

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: P196378

Luminaire Tested: **NAV-AF-04-D-UNV-T4W-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196378
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-04-D-UNV-T4W-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19926.1 lumens
Efficiency: N/A
Efficacy: 116.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

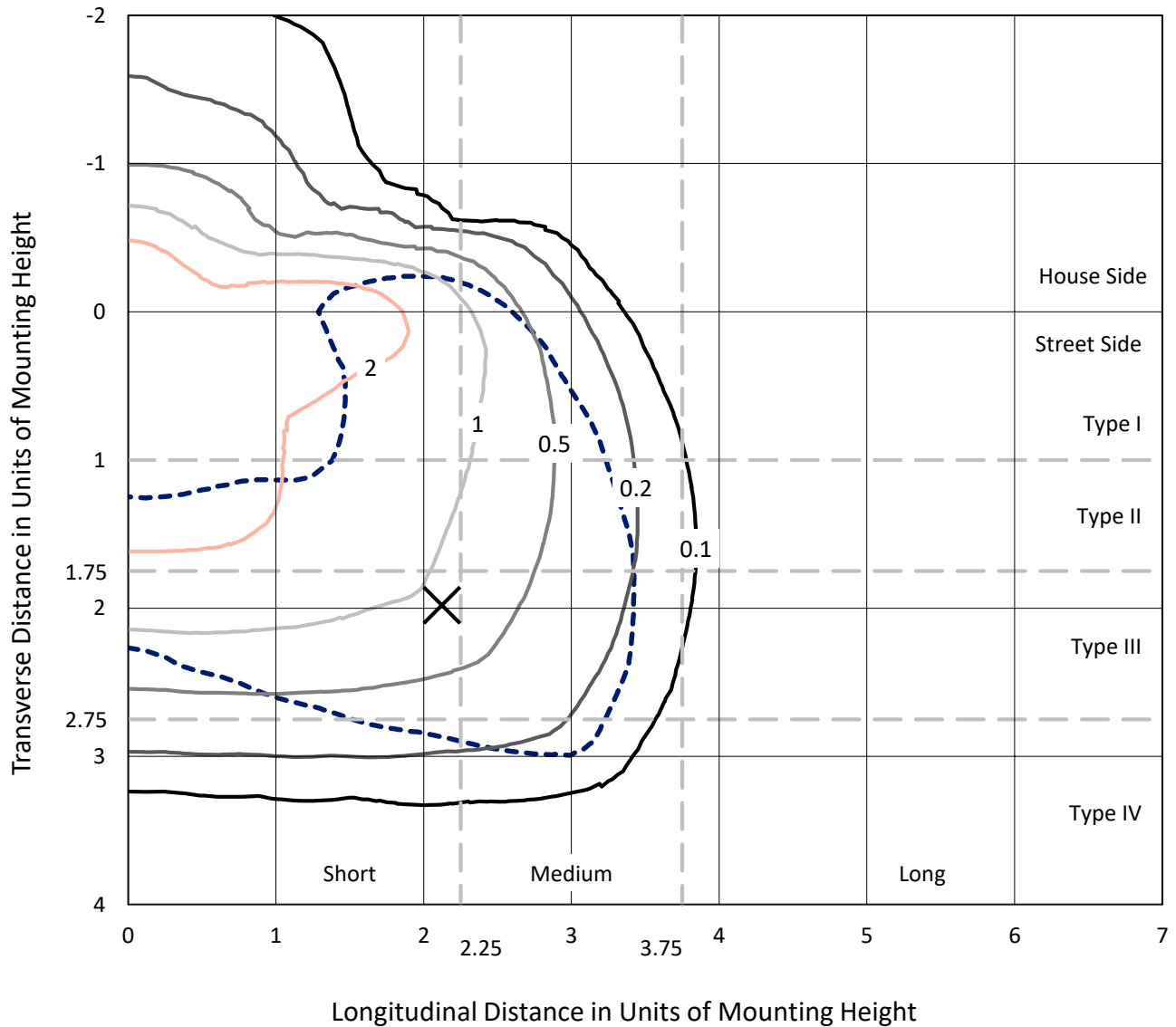
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

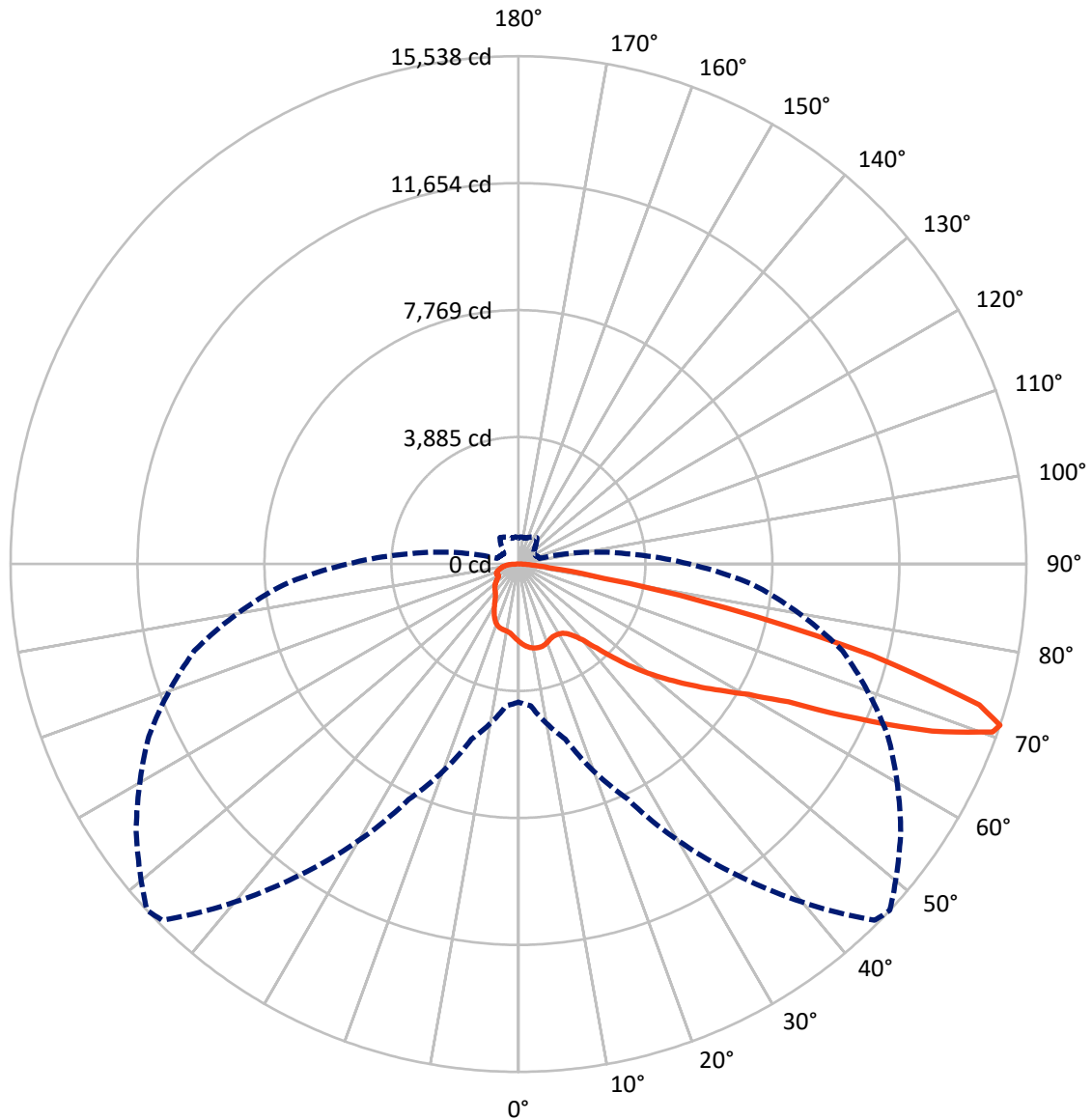
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.3 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	4270.5	0.0	4270.5
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	15655.6	0.0	15655.6
	% Fixture	78.6	0.0	78.6
Total	Lumens	19926.1	0.0	19926.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	226.2	1.1
10°-20°	661.9	3.3
20°-30°	983.5	4.9
30°-40°	1412.2	7.1
40°-50°	2503.9	12.6
50°-60°	4284.5	21.5
60°-70°	6082.6	30.5
70°-80°	3331.4	16.7
80°-90°	439.8	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°	19926.1	100.0
0°-180°	19926.1	100.0



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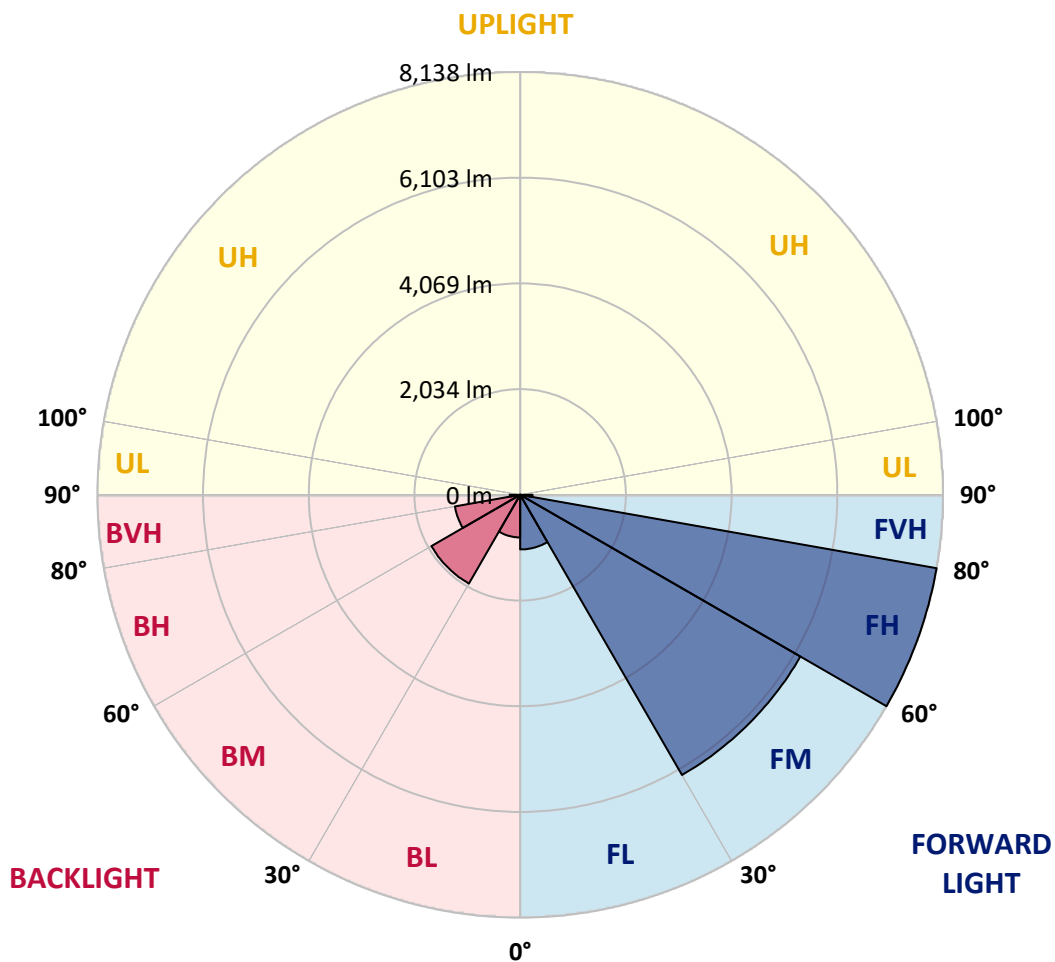
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1051.6	5.3			
FM	(30°-60°)	6227.5	31.3			
FH	(60°-80°)	8138.0	40.8			G4/12000
FVH	(80°-90°)	238.5	1.2			G3/500
BL	(0°-30°)	820.1	4.1	B2/1000		
BM	(30°-60°)	1973.2	9.9	B2/2500		
BH	(60°-80°)	1276.0	6.4	B3/2500		G3/2500
BVH	(80°-90°)	201.2	1.0			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6
2.5°	2514.2	2509.0	2511.5	2502.5	2480.6	2457.3	2457.3	2432.8	2407.0	2381.1	2352.8
5°	2670.4	2662.6	2656.2	2627.8	2585.2	2537.4	2529.7	2480.6	2427.7	2374.7	2323.0
7.5°	2800.8	2793.1	2773.7	2722.1	2660.1	2589.1	2580.0	2515.4	2445.8	2372.1	2299.8
10°	2893.8	2888.6	2851.2	2785.4	2713.1	2629.1	2613.6	2547.8	2465.1	2373.5	2281.7
12.5°	2945.5	2937.7	2892.5	2815.1	2729.8	2644.6	2629.1	2565.9	2471.6	2370.8	2263.7
15°	2924.8	2920.9	2878.3	2799.5	2714.3	2640.7	2627.8	2563.2	2467.7	2361.8	2246.9
17.5°	2836.9	2846.1	2812.5	2735.0	2665.3	2613.6	2599.4	2538.7	2448.3	2339.8	2221.0
20°	2715.6	2726.0	2709.2	2630.4	2590.3	2556.8	2549.0	2500.0	2416.0	2307.6	2190.0
22.5°	2586.5	2595.5	2596.8	2523.2	2510.3	2497.4	2490.9	2456.1	2387.7	2288.2	2169.4
25°	2497.4	2507.7	2510.3	2445.8	2453.4	2457.3	2456.1	2431.6	2382.5	2288.2	2171.9
27.5°	2474.1	2479.3	2476.8	2417.3	2431.6	2453.4	2454.8	2449.6	2403.1	2314.0	2208.1
30°	2554.2	2556.8	2524.5	2435.4	2449.6	2478.0	2479.3	2476.8	2447.0	2381.1	2289.5
32.5°	2900.3	2897.7	2786.6	2556.8	2507.7	2518.0	2521.9	2545.2	2547.8	2492.2	2407.0
35°	3427.1	3425.9	3296.7	2904.2	2673.0	2618.8	2624.0	2660.1	2692.4	2655.0	2605.9
37.5°	4006.9	4010.8	3932.0	3400.0	3029.4	2803.4	2798.3	2825.4	2883.5	2896.4	2902.8
40°	4650.0	4669.4	4665.5	3969.5	3529.2	3118.5	3066.8	3035.8	3148.2	3219.2	3310.9
42.5°	5384.7	5379.6	5382.2	4594.5	4099.9	3614.4	3518.8	3374.2	3504.6	3627.3	3828.7
45°	6016.2	6036.8	6052.4	5259.5	4739.1	4181.2	4084.4	3820.9	3938.5	4121.9	4429.2
47.5°	6651.5	6615.3	6643.8	5999.4	5450.6	4828.2	4702.9	4347.8	4457.6	4715.8	5183.3
50°	7391.4	7374.7	7245.5	6965.3	6310.6	5484.1	5320.2	4897.9	5058.1	5402.8	6114.3
52.5°	8055.1	7964.8	7864.0	7724.6	7156.4	6147.9	5940.0	5469.9	5764.4	6191.8	7270.0
55°	8297.9	8237.2	8358.6	8539.4	8051.2	6824.5	6592.1	6137.6	6561.1	7094.5	8629.8
57.5°	8556.2	8576.8	8850.6	9216.1	8898.3	7546.4	7294.6	6927.8	7435.3	8104.2	10149.6
60°	8685.3	8767.9	9314.2	9999.9	9704.1	8338.0	8096.5	7835.6	8405.1	9220.0	11665.6
62.5°	8707.3	8818.3	9591.8	10274.9	10813.4	9550.5	9271.5	8988.8	9616.4	10453.1	12763.3
65°	8304.4	8474.8	9567.2	10613.2	11824.5	11576.5	11399.7	10906.4	11238.2	11539.1	12950.5
67.5°	7120.2	7306.2	8620.7	10473.8	12635.4	13678.8	13645.2	12916.9	12490.7	11958.8	11562.3
70°	5225.9	5375.7	6638.5	8953.9	12281.5	15329.0	15388.5	14219.8	12840.7	11067.7	8597.5
71°	4226.4	4355.5	5546.1	7949.2	11592.1	15414.3	15538.2	14277.9	12476.6	10263.3	7197.7
72.5°	2630.4	2702.7	3682.8	5999.4	9981.7	14536.2	14745.4	13534.2	11329.9	8674.9	5087.7
75°	993.0	1021.4	1366.2	2645.9	5958.1	10920.5	11173.7	10228.4	7959.6	4952.1	2129.4
77.5°	533.3	547.5	677.9	1100.2	2387.7	6260.3	6585.7	5834.1	3818.4	1732.9	870.3
80°	357.7	366.7	468.7	652.1	1097.6	2383.8	2655.0	2342.5	1429.5	989.1	619.8
82.5°	231.2	236.3	319.0	428.7	708.9	838.1	956.9	999.4	892.3	708.9	374.5
85°	152.4	156.2	210.5	273.7	439.1	413.2	423.5	553.9	608.2	467.5	191.1
87.5°	87.8	90.4	126.5	140.8	197.5	155.0	167.9	263.4	361.6	304.7	109.8
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°	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6
2.5°	2339.8	2329.5	2306.2	2292.0	2285.6	2283.0	2280.5	2285.6	2285.6	2283.0	2277.9
5°	2297.2	2277.9	2239.1	2212.0	2197.8	2193.9	2199.1	2205.6	2209.5	2209.5	2205.6
7.5°	2266.2	2237.8	2186.1	2148.7	2126.8	2120.3	2134.5	2157.8	2173.3	2181.0	2182.3
10°	2240.4	2201.7	2144.8	2106.2	2088.0	2085.5	2103.5	2133.3	2165.5	2179.7	2182.3
12.5°	2217.1	2173.3	2111.3	2075.2	2062.2	2068.7	2093.2	2120.3	2157.8	2178.5	2179.7
15°	2195.3	2150.0	2084.2	2046.7	2044.2	2054.5	2077.7	2099.7	2128.0	2153.9	2153.9
17.5°	2169.4	2120.3	2051.8	2017.1	2017.1	2026.1	2041.5	2053.2	2071.3	2095.8	2094.5
20°	2138.4	2088.0	2018.3	1982.2	1974.4	1969.3	1969.3	1971.8	1987.3	2009.3	2013.2
22.5°	2115.2	2063.5	1989.9	1946.0	1911.2	1877.5	1863.3	1858.2	1872.4	1893.1	1898.2
25°	2115.2	2063.5	1980.8	1907.3	1822.1	1757.4	1730.3	1722.6	1736.8	1756.2	1763.9
27.5°	2150.0	2098.4	2001.5	1872.4	1716.1	1612.9	1580.6	1574.1	1587.0	1602.6	1610.2
30°	2231.4	2181.0	2060.9	1832.3	1598.7	1463.0	1426.9	1420.5	1426.9	1433.4	1442.4
32.5°	2367.0	2324.3	2157.8	1796.2	1479.8	1327.5	1283.6	1273.3	1275.8	1277.1	1284.8
35°	2587.8	2568.4	2286.9	1753.5	1367.5	1216.4	1171.2	1150.5	1149.3	1155.7	1164.7
37.5°	2926.0	2937.7	2453.4	1691.7	1274.5	1137.6	1092.4	1071.7	1061.4	1074.4	1084.7
40°	3403.9	3431.0	2645.9	1607.7	1198.3	1091.2	1043.4	1024.0	1009.8	1006.0	1011.1
42.5°	4025.0	4017.2	2842.2	1500.5	1115.7	1060.2	1009.8	989.1	965.9	936.2	929.8
45°	4761.0	4650.0	3006.1	1368.8	1021.4	1030.4	978.8	950.4	914.2	870.3	865.2
47.5°	5630.1	5324.0	3106.9	1228.1	933.6	991.8	944.0	900.0	847.1	818.7	814.8
50°	6677.3	6113.1	3177.9	1084.7	854.9	942.6	894.9	836.8	785.1	777.3	776.1
52.5°	7917.0	7044.0	3265.7	955.5	792.9	879.3	845.8	786.4	745.1	749.0	749.0
55°	9235.4	8007.4	3268.3	853.6	738.7	805.8	809.7	761.9	729.6	742.5	746.3
57.5°	10437.6	8849.3	3011.4	781.2	687.0	747.7	798.0	770.9	746.3	791.6	795.4
60°	11486.1	9497.6	2458.7	721.8	644.4	725.7	823.9	826.4	821.2	944.0	953.0
62.5°	11869.7	9504.0	1745.9	671.5	621.1	738.7	878.1	882.0	882.0	995.6	1012.4
65°	11332.5	8712.5	1162.2	641.8	605.6	767.0	922.0	905.2	865.2	944.0	925.9
67.5°	9439.4	6782.0	849.7	622.4	583.7	768.3	960.8	918.1	849.7	916.9	885.9
70°	6487.6	4315.5	711.5	604.4	557.8	734.8	981.4	914.2	826.4	854.9	813.6
71°	5222.1	3443.9	675.4	597.9	547.5	715.3	984.0	909.1	814.8	832.9	795.4
72.5°	3440.1	2121.6	631.5	583.7	532.0	681.8	977.5	897.4	799.3	800.6	776.1
75°	1357.1	879.3	568.1	551.4	488.2	627.6	949.1	872.9	769.6	743.8	733.5
77.5°	685.7	574.6	499.7	506.2	436.5	572.0	909.1	832.9	728.3	693.5	685.7
80°	501.0	436.5	427.4	439.1	378.4	517.8	858.8	778.7	675.4	711.5	696.0
82.5°	304.7	266.0	334.4	362.8	316.4	462.3	799.3	715.3	608.2	560.5	542.4
85°	144.6	156.2	241.5	267.3	233.7	369.3	730.9	645.7	530.7	458.4	466.2
87.5°	71.0	86.5	138.2	160.1	153.6	271.2	551.4	501.0	418.4	344.7	337.1
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)