1402.1	275.0	243.4	222.9	291.2	400.6	370.1	331.7	339.1	323.9
72.5°	1400.4	863.7	257.1	237.6	216.6	277.5	397.9	365.4	325.4	325.9	316.0
75°	552.5	358.0	231.3	224.4	198.8	255.5	386.4	355.4	313.3	302.8	298.6
77.5°	279.2	233.9	203.5	206.0	177.7	232.9	370.1	339.1	296.5	282.3	279.2
80°	204.0	177.7	174.0	178.7	154.1	210.8	349.5	317.0	275.0	289.7	283.4
82.5°	124.1	108.3	136.2	147.7	128.8	188.2	325.4	291.2	247.6	228.1	220.8
85°	58.9	63.6	98.3	108.8	95.1	150.4	297.6	262.9	216.0	186.6	189.8
87.5°	28.9	35.2	56.3	65.2	62.6	110.4	224.4	204.0	170.3	140.3	137.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)