

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: P195716

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7050-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195716
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
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-SL4-7050-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12747 lumens
Efficiency: N/A
Efficacy: 98.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

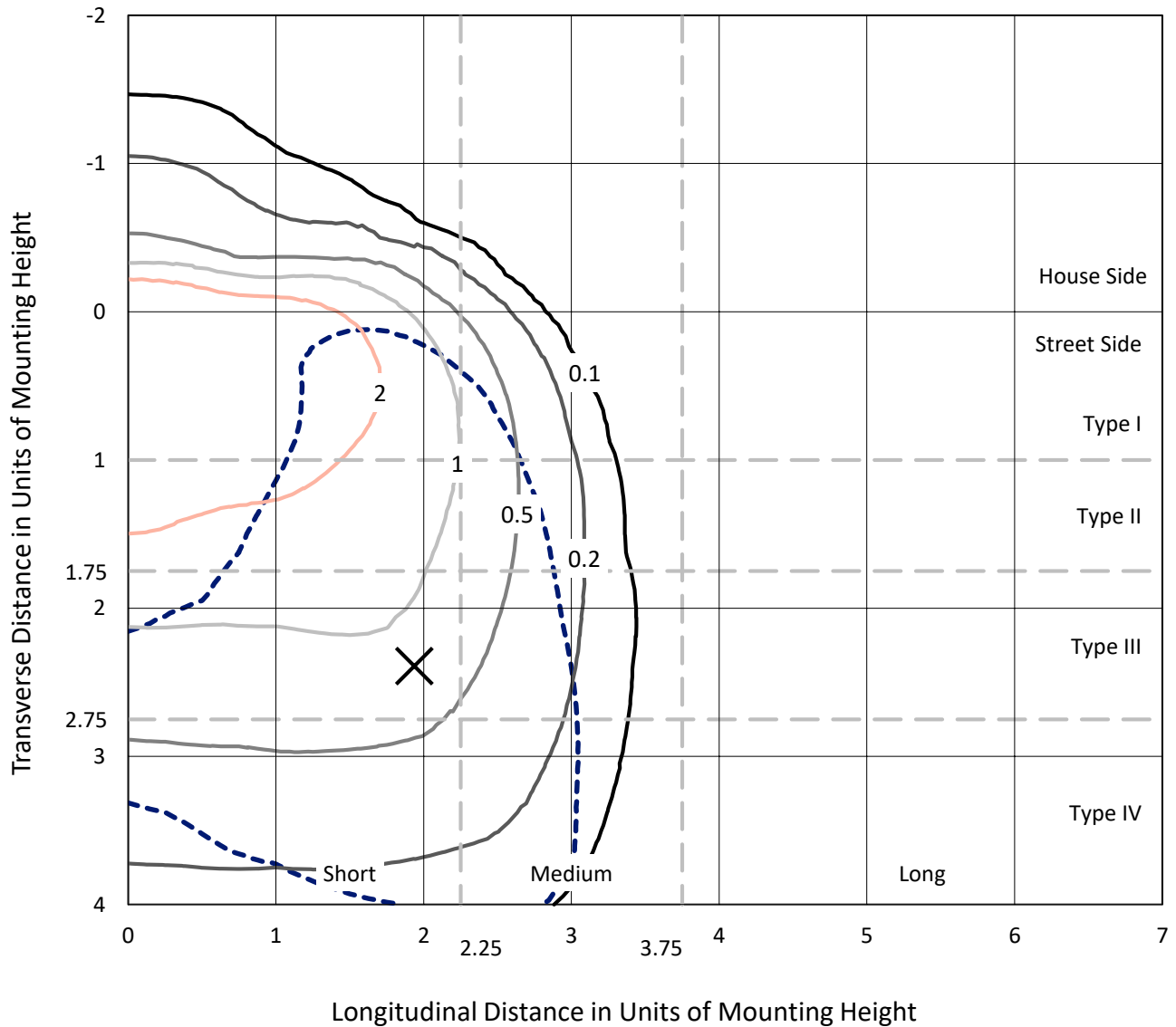
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P195716
 CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-1200

Iso-Footcandle Lines of Horizontal Illumination

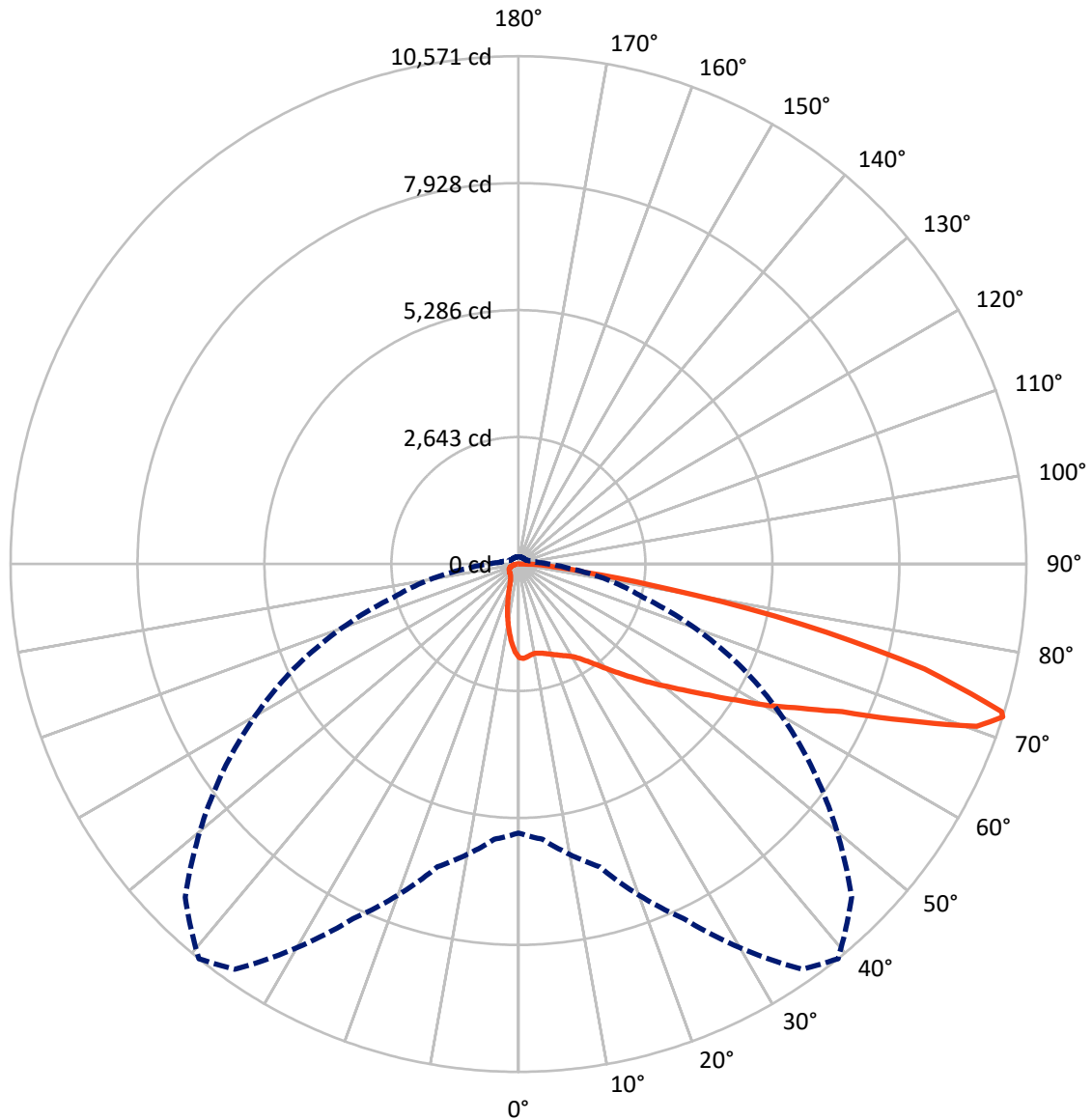
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.9 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P195716
CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-1200

Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

REPORT NUMBER: P195716

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-1200

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1461.6	0.0	1461.6
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	11285.4	0.0	11285.4
	% Fixture	88.5	0.0	88.5
Total	Lumens	12747.0	0.0	12747.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.3	1.3
10°-20°	420.4	3.3
20°-30°	655.1	5.1
30°-40°	1008.6	7.9
40°-50°	1644.3	12.9
50°-60°	2555.1	20.0
60°-70°	3419.9	26.8
70°-80°	2459.4	19.3
80°-90°	416.9	3.3
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°-90°	12747.0	100.0
0°-180°	12747.0	100.0

Coefficient of Utilization



REPORT NUMBER: P195716

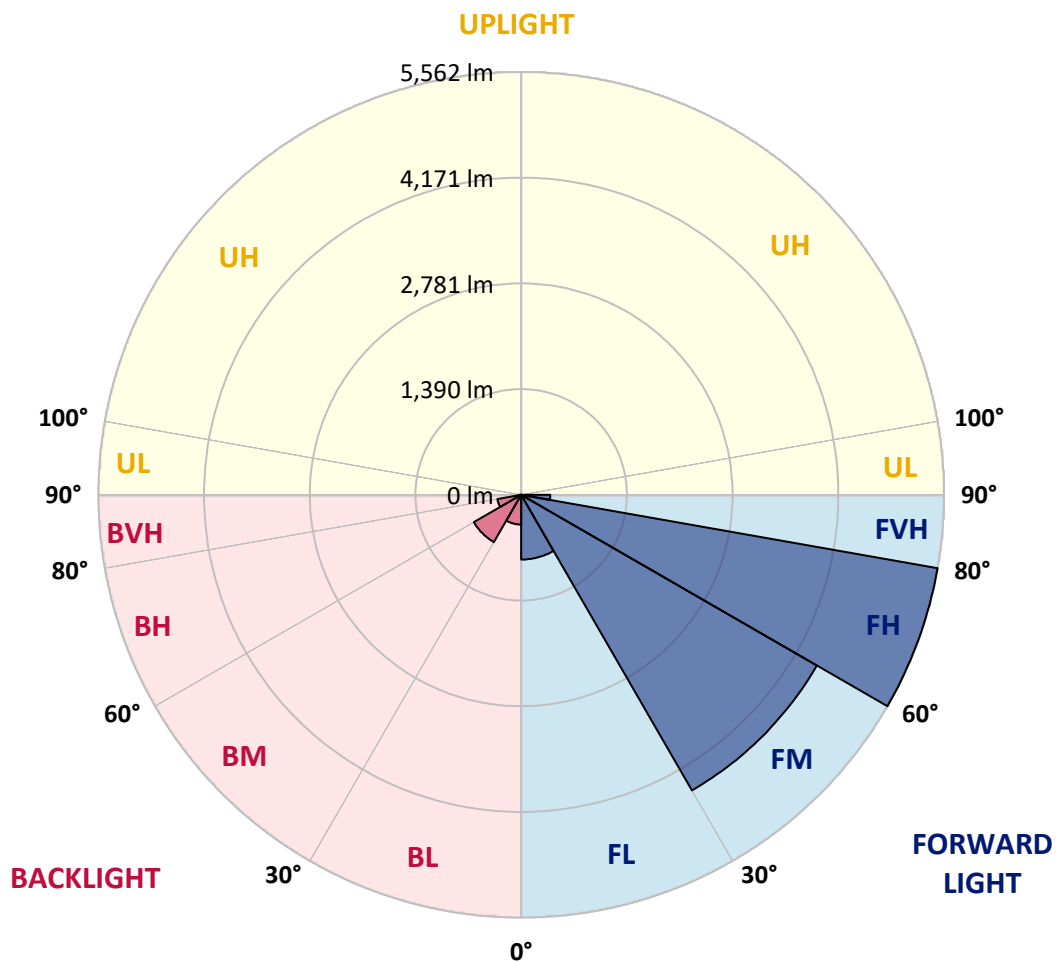
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	851.5	6.7			
FM	(30°-60°)	4489.7	35.2			
FH	(60°-80°)	5561.7	43.6			G3/7500
FVH	(80°-90°)	382.5	3.0			G3/500
BL	(0°-30°)	391.3	3.1	B1/500		
BM	(30°-60°)	718.3	5.6	B1/1000		
BH	(60°-80°)	317.6	2.5	B1/500		G1/500
BVH	(80°-90°)	34.5	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





REPORT NUMBER: P195716
 CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-1200

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7
2.5°	1988.6	1989.5	1986.9	1979.2	1972.4	1968.9	1963.0	1952.7	1939.0	1929.6	1921.9
5°	1969.8	1972.4	1970.7	1957.8	1945.8	1939.0	1929.6	1915.0	1897.1	1889.4	1871.4
7.5°	1955.3	1957.0	1951.8	1937.3	1914.2	1905.6	1888.5	1869.7	1853.4	1842.3	1820.9
10°	1945.0	1946.7	1942.4	1927.9	1902.2	1891.9	1871.4	1850.9	1829.5	1815.8	1791.8
12.5°	1930.4	1933.9	1933.9	1927.0	1909.9	1903.1	1882.5	1860.3	1840.6	1826.0	1796.1
15°	1927.9	1932.1	1939.9	1939.0	1933.9	1928.7	1912.5	1890.2	1873.1	1856.0	1819.2
17.5°	1949.3	1958.7	1974.1	1979.2	1975.8	1964.7	1945.8	1925.3	1906.5	1890.2	1844.9
20°	2003.2	2008.3	2031.4	2041.7	2024.6	2008.3	1983.5	1957.0	1939.9	1927.0	1868.8
22.5°	2084.5	2091.3	2110.1	2111.0	2075.0	2055.4	2023.7	1991.2	1974.9	1969.8	1901.3
25°	2214.5	2212.8	2217.9	2196.6	2131.5	2108.4	2069.9	2032.3	2021.1	2031.4	1949.3
27.5°	2370.3	2366.0	2349.7	2294.1	2195.7	2165.8	2119.5	2086.2	2086.2	2110.1	2014.3
30°	2550.0	2545.7	2492.6	2399.4	2271.9	2237.6	2188.9	2153.8	2171.7	2217.9	2102.4
32.5°	2739.9	2724.5	2650.1	2525.1	2380.5	2342.9	2295.8	2259.9	2294.1	2372.8	2229.1
35°	2918.8	2910.2	2818.6	2670.6	2520.9	2489.2	2456.7	2412.2	2467.0	2589.3	2407.9
37.5°	3103.6	3096.7	2984.6	2827.2	2692.0	2670.6	2643.2	2612.4	2700.6	2861.4	2650.1
40°	3309.8	3296.1	3154.9	2997.5	2891.4	2881.1	2866.6	2858.0	3000.1	3239.6	2956.4
42.5°	3543.4	3516.9	3334.6	3184.9	3108.7	3117.3	3109.6	3143.8	3361.2	3676.0	3320.9
45°	3810.4	3757.3	3513.5	3384.3	3349.2	3383.4	3399.7	3486.9	3788.1	4180.0	3728.2
47.5°	4060.3	3991.8	3709.4	3600.7	3620.4	3679.5	3725.7	3879.7	4256.2	4678.1	4144.1
50°	4290.4	4213.4	3919.1	3824.9	3920.8	4004.6	4100.5	4317.8	4754.2	5190.6	4525.7
52.5°	4460.7	4405.1	4128.7	4069.7	4265.6	4376.9	4530.0	4804.7	5257.4	5679.2	4866.3
55°	4592.5	4562.5	4333.2	4350.3	4655.8	4815.0	5000.7	5316.4	5789.6	6117.3	5140.1
57.5°	4744.8	4722.6	4566.8	4689.2	5140.1	5340.4	5559.4	5910.3	6296.2	6503.2	5354.9
60°	4905.7	4905.7	4826.9	5097.3	5746.0	5975.3	6193.5	6466.5	6801.0	6850.7	5442.2
62.5°	5027.2	5058.8	5087.1	5532.0	6321.0	6605.9	6845.5	7107.4	7323.9	7021.8	5236.8
65°	5203.5	5271.1	5430.2	6034.3	7032.9	7406.0	7729.5	7949.4	7747.4	6885.7	4566.8
67.5°	5506.4	5606.5	5945.3	6782.2	8123.1	8681.8	8995.9	8615.9	7664.4	6029.2	3498.1
70°	5779.3	5920.5	6499.8	7731.2	9540.1	10120.3	9975.6	8461.1	6675.2	4419.6	2152.1
72°	5597.9	5752.0	6525.5	8144.5	10297.4	10571.2	9808.8	7498.4	5158.1	2697.1	1061.1
72.5°	5479.0	5639.0	6442.5	8134.2	10317.9	10513.9	9576.9	7115.9	4682.3	2360.0	858.3
75°	4577.1	4714.0	5539.7	7209.2	9092.6	8733.2	7473.6	4605.3	2152.1	762.4	441.5
77.5°	2988.9	3093.3	3819.8	4994.7	6368.9	6023.2	4548.9	2156.3	806.9	462.9	332.0
80°	1501.7	1576.2	2044.2	2626.1	3437.3	3162.6	2099.9	1043.1	539.9	334.6	261.0
82.5°	1044.8	1113.3	1407.6	1340.9	1436.7	1390.5	987.5	870.2	403.9	211.4	136.9
85°	876.2	947.2	1164.6	955.8	782.1	712.8	707.7	822.3	267.0	104.4	115.5
87.5°	764.1	871.9	960.9	698.2	536.5	473.2	521.1	753.9	84.7	57.3	35.1
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: P195716

CATALOG NUMBER: NAV-AF-02-D-UNV-SL4-7050-1200

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7	1946.7
2.5°	1909.0	1906.5	1893.6	1874.0	1859.4	1850.0	1832.0	1831.2	1832.9	1817.5	1823.5
5°	1855.1	1844.9	1811.5	1766.1	1729.4	1694.3	1655.8	1642.9	1631.8	1608.7	1611.3
7.5°	1798.7	1780.7	1722.5	1648.1	1577.0	1512.0	1447.8	1416.2	1392.2	1362.3	1362.3
10°	1765.3	1737.1	1648.1	1539.4	1426.4	1331.5	1235.6	1178.3	1136.4	1097.9	1095.3
12.5°	1763.6	1720.8	1596.7	1447.0	1292.1	1158.6	1027.7	939.5	877.1	831.7	827.5
15°	1777.3	1717.4	1553.9	1360.5	1165.5	991.7	830.0	717.9	638.3	587.9	582.7
17.5°	1789.2	1713.1	1507.7	1269.8	1042.2	830.9	651.2	534.8	459.5	418.4	414.2
20°	1800.4	1703.7	1448.7	1174.0	906.2	680.3	509.1	415.0	365.4	342.3	339.7
22.5°	1816.6	1695.1	1387.1	1066.2	772.7	553.6	420.1	352.5	326.0	314.9	313.2
25°	1843.2	1696.0	1327.2	955.8	650.3	461.2	363.7	321.7	307.2	299.5	299.5
27.5°	1881.7	1706.2	1268.1	843.7	546.8	397.9	330.3	305.5	296.1	290.1	288.4
30°	1938.1	1725.1	1205.7	737.6	464.6	354.3	310.6	295.2	287.5	282.4	281.5
32.5°	2020.3	1758.4	1139.8	640.9	402.2	323.5	296.1	286.7	280.7	276.4	275.5
35°	2142.6	1817.5	1075.6	558.8	357.7	301.2	284.1	276.4	273.0	271.3	270.4
37.5°	2322.3	1912.5	1014.8	494.6	328.6	286.7	272.1	267.8	266.1	266.1	266.1
40°	2548.2	2037.4	960.1	449.2	312.3	275.5	263.6	260.1	260.1	261.0	261.0
42.5°	2822.9	2194.0	913.0	418.4	302.9	267.8	257.6	255.9	255.0	255.0	255.9
45°	3142.1	2378.8	883.9	394.5	296.1	263.6	253.3	252.4	249.0	247.3	247.3
47.5°	3463.0	2576.5	882.2	380.8	287.5	258.4	249.0	249.0	242.2	238.7	239.6
50°	3762.5	2753.6	901.0	377.4	282.4	250.7	244.7	245.6	236.2	231.9	231.0
52.5°	4003.8	2888.8	924.1	381.6	282.4	243.9	237.0	241.3	231.0	225.9	225.0
55°	4190.3	2982.9	932.7	391.1	285.8	237.9	230.2	237.0	229.3	222.5	222.5
57.5°	4323.8	3012.9	895.9	395.3	290.9	237.0	223.3	236.2	231.9	223.3	223.3
60°	4275.0	2839.2	759.0	379.1	290.1	235.3	218.2	237.9	240.4	231.0	231.0
62.5°	3894.2	2375.4	609.3	342.3	275.5	229.3	212.2	236.2	246.4	243.0	241.3
65°	3170.3	1742.2	472.3	298.6	250.7	216.5	199.4	220.8	232.7	236.2	237.0
67.5°	2234.2	1103.0	367.1	254.1	219.9	197.7	184.8	195.1	199.4	201.1	204.5
70°	1221.9	597.3	291.8	213.9	188.3	178.8	169.4	170.3	168.6	166.9	168.6
72°	613.5	390.2	246.4	185.7	166.9	160.9	156.6	154.0	154.0	151.5	152.3
72.5°	528.0	362.8	237.9	178.8	161.7	156.6	153.2	150.6	149.7	148.0	148.9
75°	351.7	287.5	198.5	149.7	137.8	134.3	136.1	133.5	134.3	132.6	133.5
77.5°	284.1	247.3	168.6	126.6	118.1	113.0	116.4	117.2	118.9	117.2	116.4
80°	237.9	210.5	141.2	104.4	98.4	94.1	95.8	101.8	102.7	97.5	96.7
82.5°	154.0	169.4	111.2	81.3	75.3	73.6	77.9	83.9	85.6	78.7	77.0
85°	129.2	136.1	80.4	55.6	49.6	47.9	56.5	62.5	66.7	59.9	58.2
87.5°	35.9	66.7	39.4	26.5	22.2	22.2	27.4	32.5	38.5	39.4	39.4
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)