

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P924384

Luminaire Tested: DFN2DIP-HX3F0-040D070US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924384
REPORT IS A COMBINATION OF REPORTS P899260 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-040D070US950-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

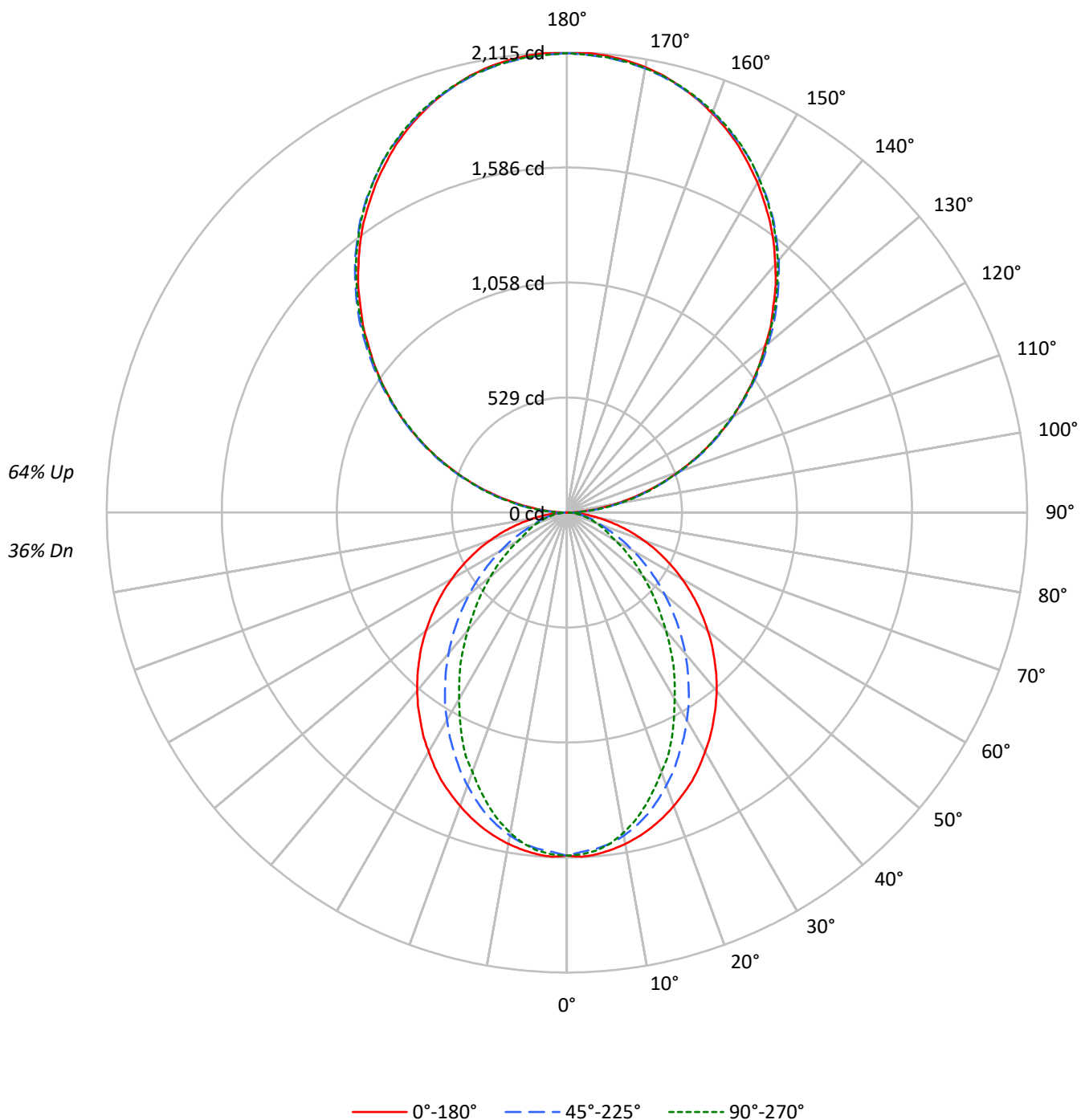
Lumens per Lamp: N/A
Luminaire Lumens: 9153.7 lumens
Efficiency: N/A
Efficacy: 104.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 87.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43
1	95	91	87	84	86	82	79	76	66	64	62	52	50	49	38	37	37
2	87	80	74	69	78	72	67	63	59	55	52	46	44	42	34	33	31
3	79	70	63	58	71	64	58	53	52	48	44	41	38	36	31	29	27
4	73	62	55	49	65	57	50	45	46	42	38	37	33	31	27	25	24
5	67	56	48	42	60	51	44	39	42	37	33	33	29	27	25	23	21
6	61	50	42	37	55	46	39	34	37	32	29	30	26	24	23	20	18
7	57	45	37	32	51	41	35	30	34	29	25	27	24	21	21	18	17
8	53	41	33	28	48	38	31	26	31	26	23	25	21	19	19	17	15
9	49	37	30	25	44	34	28	24	28	24	20	23	19	17	18	15	14
10	46	34	27	23	42	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1827	1827	1827
5°	1829	1797	1808
10°	1810	1760	1749
15°	1784	1701	1657
20°	1751	1619	1544
25°	1716	1528	1436
30°	1670	1435	1298
35°	1624	1335	1178
40°	1578	1232	1040
45°	1525	1117	915
50°	1469	1002	792
55°	1411	878	675
60°	1344	750	555
65°	1267	619	498
70°	1173	497	449
75°	1055	436	407
80°	884	361	350
85°	604	235	257

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1988 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	1.6
10°-20°	405.8	4.4
20°-30°	569.7	6.2
30°-40°	621.0	6.8
40°-50°	570.8	6.2
50°-60°	448.2	4.9
60°-70°	291.8	3.2
70°-80°	150.2	1.6
80°-90°	44.4	0.5
90°-100°	130.7	1.4
100°-110°	415.3	4.5
110°-120°	710.6	7.8
120°-130°	934.6	10.2
130°-140°	1049.0	11.5
140°-150°	1028.7	11.2
150°-160°	862.9	9.4
160°-170°	572.3	6.3
170°-180°	200.0	2.2
0°-30°	1123.3	12.3
0°-40°	1744.3	19.1
0°-60°	2763.3	30.2
0°-90°	3249.6	35.5
90°-120°	1256.6	13.7
90°-150°	4268.9	46.6
90°-180°	5904.0	64.5
0°-180°	9153.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	2	23	62	59	60	9
95°	93	111	114	114	111	103
105°	383	388	392	395	395	405
115°	713	723	720	718	713	705
125°	1037	1053	1048	1042	1040	927
135°	1342	1361	1365	1363	1358	1037
145°	1629	1642	1652	1654	1647	1018
155°	1862	1868	1873	1882	1876	857
165°	2026	2024	2024	2037	2028	572
175°	2108	2103	2099	2112	2101	200
180°	2112	2112	2112	2112	2112	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	1.9	22.9	62.4	58.6	60.5
92.5°	39.5	53.5	55.4	57.3	57.3
95°	92.9	110.8	114.0	114.0	110.8
97.5°	154.7	171.2	178.3	178.3	178.3
100°	226.0	240.7	245.8	245.8	243.8
102.5°	301.2	312.0	319.0	320.9	319.0
105°	383.3	388.4	392.2	395.4	395.4
107.5°	464.8	472.4	472.4	473.8	464.8
110°	543.8	554.0	554.0	554.0	548.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	629.1	639.9	638.0	632.9	629.1
115°	713.1	723.3	720.2	718.3	713.1
117.5°	796.5	810.5	801.6	796.5	791.4
120°	880.5	894.6	880.5	880.5	874.8
122.5°	957.0	974.8	965.9	960.8	957.0
125°	1037.2	1053.1	1048.1	1042.3	1040.4
127.5°	1115.5	1135.3	1128.3	1120.7	1115.5
130°	1188.8	1211.7	1208.5	1204.7	1197.7
132.5°	1270.9	1288.8	1290.0	1281.1	1276.0
135°	1341.6	1361.3	1365.2	1363.2	1358.1
137.5°	1420.5	1436.4	1439.6	1438.3	1430.7
140°	1490.0	1505.9	1514.8	1514.8	1507.8
142.5°	1561.2	1577.2	1582.2	1584.1	1577.2
145°	1628.8	1641.5	1651.7	1653.6	1646.6
147.5°	1689.2	1705.2	1712.8	1716.0	1709.0
150°	1751.6	1762.4	1769.5	1775.2	1769.5
152.5°	1807.0	1817.8	1826.7	1833.8	1826.7
155°	1862.4	1867.5	1873.3	1882.1	1876.4
157.5°	1910.2	1914.0	1917.2	1929.9	1921.0
160°	1952.8	1956.7	1958.6	1969.3	1961.7
162.5°	1992.3	1992.3	1994.2	2006.3	1997.4
165°	2026.0	2024.1	2024.1	2036.9	2027.9
167.5°	2056.6	2050.9	2050.9	2063.6	2054.7
170°	2079.5	2074.5	2072.6	2085.3	2074.5
172.5°	2095.5	2090.3	2088.4	2101.2	2090.3
175°	2108.1	2103.1	2099.3	2112.0	2101.2
177.5°	2115.2	2110.1	2106.2	2117.1	2106.2
180°	2112.0	2112.0	2112.0	2112.0	2112.0

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	7.67	8.39	8.75	9.47	10.93	3.64	4.37	4.72	5.44	6.91
	3H	9.33	9.98	10.42	11.06	12.55	4.82	5.47	5.91	6.55	8.04
	4H	9.93	10.54	11.03	11.63	13.12	5.26	5.88	6.36	6.96	8.45
	6H	10.34	10.90	11.44	11.99	13.49	5.57	6.14	6.68	7.23	8.73
	8H	10.46	10.99	11.57	12.10	13.59	5.66	6.20	6.77	7.30	8.80
	12H	10.51	11.02	11.63	12.12	13.64	5.70	6.21	6.81	7.30	8.82
4H	2H	7.67	8.29	8.78	9.37	10.86	4.22	4.84	5.33	5.92	7.41
	3H	9.48	9.99	10.59	11.11	12.61	5.56	6.07	6.67	7.18	8.68
	4H	10.16	10.63	11.28	11.74	13.26	6.10	6.57	7.21	7.67	9.19
	6H	10.67	11.07	11.79	12.19	13.71	6.51	6.91	7.63	8.03	9.55
	8H	10.84	11.21	11.96	12.33	13.86	6.63	7.00	7.75	8.12	9.65
	12H	10.92	11.26	12.06	12.39	13.93	6.69	7.03	7.83	8.16	9.69
8H	4H	10.12	10.50	11.25	11.61	13.15	6.36	6.74	7.49	7.86	9.39
	6H	10.68	10.99	11.82	12.14	13.67	6.87	7.18	8.02	8.34	9.87
	8H	10.89	11.16	12.04	12.30	13.85	7.06	7.33	8.21	8.47	10.02
	12H	11.02	11.25	12.17	12.39	13.97	7.17	7.41	8.32	8.54	10.13
12H	4H	10.07	10.41	11.21	11.54	13.08	6.36	6.70	7.50	7.83	9.37
	6H	10.65	10.92	11.80	12.06	13.61	6.92	7.19	8.07	8.33	9.88
	8H	10.86	11.10	12.01	12.23	13.82	7.12	7.36	8.27	8.49	10.08