

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: P196024

Luminaire Tested: **NAV-AF-04-D-UNV-AFL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196024  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-04-D-UNV-AFL  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 25571.7 lumens  
Efficiency: N/A  
Efficacy: 113.7 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short - Full Cutoff  
BUG Rating: B3 - U0 - G2

Input Watts (W): 225  
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

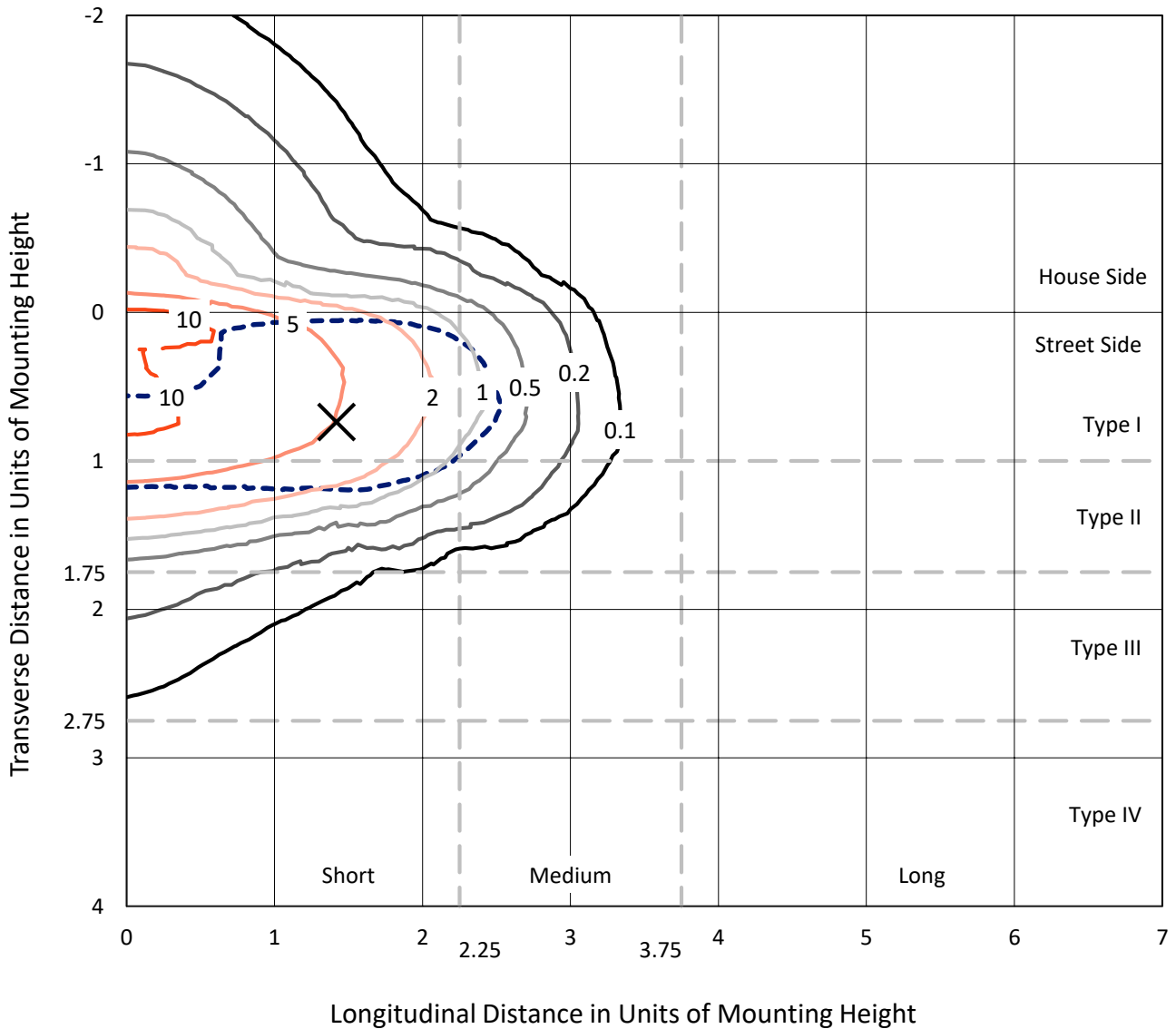


REPORT NUMBER: P196024

CATALOG NUMBER: NAV-AF-04-D-UNV-AFL

### Iso-Footcandle Lines of Horizontal Illumination

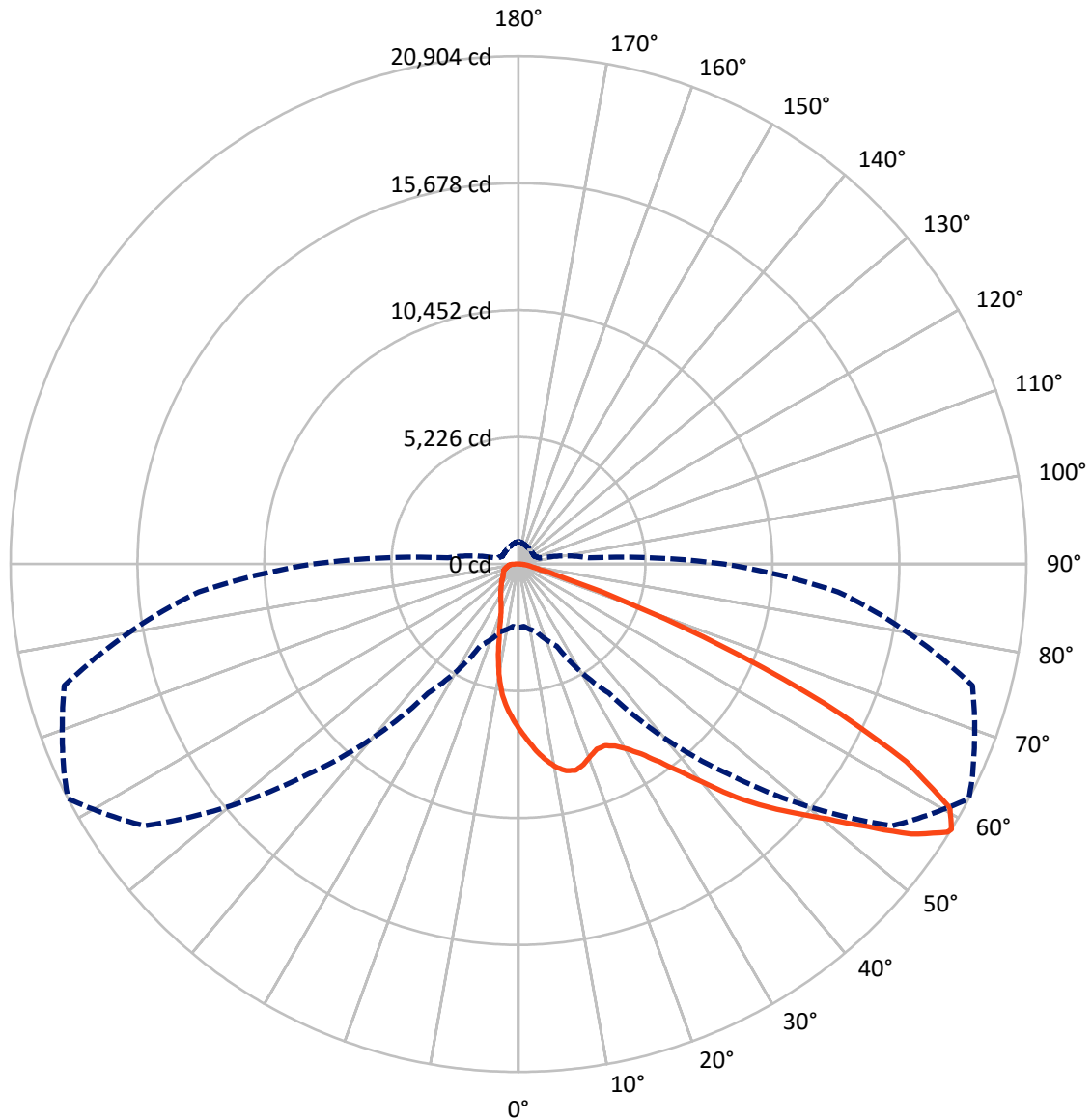
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 12.8 fc  
 Type II - Short - Full Cutoff

REPORT NUMBER: P196024  
CATALOG NUMBER: NAV-AF-04-D-UNV-AFL

### Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral    - - - Horizontal Cone Through 58-Deg Vertical

REPORT NUMBER: P196024

CATALOG NUMBER: NAV-AF-04-D-UNV-AFL

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3926.2	0.0	3926.2
	% Fixture	15.4	0.0	15.4
<b>Street Side</b>	Lumens	21645.5	0.0	21645.5
	% Fixture	84.6	0.0	84.6
<b>Total</b>	Lumens	25571.7	0.0	25571.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	610.3	2.4
10°-20°	1540.2	6.0
20°-30°	2496.0	9.8
30°-40°	3985.1	15.6
40°-50°	5796.4	22.7
50°-60°	6065.4	23.7
60°-70°	3697.7	14.5
70°-80°	1034.1	4.0
80°-90°	346.6	1.4
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°	25571.7	100.0
0°-180°	25571.7	100.0



REPORT NUMBER: P196024

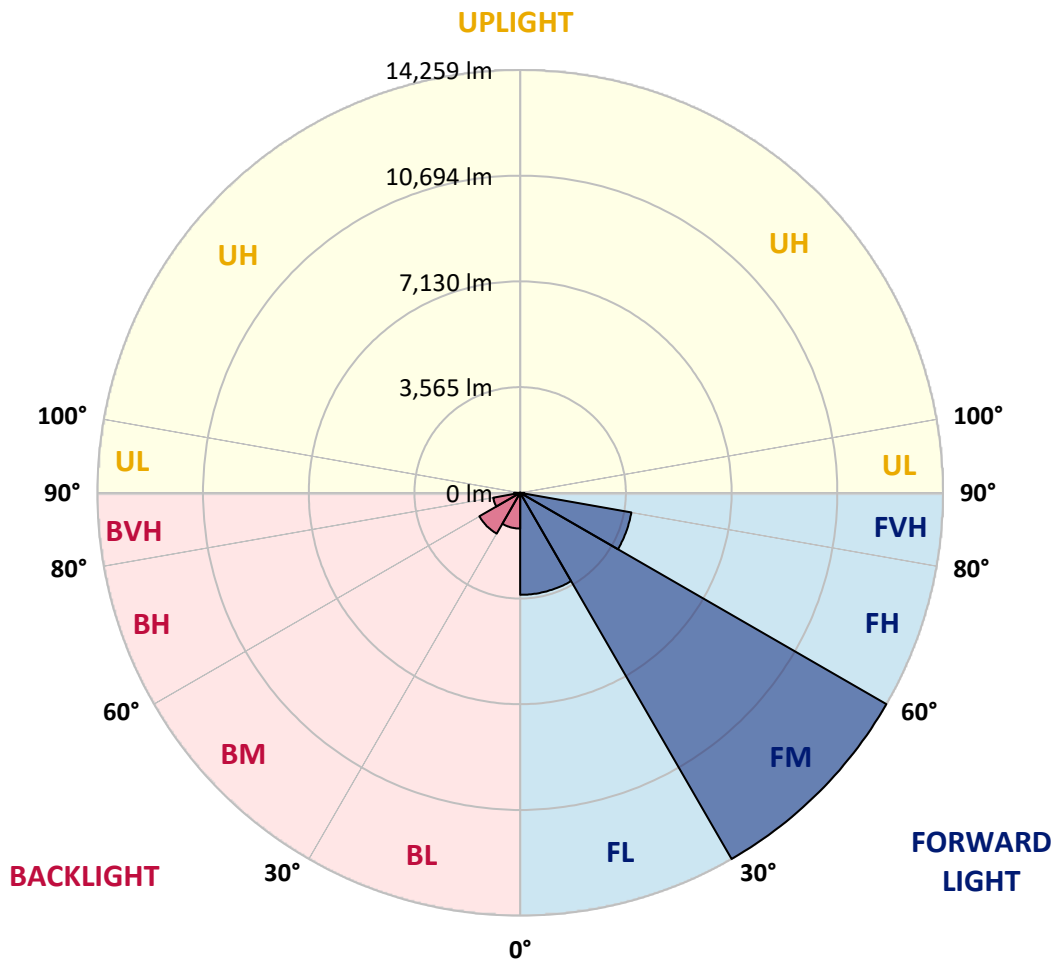
CATALOG NUMBER: NAV-AF-04-D-UNV-AFL

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	3439.5	13.5			
FM	(30°-60°)	14259.1	55.8			
FH	(60°-80°)	3807.5	14.9			G2/5000
FVH	(80°-90°)	139.4	0.5			G2/225
BL	(0°-30°)	1206.9	4.7	B3/2500		
BM	(30°-60°)	1587.8	6.2	B2/2500		
BH	(60°-80°)	924.3	3.6	B2/1000		G2/1000
BVH	(80°-90°)	207.2	0.8			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G2**

Type II Short





REPORT NUMBER: P196024

CATALOG NUMBER: NAV-AF-04-D-UNV-AFL

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5
2.5°	7749.7	7744.9	7679.3	7636.1	7585.0	7466.7	7348.5	7260.6	7215.8	7044.9	6878.6
5°	8390.5	8371.3	8334.6	8288.3	8221.1	8072.5	7885.5	7724.1	7660.2	7356.4	7051.2
7.5°	8051.7	8082.0	8195.6	8323.3	8457.7	8467.3	8334.6	8142.8	8072.5	7666.5	7219.1
10°	7113.6	7100.8	7243.0	7492.3	7935.0	8373.0	8591.9	8497.6	8424.1	7960.6	7386.8
12.5°	6829.1	6825.8	6849.9	6913.8	7191.9	7792.8	8526.4	8730.9	8705.3	8272.3	7565.8
15°	6915.4	6918.6	6917.0	6925.0	7001.7	7287.8	8160.4	8809.2	8889.1	8580.7	7748.0
17.5°	7191.9	7180.7	7145.5	7107.2	7118.3	7220.6	7765.6	8675.0	8914.7	8855.6	7901.5
20°	7618.6	7618.6	7524.3	7417.2	7346.9	7369.2	7601.0	8444.9	8796.5	9088.9	8016.6
22.5°	8153.9	8162.0	8022.9	7827.9	7668.1	7607.4	7695.4	8273.8	8652.6	9304.7	8118.9
25°	8818.9	8817.2	8614.3	8334.6	8082.0	7936.7	7935.0	8281.8	8607.8	9557.2	8225.9
27.5°	9641.9	9566.7	9330.2	8932.3	8575.9	8353.7	8253.1	8483.2	8702.1	9867.3	8369.8
30°	10570.5	10493.7	10183.7	9672.3	9189.6	8865.2	8699.0	8831.6	8989.8	10262.0	8587.1
32.5°	11489.4	11507.0	11142.6	10565.6	9945.5	9488.5	9242.4	9323.9	9434.2	10744.7	8881.2
35°	12835.1	12833.5	12357.2	11636.5	10899.6	10266.8	9955.2	9998.3	10099.0	11425.4	9293.5
37.5°	13838.8	13822.7	13515.9	12878.2	12048.8	11289.6	10839.0	10845.3	10931.7	12280.5	9836.9
40°	13941.1	13937.8	13936.3	13845.1	13277.8	12561.8	11997.7	11881.0	11916.1	13188.3	10413.8
42.5°	13159.5	13276.2	13611.8	14126.4	14284.7	13909.1	13375.3	13114.7	13038.0	14230.3	11024.3
45°	12045.6	12104.7	12692.9	13849.9	14791.3	15174.9	14773.7	14223.9	14092.9	15243.6	11521.4
47.5°	11527.7	11502.2	11842.6	13103.6	14741.7	16181.8	16210.5	15309.1	15087.0	16117.8	11944.9
50°	10417.0	10383.5	10813.4	12005.7	14201.5	16682.0	17685.6	16491.8	16081.0	16948.9	12328.5
52.5°	8203.6	8171.5	8748.5	10284.3	12993.3	16495.0	18929.0	17943.0	17242.9	17749.5	12686.4
55°	5338.0	5341.1	5891.0	7474.7	10514.5	15405.0	19512.4	19619.4	18834.7	18550.2	12975.7
57.5°	2939.0	2911.9	3303.4	4276.8	7233.4	12929.4	19026.5	20827.7	20418.5	19237.4	13185.1
58°	2613.0	2581.1	2883.2	3722.2	6485.5	12231.0	18782.0	20904.4	20621.5	19351.0	13215.5
60°	1861.9	1807.6	1761.2	2098.4	3736.5	8818.9	17151.8	20407.4	20680.6	19577.8	13186.7
62.5°	1569.4	1507.1	1340.9	1328.1	1759.6	4313.5	13563.9	17922.1	18687.7	19055.2	12723.3
65°	1457.6	1395.2	1176.3	1097.9	1193.9	1861.9	8387.3	13838.8	14861.6	17238.2	11556.6
67.5°	1377.6	1304.2	1069.2	966.9	986.1	1113.9	3559.2	9050.6	10236.5	13442.4	9271.1
70°	1305.7	1224.2	984.5	866.2	850.3	847.0	1390.4	4725.8	5868.6	8796.5	6210.5
72.5°	1224.2	1144.3	909.4	783.1	748.0	687.2	835.9	1953.0	2677.0	4311.9	2846.4
75°	1105.9	1040.4	826.2	714.4	653.7	557.8	616.9	936.5	1153.9	1650.9	1321.8
77.5°	973.3	920.6	741.5	656.8	575.3	455.5	471.5	634.4	712.8	930.2	765.6
80°	688.9	708.0	647.2	578.6	506.7	367.5	362.8	465.0	511.4	624.9	514.6
82.5°	474.6	489.1	527.4	457.1	409.2	286.1	266.9	322.8	346.8	377.2	249.3
85°	338.8	329.2	366.0	327.7	300.4	182.2	171.0	204.6	218.9	230.2	119.9
87.5°	206.1	204.6	210.9	169.4	156.6	92.7	84.7	97.5	103.9	100.7	57.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196024

CATALOG NUMBER: NAV-AF-04-D-UNV-AFL

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5	6827.5
2.5°	6816.3	6738.0	6566.9	6429.6	6280.9	6167.5	6053.9	5990.0	5919.7	5879.7	5874.9
5°	6891.4	6731.6	6367.2	6028.4	5679.9	5366.7	5059.9	4832.9	4647.6	4542.1	4535.7
7.5°	6974.5	6723.7	6161.0	5574.5	4954.4	4337.5	3792.5	3407.3	3159.6	3044.6	3036.5
10°	7038.4	6690.0	5910.1	4997.5	4014.7	3199.6	2704.2	2477.2	2402.1	2382.9	2379.7
12.5°	7115.1	6666.1	5593.7	4257.6	3068.5	2435.6	2285.4	2271.1	2287.0	2296.6	2298.2
15°	7187.0	6619.7	5166.9	3437.7	2402.1	2176.7	2179.9	2210.3	2242.3	2256.6	2258.3
17.5°	7220.6	6506.3	4606.0	2709.0	2101.7	2060.1	2096.8	2136.7	2165.6	2176.7	2176.7
20°	7220.6	6324.1	3955.5	2194.3	1945.0	1953.0	1997.7	2028.1	2034.5	2024.9	2020.1
22.5°	7190.3	6098.7	3322.6	1914.7	1817.2	1847.6	1882.6	1861.9	1786.8	1729.2	1718.0
25°	7163.1	5831.8	2713.7	1743.6	1705.3	1745.3	1730.8	1588.6	1473.6	1414.4	1404.8
27.5°	7118.3	5509.0	2205.5	1603.0	1596.6	1628.5	1486.3	1348.9	1291.4	1259.4	1253.0
30°	7107.2	5158.9	1845.9	1478.4	1489.5	1444.8	1281.8	1237.0	1224.2	1206.7	1198.7
32.5°	7143.9	4809.0	1620.6	1376.1	1387.2	1240.2	1177.8	1184.3	1182.6	1160.3	1152.3
35°	7244.6	4468.6	1476.7	1283.4	1251.4	1110.7	1118.7	1137.9	1137.9	1110.7	1101.1
37.5°	7420.4	4152.2	1385.6	1205.0	1094.8	1043.6	1064.4	1090.0	1090.0	1070.8	1062.8
40°	7607.4	3843.6	1316.9	1142.7	995.6	997.3	1018.0	1037.3	1045.3	1048.4	1042.0
42.5°	7776.8	3524.1	1243.4	1075.6	950.9	962.1	971.7	986.1	1019.7	1042.0	1038.8
45°	7875.9	3202.8	1163.5	992.5	920.6	925.4	922.2	947.8	987.7	1021.2	1021.2
47.5°	7966.9	2939.0	1097.9	909.4	890.2	890.2	880.6	906.1	943.0	982.9	986.1
50°	8053.3	2768.1	1051.6	845.5	851.8	847.0	843.8	867.8	917.4	965.4	973.3
52.5°	8141.2	2710.5	1010.1	799.1	811.9	805.5	808.6	842.3	898.2	947.8	955.7
55°	8264.2	2747.3	966.9	767.1	773.6	771.9	784.7	823.1	872.6	922.2	925.4
57.5°	8416.1	2881.6	930.2	743.2	736.7	746.3	767.1	803.9	851.8	910.9	915.7
58°	8446.4	2913.5	923.7	736.7	728.8	743.2	763.9	799.1	848.6	910.9	915.7
60°	8492.8	3027.0	907.8	723.9	701.6	727.2	752.8	787.9	842.3	918.9	928.5
62.5°	8269.0	3049.3	903.0	709.6	672.8	704.8	735.2	775.1	835.9	946.1	966.9
65°	7493.9	2819.3	869.4	685.6	648.9	687.2	719.2	765.6	855.1	1027.7	1037.3
67.5°	6015.6	2341.3	787.9	648.9	621.6	666.5	706.4	765.6	863.1	1040.4	1046.8
70°	4136.1	1759.6	685.6	609.0	589.7	640.9	701.6	783.1	835.9	984.5	965.4
72.5°	2160.8	1224.2	600.9	562.5	551.4	618.5	748.0	765.6	803.9	918.9	899.8
75°	1088.4	832.7	529.0	509.8	508.2	610.5	837.5	736.7	770.3	864.6	906.1
77.5°	642.5	652.0	471.5	460.3	468.3	596.2	839.0	708.0	732.0	795.9	840.7
80°	439.5	538.6	426.7	423.5	429.9	548.2	773.6	672.8	687.2	752.8	800.7
82.5°	247.8	297.3	374.0	394.8	391.6	449.1	668.1	612.1	629.7	890.2	941.3
85°	119.9	179.0	313.2	369.2	334.0	298.9	543.4	543.4	548.2	637.7	645.7
87.5°	44.7	79.9	210.9	292.5	233.3	179.0	369.2	385.1	428.3	441.1	450.7
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)