

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: P927538

Luminaire Tested: DFN2DIP-HX4F0-040D080US840-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927538
REPORT IS A COMBINATION OF REPORTS P900892 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D080US840-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

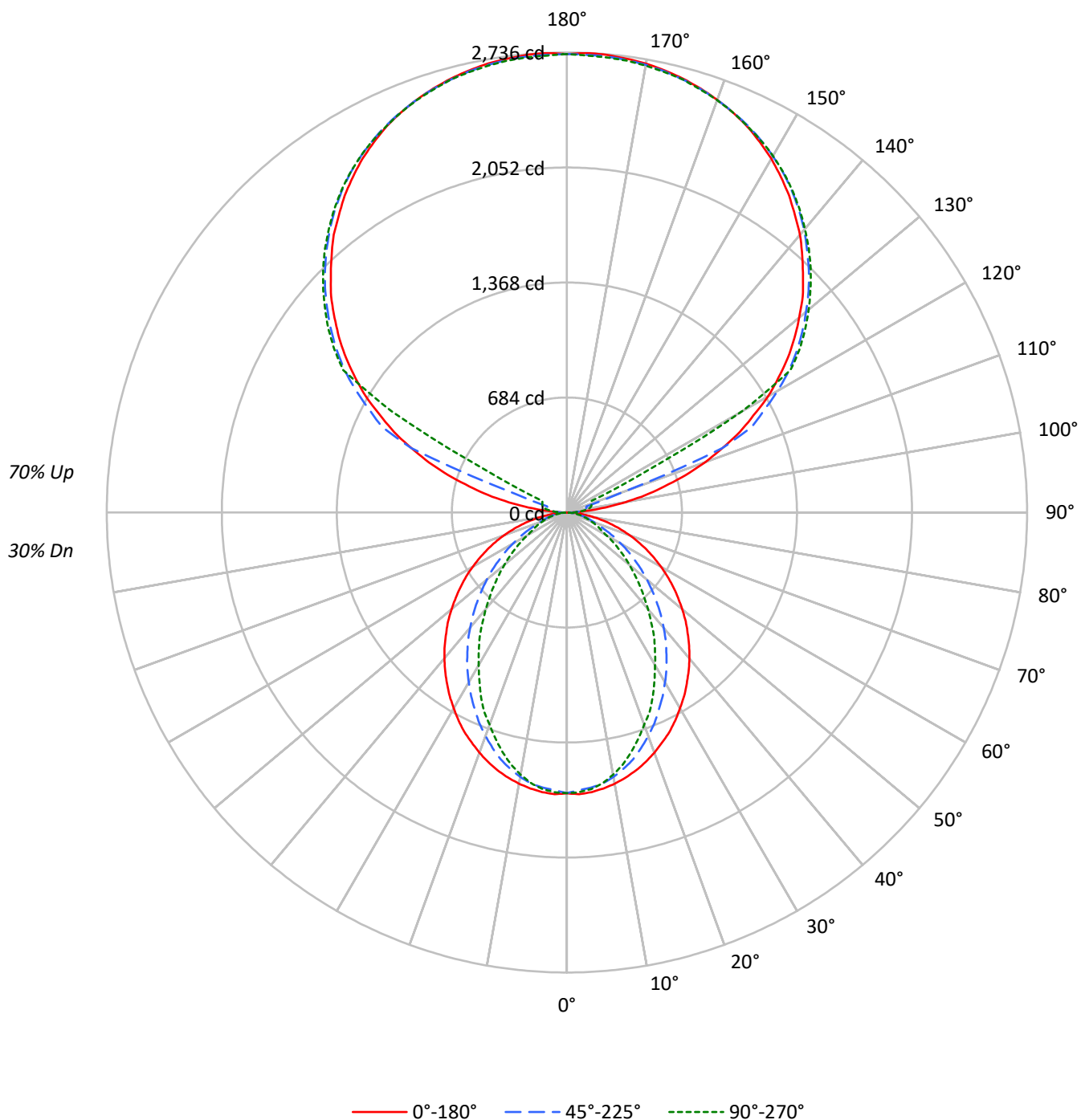
Lumens per Lamp: N/A
Luminaire Lumens: 11431.0 lumens
Efficiency: N/A
Efficacy: 124.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 91.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P927538

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US840-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P927538

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US840-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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1241	1241	1241
5°	1243	1222	1229
10°	1231	1198	1190
15°	1214	1158	1128
20°	1192	1104	1052
25°	1169	1043	979
30°	1138	980	886
35°	1108	913	804
40°	1078	843	711
45°	1042	766	626
50°	1005	688	543
55°	967	604	463
60°	922	517	381
65°	871	428	343
70°	810	346	311
75°	732	305	283
80°	619	256	245
85°	433	172	185

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1401 cd/sqm

TEST NUMBER: P927538

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	1.4
10°-20°	429.5	3.8
20°-30°	603.0	5.3
30°-40°	657.3	5.8
40°-50°	604.2	5.3
50°-60°	474.5	4.2
60°-70°	308.9	2.7
70°-80°	159.0	1.4
80°-90°	45.4	0.4
90°-100°	89.9	0.8
100°-110°	335.1	2.9
110°-120°	888.8	7.8
120°-130°	1474.2	12.9
130°-140°	1565.9	13.7
140°-150°	1455.3	12.7
150°-160°	1170.1	10.2
160°-170°	754.0	6.6
170°-180°	259.5	2.3
0°-30°	1189.0	10.4
0°-40°	1846.3	16.2
0°-60°	2924.9	25.6
0°-90°	3438.1	30.1
90°-120°	1313.9	11.5
90°-150°	5809.3	50.8
90°-180°	7993.0	69.9
0°-180°	11431.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1669	1669	1669	1669	1669	
5°	1669	1662	1642	1656	1651	158
15°	1588	1571	1520	1491	1476	447
25°	1441	1393	1293	1231	1208	663
35°	1242	1165	1032	937	903	777
45°	1015	914	755	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°	2	24	39	49	53	11
95°	128	63	77	87	85	152
105°	600	659	120	142	150	641
115°	1134	1168	1217	304	162	1117
125°	1604	1630	1667	1681	1687	1430
135°	1985	2016	2034	2054	2050	1533
145°	2302	2300	2334	2348	2338	1440
155°	2535	2517	2541	2553	2537	1168
165°	2671	2659	2665	2679	2665	755
175°	2732	2718	2722	2736	2717	260
180°	2726	2726	2726	2726	2726	

TEST NUMBER: P927538

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1669.4	1669.4	1669.4	1669.4	1669.4
2.5°	1677.0	1669.4	1652.7	1668.0	1664.9
5°	1669.4	1661.8	1642.1	1655.8	1651.3
7.5°	1655.8	1646.8	1625.7	1631.5	1624.1
10°	1637.7	1627.1	1596.9	1592.3	1583.4
12.5°	1615.1	1601.4	1560.5	1551.6	1534.9
15°	1587.8	1571.1	1519.8	1491.2	1476.1
17.5°	1556.1	1531.9	1468.4	1435.2	1411.0
20°	1519.8	1489.6	1414.0	1376.4	1343.0
22.5°	1480.6	1445.8	1358.1	1306.8	1284.3
25°	1441.3	1392.9	1293.1	1231.4	1208.5
27.5°	1394.5	1343.0	1232.8	1161.8	1126.9
30°	1344.6	1287.1	1166.2	1089.3	1048.5
32.5°	1296.3	1226.7	1102.9	1012.2	974.4
35°	1242.0	1164.8	1031.9	936.7	903.4
37.5°	1189.0	1105.8	965.4	861.1	823.4
40°	1133.1	1042.5	895.9	788.7	749.4
42.5°	1075.6	979.0	826.4	714.5	676.9
45°	1015.3	914.0	755.4	648.1	611.8
47.5°	957.9	850.7	687.5	580.1	546.9
50°	894.4	787.1	620.9	516.6	485.0
52.5°	832.4	719.1	557.5	457.7	429.1
55°	772.0	654.1	491.0	400.4	371.7
57.5°	710.1	589.2	432.1	347.5	323.3
60°	646.6	525.7	370.1	293.1	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	66.5	66.5
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°	1.9	23.6	39.4	49.4	53.2
92.5°	49.4	41.5	47.4	51.3	53.2
95°	128.1	63.0	76.8	86.9	84.8
97.5°	230.7	69.1	100.5	106.6	108.5
100°	349.3	79.0	112.5	128.1	132.1
102.5°	479.4	475.5	116.4	137.9	144.1
105°	599.7	659.0	120.4	142.0	150.0
107.5°	739.8	789.0	124.4	145.9	153.9
110°	874.1	915.3	345.4	148.0	155.8

TEST NUMBER: P927538

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1000.3	1035.7	1002.2	151.8	157.9
115°	1134.3	1167.8	1217.2	303.8	161.9
117.5°	1250.7	1290.1	1323.8	1041.5	524.8
120°	1381.0	1410.5	1446.1	1469.8	1203.4
122.5°	1491.3	1523.0	1562.6	1574.3	1576.4
125°	1603.8	1629.5	1667.0	1680.8	1686.7
127.5°	1706.4	1734.0	1763.8	1783.4	1785.3
130°	1803.1	1834.7	1856.3	1878.1	1876.2
132.5°	1901.8	1927.5	1949.1	1966.9	1965.0
135°	1984.7	2016.3	2033.8	2053.8	2049.8
137.5°	2071.4	2095.0	2114.9	2134.6	2128.8
140°	2156.1	2172.1	2193.7	2211.5	2201.6
142.5°	2227.4	2241.2	2266.7	2282.5	2272.6
145°	2302.3	2300.2	2333.7	2347.6	2337.7
147.5°	2367.3	2361.4	2394.8	2404.7	2397.0
150°	2430.5	2416.7	2448.3	2460.0	2450.2
152.5°	2483.7	2468.0	2497.4	2509.5	2495.6
155°	2535.0	2517.4	2541.1	2552.8	2537.1
157.5°	2576.4	2560.8	2578.5	2592.4	2576.4
160°	2612.0	2600.1	2612.0	2623.8	2609.9
162.5°	2643.5	2631.7	2641.5	2655.4	2637.6
165°	2671.1	2659.4	2665.3	2679.0	2665.3
167.5°	2692.8	2680.9	2687.0	2700.8	2683.0
170°	2710.7	2698.7	2702.7	2716.6	2698.7
172.5°	2722.4	2710.7	2714.6	2728.5	2710.7
175°	2732.2	2718.4	2722.4	2736.2	2716.6
177.5°	2736.2	2722.4	2724.4	2738.3	2720.5
180°	2726.4	2726.4	2726.4	2726.4	2726.4

TEST NUMBER: P927538

CATALOG NUMBER: DFN2DIP-HX4F0-040D080US840-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	5.68	6.37	6.79	7.47	9.01	1.65	2.34	2.77	3.45	4.98
	3H	7.35	7.96	8.47	9.08	10.63	2.83	3.45	3.95	4.56	6.11
	4H	7.95	8.53	9.08	9.65	11.20	3.28	3.86	4.41	4.98	6.53
	6H	8.36	8.90	9.51	10.02	11.59	3.59	4.13	4.73	5.25	6.81
	8H	8.49	9.00	9.63	10.13	11.69	3.68	4.19	4.82	5.32	6.88
	12H	8.54	9.03	9.69	10.16	11.74	3.72	4.20	4.87	5.33	6.91
4H	2H	5.68	6.26	6.82	7.38	8.93	2.23	2.82	3.37	3.93	5.49
	3H	7.50	7.98	8.64	9.13	10.69	3.57	4.06	4.72	5.20	6.76
	4H	8.18	8.63	9.33	9.76	11.35	4.11	4.56	5.26	5.69	7.28
	6H	8.69	9.08	9.85	10.23	11.81	4.53	4.91	5.68	6.06	7.64
	8H	8.87	9.22	10.02	10.37	11.96	4.65	5.01	5.81	6.16	7.75
	12H	8.95	9.28	10.13	10.44	12.03	4.71	5.04	5.88	6.19	7.79
8H	4H	8.14	8.50	9.30	9.65	11.24	4.38	4.74	5.54	5.89	7.48
	6H	8.70	9.00	9.88	10.19	11.78	4.90	5.19	6.07	6.38	7.97
	8H	8.92	9.18	10.10	10.34	11.95	5.09	5.35	6.27	6.51	8.12
	12H	9.05	9.28	10.24	10.44	12.09	5.21	5.43	6.39	6.60	8.24
12H	4H	8.09	8.41	9.26	9.57	11.17	4.38	4.71	5.55	5.86	7.46
	6H	8.68	8.94	9.86	10.10	11.71	4.95	5.21	6.13	6.37	7.98
	8H	8.89	9.12	10.08	10.28	11.93	5.15	5.38	6.34	6.54	8.19

END OF REPORT