

Scaled data based on original data using
LM-31-95 IESNA Approved Method for Photometric Testing of Roadway Luminaires
Using Incandescent Filament and High Intensity Discharge Lamps

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: STREETWORKS

Report Number: 48312 _450MP

Luminaire Tested: **HMX45PXXDW**

Issue Date: 3/3/2020

Test Information

Test Method: LM-31-95
Report Number: 48312 _450MP
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: HMX45PXXDW
Description: 400W MH TYPE V HIGH MAST
Light Source: 450 WATT PULSE-START CLEAR VBU BURN
Ballast/Driver: -

Summary

Lumens per Lamp: 50000 (1 lamp)
Luminaire Lumens: 26467.3 lumens
Efficiency: 52.9%
Efficacy: 52.1 lumens/watt
Luminous Opening: (L: -2.33 ' x W: 0 ' x H: 2 '
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B5 - U0 - G4

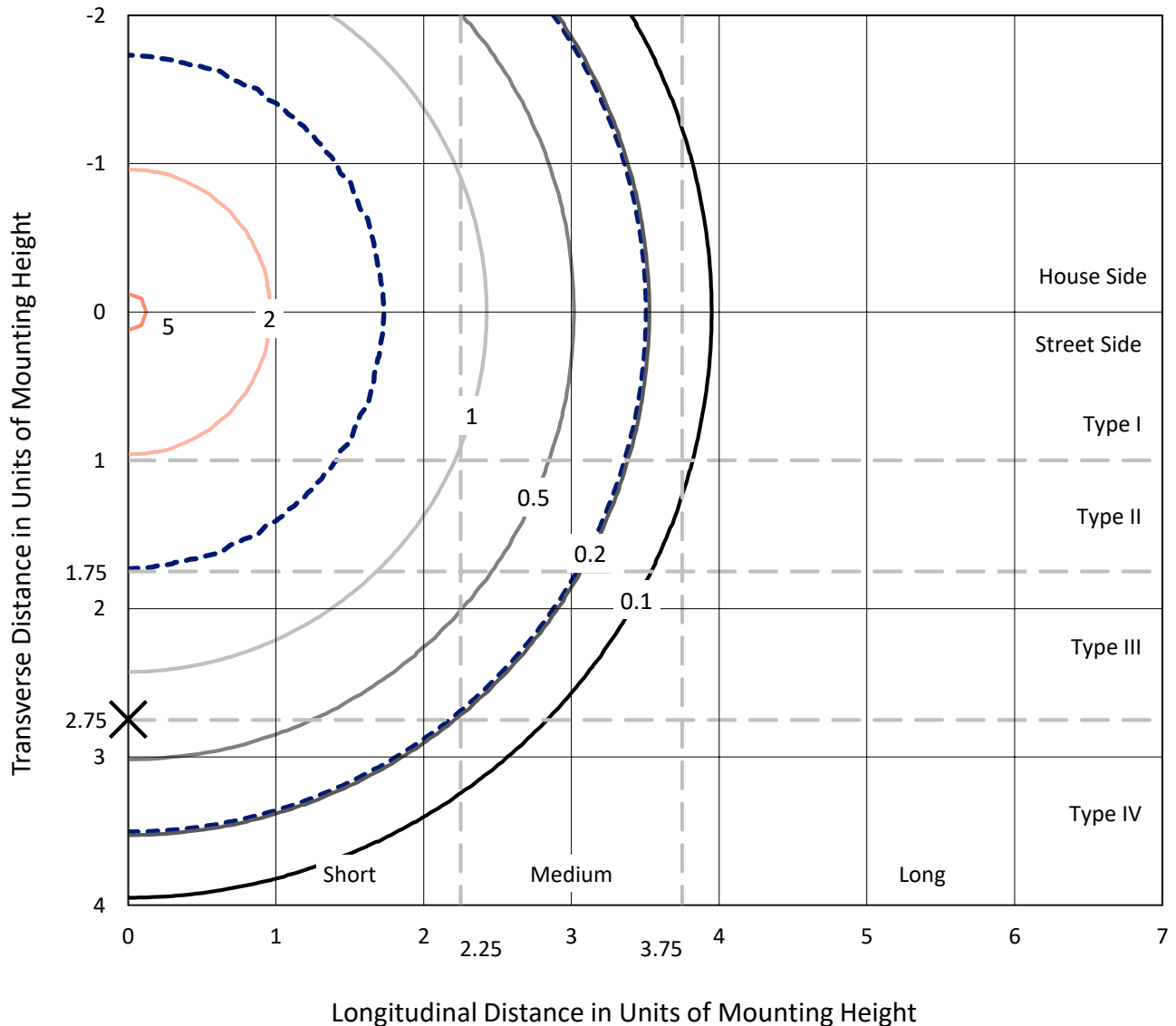
Input Watts (W): 508
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

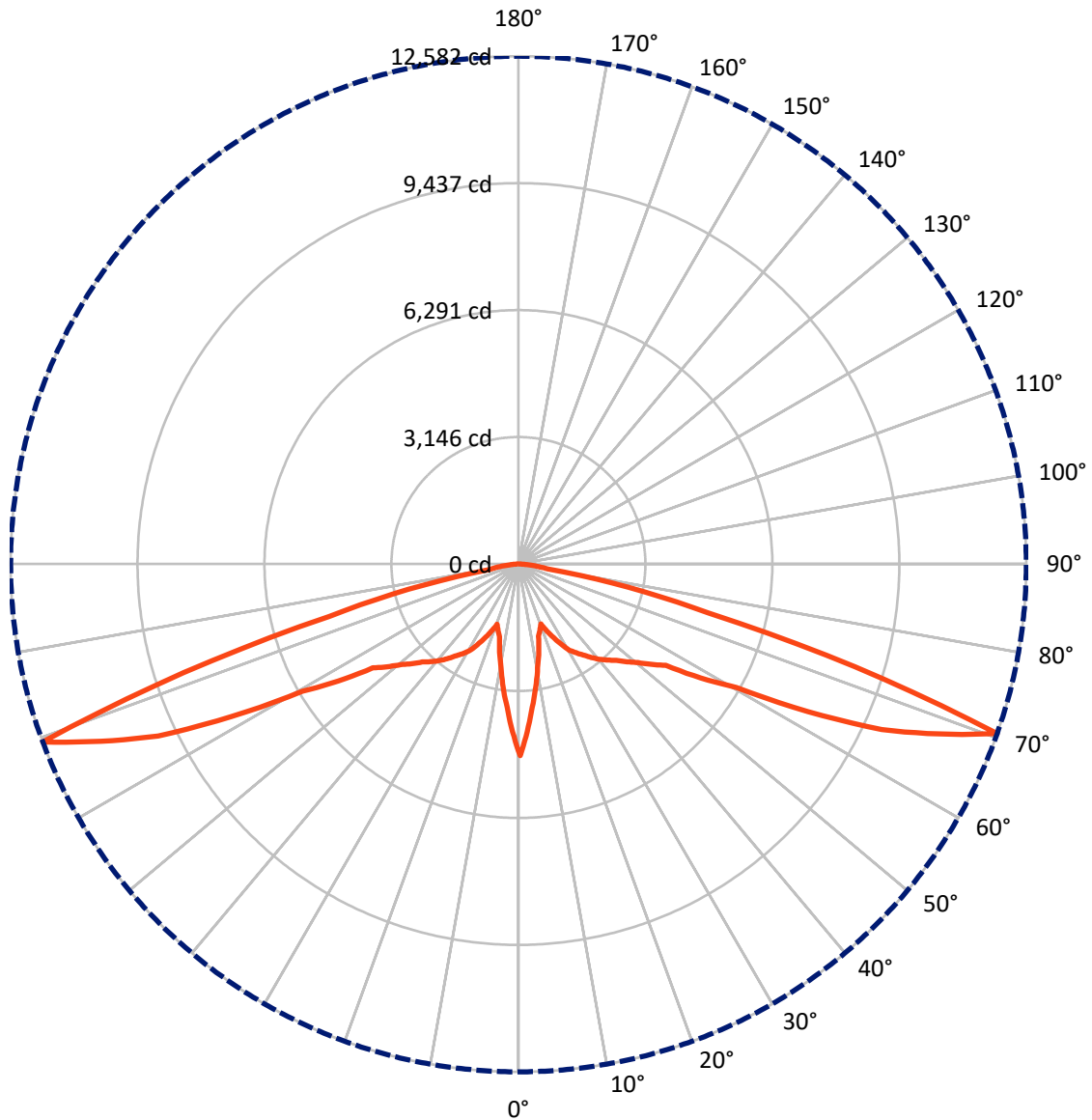
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.6 fc
 Type V - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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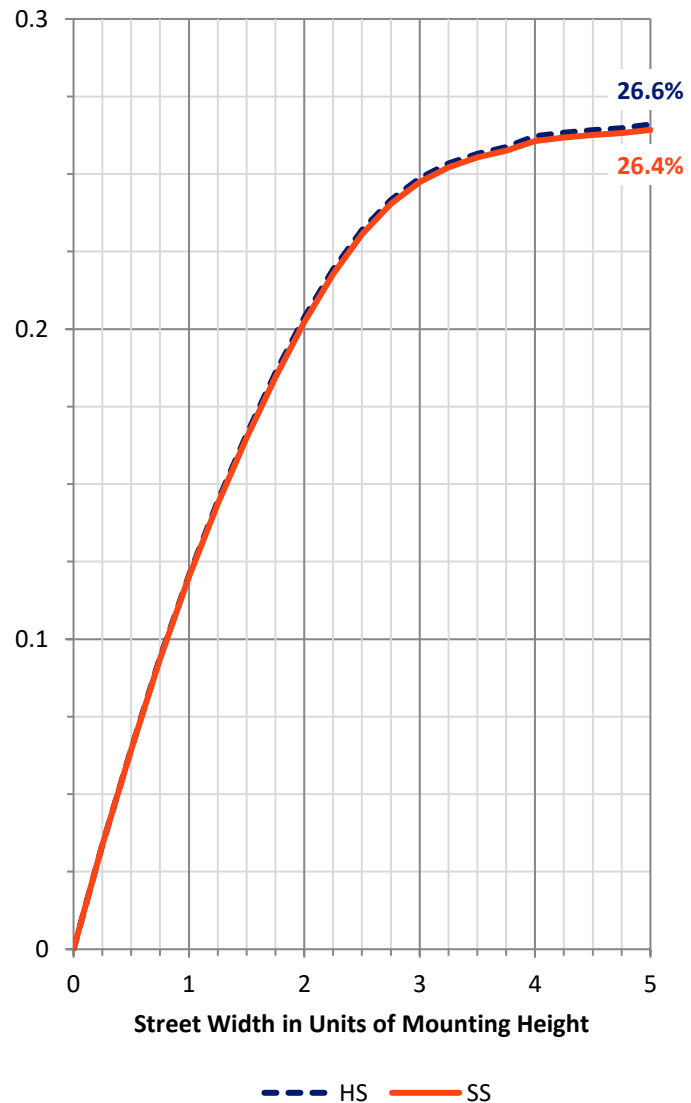
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|--------|----------|--------|---------|
| House Side | Lumens | 13233.7 | 0.0 | 13233.7 |
| | % Lamp | 26.5 | 0.0 | 26.5 |
| Street Side | Lumens | 13233.7 | 0.0 | 13233.7 |
| | % Lamp | 26.5 | 0.0 | 26.5 |
| Total | Lumens | 26467.3 | 0.0 | 26467.3 |
| | % Lamp | 52.9 | 0.0 | 52.9 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|---------|-----------|--------|
| 0°-10° | 320.2 | 1.2 | 0.6 |
| 10°-20° | 549.0 | 2.1 | 1.1 |
| 20°-30° | 945.9 | 3.6 | 1.9 |
| 30°-40° | 1752.2 | 6.6 | 3.5 |
| 40°-50° | 2668.3 | 10.1 | 5.3 |
| 50°-60° | 4258.0 | 16.1 | 8.5 |
| 60°-70° | 9605.1 | 36.3 | 19.2 |
| 70°-80° | 6057.6 | 22.9 | 12.1 |
| 80°-90° | 310.9 | 1.2 | 0.6 |
| 90°-100° | 0.0 | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 | 0.0 |
| 0°-90° | 26467.3 | 100.0 | 52.9 |
| 0°-180° | 26467.3 | 100.0 | 52.9 |

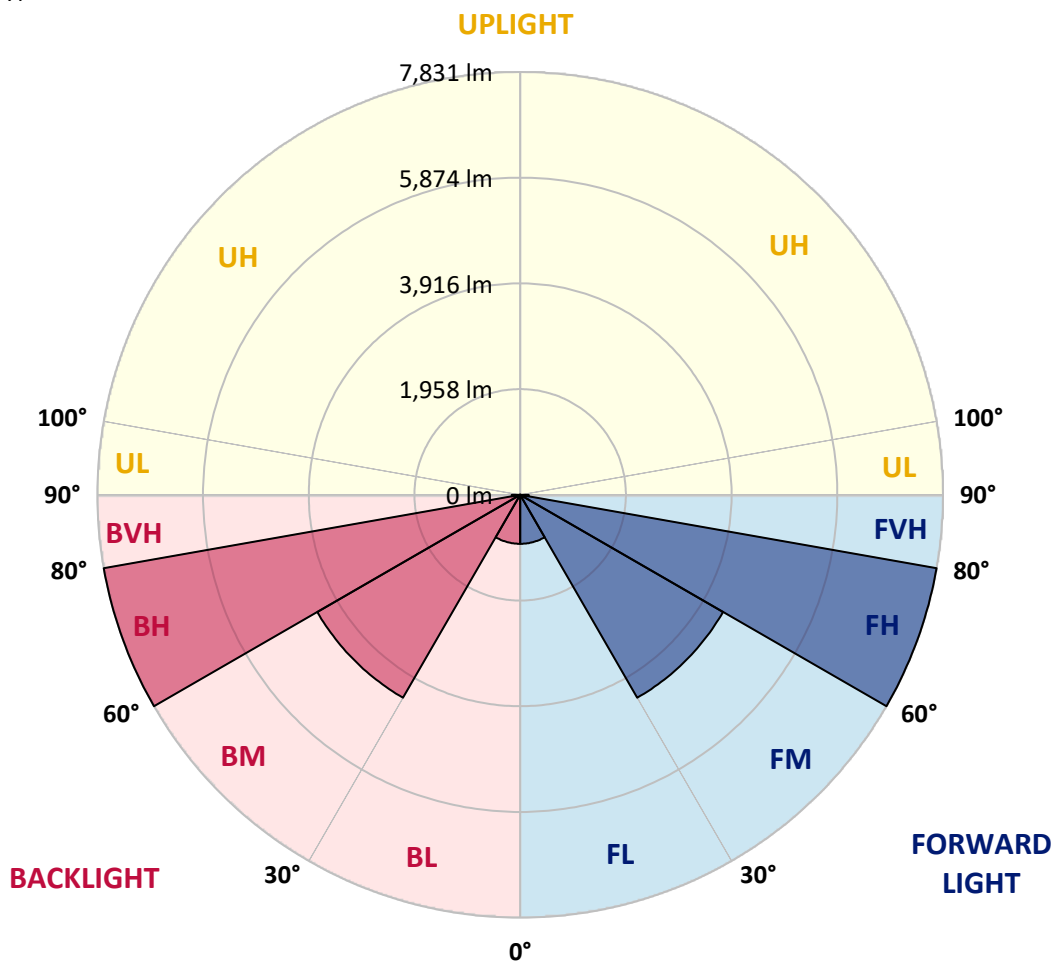


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Lamp | Zone Rating/Lumen Limit | | |
|----------------|---------|--------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 907.6 | 1.8 | | | |
| FM (30°-60°) | 4339.3 | 8.7 | | | |
| FH (60°-80°) | 7831.4 | 15.7 | | | G4/12000 |
| FVH (80°-90°) | 155.5 | 0.3 | | | G2/225 |
| BL (0°-30°) | 907.6 | 1.8 | B2/1000 | | |
| BM (30°-60°) | 4339.3 | 8.7 | B3/5000 | | |
| BH (60°-80°) | 7831.4 | 15.7 | B5 | | G4/12000 |
| BVH (80°-90°) | 155.5 | 0.3 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |
| Trapped Light | 23532.7 | 47.1 | | | |

BUG Rating: B5-U0-G4
 Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 |
| 5° | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 |
| 10° | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 |
| 15° | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 |
| 20° | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 |
| 25° | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 |
| 30° | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 |
| 35° | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 |
| 40° | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 |
| 45° | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 |
| 50° | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 |
| 55° | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 |
| 60° | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 |
| 65° | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 |
| 70° | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 |
| 75° | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 |
| 80° | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 |
| 85° | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 |
| 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):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 | 4748.5 |
| 5° | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 | 3561.8 |
| 10° | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 | 2611.8 |
| 15° | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 | 1860.3 |
| 20° | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 | 1582.4 |
| 25° | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 | 2017.6 |
| 30° | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 | 2473.5 |
| 35° | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 | 2769.1 |
| 40° | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 | 3105.9 |
| 45° | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 | 3402.9 |
| 50° | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 | 3838.2 |
| 55° | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 | 4430.9 |
| 60° | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 | 6211.8 |
| 65° | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 | 9891.2 |
| 70° | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 | 12582.4 |
| 75° | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 | 4866.2 |
| 80° | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 | 727.9 |
| 85° | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 | 207.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)