

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: P927742

Luminaire Tested: DFN2DIP-HX4F0-100D050US840-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927742
REPORT IS A COMBINATION OF REPORTS P900850 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D050US840-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

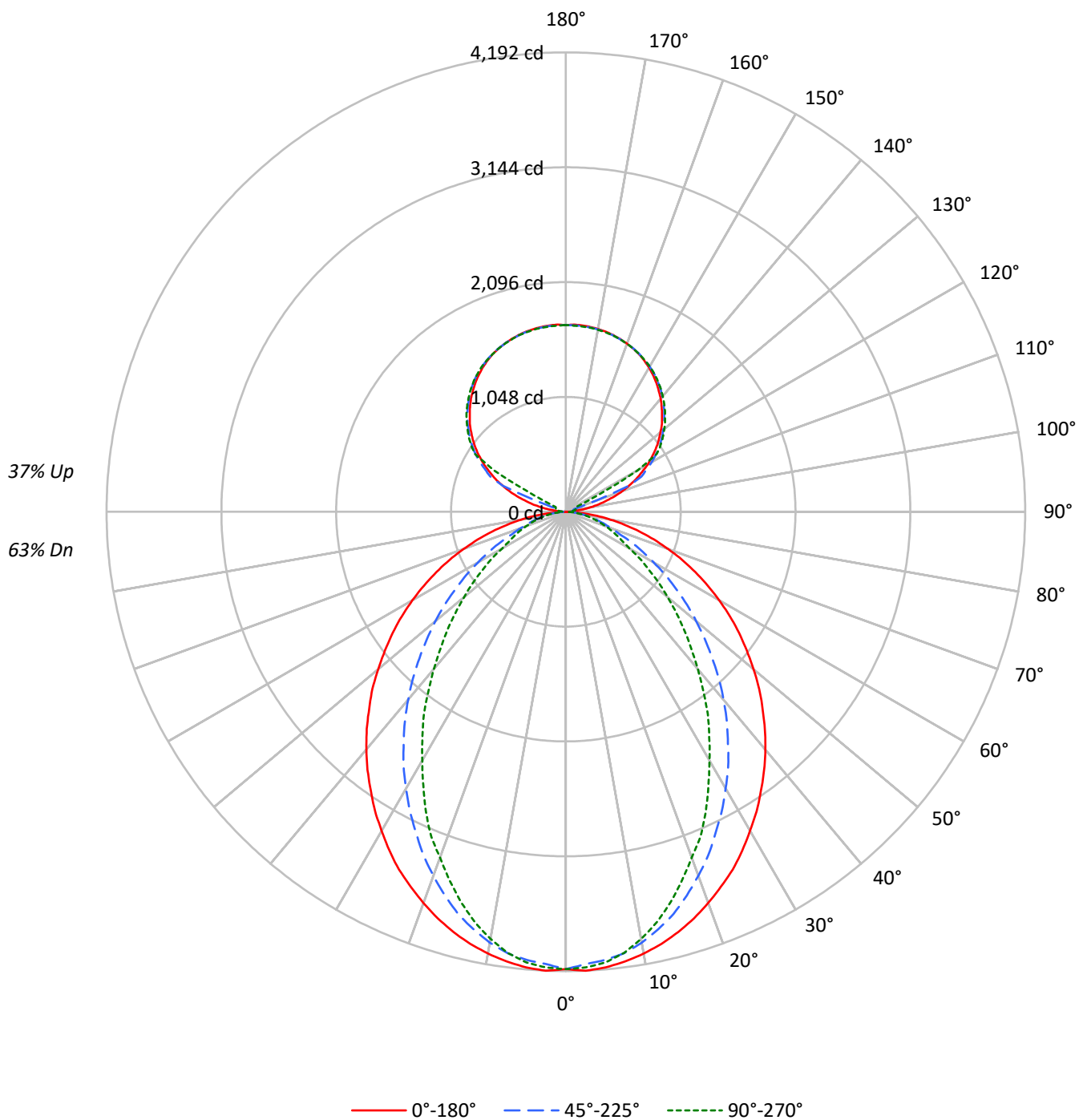
Lumens per Lamp: N/A
Luminaire Lumens: 13581.8 lumens
Efficiency: N/A
Efficacy: 99.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 137
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P927742

CATALOG NUMBER: DFN2DIP-HX4F0-100D050US840-RLLONL

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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3103	3103	3103
5°	3108	3054	3074
10°	3078	2995	2974
15°	3036	2896	2819
20°	2980	2760	2630
25°	2923	2607	2447
30°	2846	2451	2214
35°	2771	2282	2010
40°	2694	2108	1776
45°	2605	1915	1564
50°	2513	1719	1357
55°	2417	1511	1158
60°	2306	1293	953
65°	2178	1071	858
70°	2023	864	777
75°	1829	762	707
80°	1547	641	614
85°	1082	429	462

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2605 cd/sqm

TEST NUMBER: P927742

CATALOG NUMBER: DFN2DIP-HX4F0-100D050US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	391.1	2.9
10°-20°	1073.8	7.9
20°-30°	1507.5	11.1
30°-40°	1643.3	12.1
40°-50°	1510.4	11.1
50°-60°	1186.2	8.7
60°-70°	772.1	5.7
70°-80°	397.4	2.9
80°-90°	104.5	0.8
90°-100°	56.2	0.4
100°-110°	209.5	1.5
110°-120°	555.5	4.1
120°-130°	921.4	6.8
130°-140°	978.7	7.2
140°-150°	909.6	6.7
150°-160°	731.3	5.4
160°-170°	471.2	3.5
170°-180°	162.2	1.2
0°-30°	2972.4	21.9
0°-40°	4615.8	34.0
0°-60°	7312.3	53.8
0°-90°	8586.3	63.2
90°-120°	821.2	6.0
90°-150°	3630.8	26.7
90°-180°	4996.0	36.8
0°-180°	13581.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4174	4174	4174	4174	4174	
5°	4174	4155	4105	4140	4128	396
15°	3970	3928	3800	3728	3690	1119
25°	3603	3482	3233	3078	3021	1657
35°	3105	2912	2580	2342	2258	1943
45°	2538	2285	1889	1620	1530	1960
55°	1930	1635	1227	1001	929	1724
65°	1303	997	657	529	517	1292
75°	695	430	302	276	272	735
85°	162	83	72	72	72	186
90°	1	15	25	31	33	13
95°	80	39	48	54	53	95
105°	375	412	75	89	94	401
115°	709	730	761	190	101	698
125°	1002	1018	1042	1050	1054	894
135°	1240	1260	1271	1284	1281	958
145°	1439	1438	1459	1467	1461	900
155°	1584	1573	1588	1596	1586	730
165°	1669	1662	1666	1674	1666	472
175°	1708	1699	1702	1710	1698	163
180°	1704	1704	1704	1704	1704	

TEST NUMBER: P927742

CATALOG NUMBER: DFN2DIP-HX4F0-100D050US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4173.5	4173.5	4173.5	4173.5	4173.5
2.5°	4192.3	4173.5	4131.8	4169.9	4162.3
5°	4173.5	4154.6	4105.3	4139.5	4128.2
7.5°	4139.5	4117.0	4064.0	4078.9	4060.1
10°	4094.1	4067.7	3992.3	3980.7	3958.3
12.5°	4037.7	4003.6	3901.4	3878.9	3837.2
15°	3969.5	3927.8	3799.6	3727.9	3690.2
17.5°	3890.2	3829.7	3671.0	3588.0	3527.5
20°	3799.6	3723.8	3535.1	3441.0	3357.6
22.5°	3701.4	3614.5	3395.3	3267.1	3210.6
25°	3603.3	3482.3	3233.0	3078.3	3021.4
27.5°	3486.2	3357.6	3081.9	2904.4	2817.4
30°	3361.6	3217.7	2915.6	2723.3	2621.1
32.5°	3240.7	3066.7	2757.4	2530.6	2435.9
35°	3104.7	2912.1	2579.8	2341.8	2258.4
37.5°	2972.5	2764.5	2413.5	2152.7	2058.5
40°	2832.7	2606.3	2239.6	1971.5	1873.4
42.5°	2689.2	2447.6	2066.2	1786.4	1692.2
45°	2538.1	2284.9	1888.6	1620.1	1529.5
47.5°	2394.7	2126.6	1718.7	1450.2	1367.3
50°	2236.0	1967.9	1552.4	1291.5	1212.6
52.5°	2080.9	1797.6	1393.7	1144.4	1072.7
55°	1929.8	1635.4	1227.4	1001.0	929.2
57.5°	1775.2	1473.0	1080.4	868.7	808.2
60°	1616.5	1314.4	925.3	732.9	672.4
62.5°	1461.8	1159.7	793.0	611.9	581.8
65°	1303.1	997.0	657.2	528.9	517.3
67.5°	1152.1	845.9	528.9	464.4	453.2
70°	993.3	698.9	438.0	400.3	385.1
72.5°	842.3	562.6	366.3	336.2	328.6
75°	694.8	430.4	302.1	275.7	272.0
77.5°	547.8	305.8	238.0	222.8	215.2
80°	411.5	219.2	181.2	166.3	166.3
82.5°	286.9	147.4	124.6	117.0	117.0
85°	162.3	82.9	71.7	71.7	71.7
87.5°	60.5	30.1	30.1	26.5	26.5
90°	1.2	14.7	24.6	30.9	33.2
92.5°	30.9	26.0	29.6	32.1	33.2
95°	80.1	39.4	48.1	54.3	53.0
97.5°	144.2	43.2	62.8	66.6	67.8
100°	218.3	49.4	70.3	80.1	82.6
102.5°	299.6	297.2	72.8	86.2	90.1
105°	374.8	411.9	75.2	88.8	93.7
107.5°	462.4	493.1	77.8	91.2	96.2
110°	546.3	572.1	215.8	92.5	97.3

TEST NUMBER: P927742

CATALOG NUMBER: DFN2DIP-HX4F0-100D050US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	625.2	647.3	626.4	94.9	98.7
115°	709.0	729.9	760.8	189.9	101.2
117.5°	781.7	806.3	827.4	650.9	328.0
120°	863.1	881.6	903.8	918.6	752.1
122.5°	932.0	951.8	976.6	983.9	985.3
125°	1002.3	1018.5	1041.9	1050.5	1054.2
127.5°	1066.4	1083.7	1102.4	1114.6	1115.8
130°	1126.9	1146.7	1160.2	1173.8	1172.7
132.5°	1188.6	1204.7	1218.1	1229.3	1228.1
135°	1240.4	1260.2	1271.1	1283.7	1281.1
137.5°	1294.6	1309.4	1321.8	1334.1	1330.5
140°	1347.6	1357.6	1371.0	1382.1	1376.1
142.5°	1392.1	1400.8	1416.7	1426.5	1420.4
145°	1439.0	1437.7	1458.6	1467.2	1461.1
147.5°	1479.6	1475.8	1496.8	1503.0	1498.1
150°	1519.0	1510.5	1530.1	1537.5	1531.4
152.5°	1552.3	1542.5	1560.9	1568.4	1559.7
155°	1584.4	1573.4	1588.1	1595.5	1585.7
157.5°	1610.2	1600.4	1611.5	1620.2	1610.2
160°	1632.5	1625.1	1632.5	1639.8	1631.2
162.5°	1652.1	1644.9	1650.9	1659.6	1648.5
165°	1669.4	1662.1	1665.8	1674.3	1665.8
167.5°	1683.0	1675.6	1679.4	1688.0	1676.9
170°	1694.1	1686.7	1689.2	1697.8	1686.7
172.5°	1701.5	1694.1	1696.7	1705.2	1694.1
175°	1707.7	1699.0	1701.5	1710.1	1697.8
177.5°	1710.1	1701.5	1702.8	1711.4	1700.3
180°	1703.9	1703.9	1703.9	1703.9	1703.9

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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	12.23	13.19	13.08	14.04	15.12	8.21	9.16	9.05	10.02	11.09
	3H	13.92	14.77	14.78	15.64	16.74	9.41	10.26	10.26	11.13	12.23
	4H	14.54	15.34	15.41	16.21	17.32	9.86	10.67	10.74	11.54	12.65
	6H	14.97	15.70	15.85	16.59	17.71	10.19	10.93	11.08	11.81	12.94
	8H	15.10	15.80	15.99	16.70	17.82	10.29	10.99	11.18	11.89	13.01
	12H	15.16	15.83	16.06	16.72	17.87	10.34	11.01	11.23	11.90	13.05
4H	2H	12.27	13.07	13.14	13.95	15.06	8.82	9.62	9.69	10.50	11.61
	3H	14.11	14.78	15.00	15.68	16.81	10.18	10.85	11.07	11.76	12.88
	4H	14.81	15.41	15.71	16.32	17.47	10.74	11.34	11.63	12.25	13.40
	6H	15.33	15.85	16.24	16.78	17.93	11.16	11.69	12.08	12.61	13.77
	8H	15.51	16.00	16.42	16.92	18.08	11.30	11.78	12.21	12.71	13.87
	12H	15.61	16.05	16.54	16.99	18.16	11.37	11.81	12.30	12.75	13.92
8H	4H	14.78	15.27	15.70	16.19	17.36	11.03	11.51	11.94	12.43	13.60
	6H	15.36	15.76	16.30	16.72	17.89	11.55	11.95	12.49	12.92	14.08
	8H	15.57	15.93	16.53	16.89	18.07	11.74	12.10	12.70	13.06	14.24
	12H	15.72	16.03	16.67	16.98	18.21	11.87	12.18	12.82	13.13	14.36
12H	4H	14.74	15.18	15.68	16.12	17.29	11.04	11.47	11.97	12.42	13.59
	6H	15.33	15.69	16.28	16.64	17.83	11.60	11.96	12.55	12.91	14.10
	8H	15.56	15.87	16.51	16.82	18.05	11.82	12.13	12.77	13.08	14.31