

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: P907933

Luminaire Tested: DFN2DIP-HX2F0-040D060US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907933
REPORT IS A COMBINATION OF REPORTS P900716 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D060US840-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

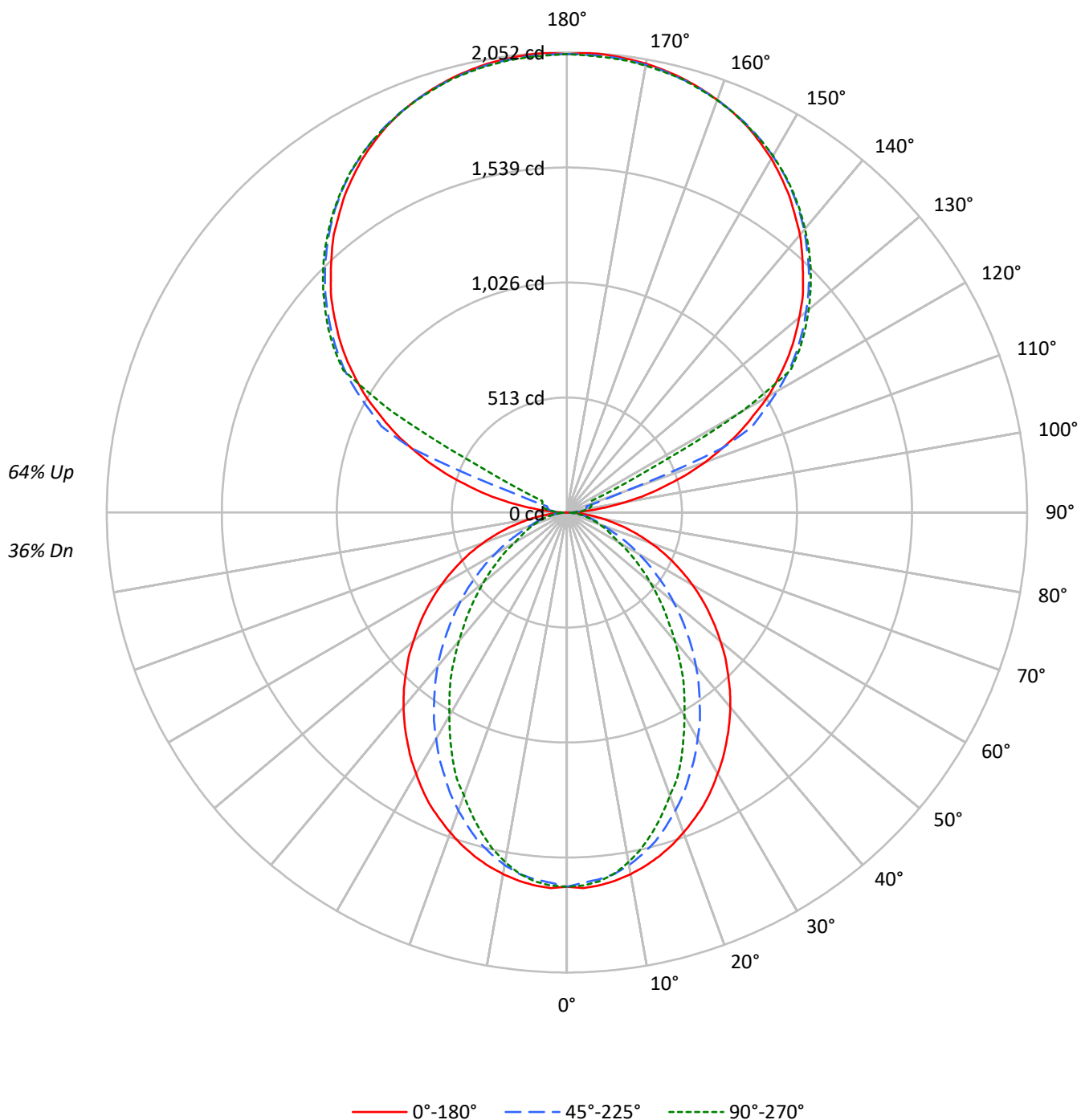
Lumens per Lamp: N/A
Luminaire Lumens: 9432.1 lumens
Efficiency: N/A
Efficacy: 111.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 84.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907933

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907933

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-RLLONL

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	76	76	76	59	59	59	44	44	44
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3934	3934	3934
5°	3934	3862	3889
10°	3889	3777	3755
15°	3829	3643	3553
20°	3751	3462	3307
25°	3673	3261	3070
30°	3569	3056	2772
35°	3467	2837	2510
40°	3363	2611	2212
45°	3242	2361	1941
50°	3117	2110	1677
55°	2986	1842	1425
60°	2833	1564	1166
65°	2658	1283	1041
70°	2445	1021	932
75°	2176	882	835
80°	1791	714	703
85°	1171	441	493

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3242 cd/sqm

TEST NUMBER: P907933

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	1.7
10°-20°	429.5	4.6
20°-30°	603.0	6.4
30°-40°	657.4	7.0
40°-50°	604.2	6.4
50°-60°	474.5	5.0
60°-70°	308.9	3.3
70°-80°	159.0	1.7
80°-90°	44.2	0.5
90°-100°	67.4	0.7
100°-110°	251.4	2.7
110°-120°	666.7	7.1
120°-130°	1105.7	11.7
130°-140°	1174.5	12.5
140°-150°	1091.6	11.6
150°-160°	877.6	9.3
160°-170°	565.5	6.0
170°-180°	194.6	2.1
0°-30°	1189.0	12.6
0°-40°	1846.4	19.6
0°-60°	2925.1	31.0
0°-90°	3437.1	36.4
90°-120°	985.5	10.4
90°-150°	4357.2	46.2
90°-180°	5995.0	63.6
0°-180°	9432.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1670	1670	1670	1670	1670	
5°	1670	1662	1642	1656	1651	158
15°	1588	1571	1520	1491	1476	447
25°	1441	1393	1293	1231	1209	663
35°	1242	1165	1032	937	903	777
45°	1015	914	756	648	612	784
55°	772	654	491	400	372	690
65°	521	399	263	212	207	517
75°	278	172	121	110	109	294
85°	65	33	29	29	29	75
90°	1	18	30	37	40	9
95°	96	47	58	65	64	114
105°	450	494	90	106	112	481
115°	851	876	913	228	121	838
125°	1203	1222	1250	1261	1265	1073
135°	1489	1512	1526	1540	1537	1150
145°	1727	1725	1750	1761	1753	1080
155°	1901	1888	1906	1915	1903	876
165°	2004	1995	1999	2009	1999	566
175°	2049	2039	2042	2052	2038	195
180°	2045	2045	2045	2045	2045	

TEST NUMBER: P907933

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1669.5	1669.5	1669.5	1669.5	1669.5
2.5°	1677.1	1669.5	1652.8	1668.1	1665.0
5°	1669.5	1661.9	1642.2	1655.9	1651.4
7.5°	1655.9	1646.9	1625.8	1631.6	1624.2
10°	1637.8	1627.2	1597.0	1592.4	1583.5
12.5°	1615.2	1601.5	1560.6	1551.7	1535.0
15°	1587.9	1571.2	1519.9	1491.3	1476.2
17.5°	1556.2	1532.0	1468.4	1435.3	1411.1
20°	1519.9	1489.7	1414.1	1376.4	1343.1
22.5°	1480.7	1445.9	1358.2	1306.9	1284.3
25°	1441.4	1393.0	1293.2	1231.4	1208.6
27.5°	1394.6	1343.1	1232.8	1161.9	1127.0
30°	1344.7	1287.2	1166.3	1089.3	1048.5
32.5°	1296.4	1226.8	1103.0	1012.3	974.4
35°	1242.0	1164.9	1032.0	936.8	903.4
37.5°	1189.1	1105.9	965.4	861.1	823.4
40°	1133.2	1042.6	896.0	788.7	749.4
42.5°	1075.7	979.1	826.5	714.6	676.9
45°	1015.3	914.0	755.5	648.1	611.9
47.5°	958.0	850.7	687.5	580.2	546.9
50°	894.4	787.2	621.0	516.6	485.0
52.5°	832.4	719.1	557.5	457.8	429.1
55°	772.0	654.2	491.0	400.4	371.7
57.5°	710.1	589.3	432.1	347.5	323.4
60°	646.6	525.7	370.1	293.2	269.0
62.5°	584.8	463.9	317.2	244.8	232.8
65°	521.3	398.8	262.9	211.6	206.9
67.5°	460.9	338.4	211.6	185.8	181.3
70°	397.4	279.5	175.2	160.2	154.0
72.5°	337.0	225.1	146.5	134.5	131.5
75°	277.9	172.2	120.9	110.3	108.9
77.5°	219.1	122.3	95.2	89.2	86.0
80°	164.6	87.7	72.4	66.6	66.6
82.5°	114.8	59.0	49.9	46.8	46.8
85°	64.9	33.2	28.7	28.7	28.7
87.5°	24.2	12.0	12.0	10.6	10.6
90°	1.4	17.8	29.5	37.1	39.9
92.5°	37.1	31.1	35.4	38.5	39.9
95°	96.1	47.3	57.7	65.2	63.6
97.5°	173.1	51.8	75.3	80.0	81.4
100°	262.0	59.2	84.3	96.1	99.1
102.5°	359.5	356.7	87.4	103.5	108.1
105°	449.8	494.2	90.3	106.4	112.5
107.5°	554.9	591.8	93.3	109.5	115.4
110°	655.6	686.5	259.0	111.1	116.8

TEST NUMBER: P907933

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	750.2	776.8	751.6	113.8	118.5
115°	850.8	876.0	913.0	227.9	121.4
117.5°	938.1	967.7	992.9	781.2	393.5
120°	1035.8	1057.9	1084.7	1102.4	902.6
122.5°	1118.5	1142.3	1171.9	1180.7	1182.4
125°	1203.0	1222.2	1250.3	1260.7	1265.1
127.5°	1279.9	1300.6	1322.9	1337.7	1339.1
130°	1352.4	1376.1	1392.3	1408.7	1407.2
132.5°	1426.4	1445.7	1461.9	1475.2	1473.8
135°	1488.6	1512.4	1525.5	1540.4	1537.4
137.5°	1553.6	1571.4	1586.3	1601.0	1596.7
140°	1617.2	1629.2	1645.4	1658.7	1651.3
142.5°	1670.6	1681.0	1700.2	1711.9	1704.6
145°	1726.9	1725.3	1750.4	1760.8	1753.4
147.5°	1775.5	1771.1	1796.2	1803.6	1797.9
150°	1823.0	1812.6	1836.3	1845.1	1837.8
152.5°	1862.9	1851.1	1873.2	1882.2	1871.8
155°	1901.4	1888.1	1905.9	1914.7	1902.9
157.5°	1932.5	1920.7	1934.0	1944.4	1932.5
160°	1959.1	1950.2	1959.1	1967.9	1957.6
162.5°	1982.7	1973.9	1981.3	1991.7	1978.3
165°	2003.5	1994.7	1999.0	2009.4	1999.0
167.5°	2019.7	2010.8	2015.4	2025.8	2012.4
170°	2033.2	2024.2	2027.2	2037.5	2024.2
172.5°	2041.9	2033.2	2036.1	2046.5	2033.2
175°	2049.3	2038.9	2041.9	2052.2	2037.5
177.5°	2052.2	2041.9	2043.5	2053.9	2040.5
180°	2044.9	2044.9	2044.9	2044.9	2044.9

TEST NUMBER: P907933

CATALOG NUMBER: DFN2DIP-HX2F0-040D060US840-RLONL

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	10.35	11.08	11.43	12.15	13.61	6.34	7.07	7.41	8.14	9.59
	3H	12.00	12.65	13.08	13.73	15.20	7.50	8.15	8.58	9.23	10.70
	4H	12.59	13.20	13.68	14.28	15.76	7.93	8.55	9.03	9.63	11.11
	6H	12.98	13.55	14.08	14.63	16.12	8.24	8.81	9.34	9.89	11.38
	8H	13.09	13.64	14.20	14.73	16.22	8.32	8.86	9.42	9.96	11.44
	12H	13.14	13.66	14.25	14.75	16.26	8.35	8.86	9.46	9.95	11.46
4H	2H	10.36	10.97	11.45	12.05	13.53	6.90	7.52	8.00	8.60	10.08
	3H	12.15	12.66	13.25	13.77	15.26	8.23	8.74	9.33	9.85	11.34
	4H	12.82	13.29	13.92	14.38	15.90	8.76	9.23	9.87	10.32	11.84
	6H	13.30	13.71	14.42	14.83	16.33	9.15	9.56	10.27	10.68	12.18
	8H	13.46	13.84	14.58	14.95	16.47	9.27	9.65	10.39	10.76	12.28
	12H	13.54	13.88	14.67	15.00	16.53	9.32	9.66	10.45	10.79	12.31
8H	4H	12.77	13.15	13.89	14.26	15.78	9.01	9.39	10.13	10.50	12.02
	6H	13.31	13.62	14.44	14.77	16.29	9.51	9.82	10.64	10.97	12.49
	8H	13.51	13.78	14.65	14.91	16.45	9.68	9.96	10.83	11.09	12.63
	12H	13.62	13.86	14.77	14.99	16.57	9.78	10.02	10.93	11.15	12.73
12H	4H	12.72	13.06	13.85	14.18	15.71	9.01	9.35	10.14	10.48	12.00
	6H	13.28	13.55	14.42	14.69	16.23	9.55	9.82	10.69	10.95	12.49
	8H	13.48	13.72	14.63	14.85	16.42	9.74	9.98	10.89	11.11	12.68

END OF REPORT