

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: P908259

Luminaire Tested: DFN2DIP-HX4F0-100D080US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908259
REPORT IS A COMBINATION OF REPORTS P899384 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D080US840-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

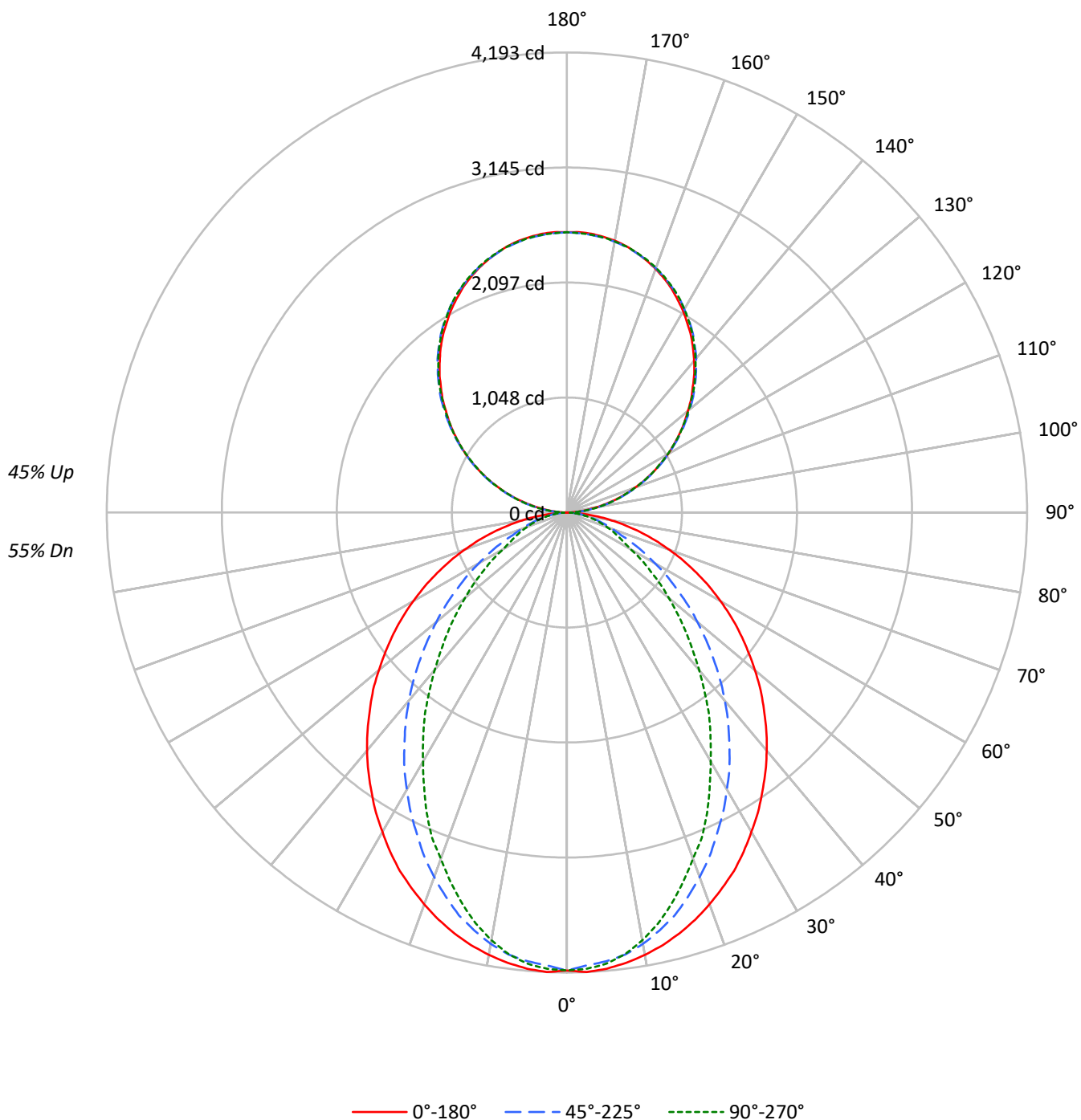
Lumens per Lamp: N/A
Luminaire Lumens: 15733.7 lumens
Efficiency: N/A
Efficacy: 108.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 144.7
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: P908259

CATALOG NUMBER: DFN2DIP-HX4F0-100D080US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P908259

CATALOG NUMBER: DFN2DIP-HX4F0-100D080US840-RLLFLL

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	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39
4	76	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34
5	70	59	51	45	65	55	48	43	48	43	38	42	37	34	35	32	30
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	25	22	19
10	49	37	30	25	46	35	28	24	31	26	22	27	23	20	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3103	3103	3103
5°	3109	3054	3074
10°	3078	2995	2974
15°	3036	2896	2820
20°	2980	2760	2630
25°	2923	2607	2447
30°	2846	2451	2215
35°	2771	2282	2010
40°	2694	2108	1776
45°	2605	1915	1564
50°	2513	1720	1357
55°	2418	1511	1158
60°	2306	1293	953
65°	2179	1071	858
70°	2024	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: P908259

CATALOG NUMBER: DFN2DIP-HX4F0-100D080US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	391.2	2.5
10°-20°	1073.8	6.8
20°-30°	1507.6	9.6
30°-40°	1643.4	10.4
40°-50°	1510.5	9.6
50°-60°	1186.3	7.5
60°-70°	772.1	4.9
70°-80°	397.5	2.5
80°-90°	108.7	0.7
90°-100°	158.1	1.0
100°-110°	502.4	3.2
110°-120°	859.7	5.5
120°-130°	1130.6	7.2
130°-140°	1269.1	8.1
140°-150°	1244.5	7.9
150°-160°	1043.9	6.6
160°-170°	692.3	4.4
170°-180°	242.0	1.5
0°-30°	2972.6	18.9
0°-40°	4616.1	29.3
0°-60°	7312.8	46.5
0°-90°	8591.1	54.6
90°-120°	1520.1	9.7
90°-150°	5164.3	32.8
90°-180°	7143.0	45.4
0°-180°	15733.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4174	4174	4174	4174	4174	
5°	4174	4155	4106	4140	4128	396
15°	3970	3928	3800	3728	3690	1119
25°	3604	3482	3233	3078	3022	1657
35°	3105	2912	2580	2342	2259	1943
45°	2538	2285	1889	1620	1530	1960
55°	1930	1636	1228	1001	929	1725
65°	1303	997	657	529	517	1292
75°	695	430	302	276	272	735
85°	162	83	72	72	72	186
90°	2	28	76	71	73	15
95°	112	134	138	138	134	125
105°	464	470	474	478	478	489
115°	863	875	871	869	863	853
125°	1255	1274	1268	1261	1259	1121
135°	1623	1647	1652	1649	1643	1254
145°	1970	1986	1998	2000	1992	1231
155°	2253	2259	2266	2277	2270	1037
165°	2451	2449	2449	2464	2453	691
175°	2550	2544	2540	2555	2542	242
180°	2555	2555	2555	2555	2555	

TEST NUMBER: P908259

CATALOG NUMBER: DFN2DIP-HX4F0-100D080US840-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4173.8	4173.8	4173.8	4173.8	4173.8
2.5°	4192.6	4173.8	4132.1	4170.1	4162.6
5°	4173.8	4154.9	4105.6	4139.7	4128.4
7.5°	4139.7	4117.2	4064.3	4079.1	4060.4
10°	4094.4	4067.9	3992.6	3981.0	3958.6
12.5°	4037.9	4003.8	3901.6	3879.2	3837.5
15°	3969.8	3928.1	3799.8	3728.1	3690.5
17.5°	3890.4	3829.9	3671.3	3588.3	3527.8
20°	3799.8	3724.1	3535.3	3441.2	3357.8
22.5°	3701.7	3614.7	3395.5	3267.3	3210.8
25°	3603.5	3482.5	3233.2	3078.5	3021.6
27.5°	3486.5	3357.8	3082.1	2904.6	2817.6
30°	3361.8	3217.9	2915.8	2723.5	2621.3
32.5°	3240.9	3066.9	2757.5	2530.7	2436.1
35°	3104.9	2912.3	2580.0	2342.0	2258.6
37.5°	2972.7	2764.7	2413.7	2152.8	2058.6
40°	2832.9	2606.5	2239.8	1971.7	1873.5
42.5°	2689.4	2447.7	2066.3	1786.6	1692.3
45°	2538.3	2285.0	1888.8	1620.2	1529.6
47.5°	2394.9	2126.8	1718.8	1450.3	1367.4
50°	2236.1	1968.0	1552.5	1291.6	1212.6
52.5°	2081.0	1797.8	1393.8	1144.5	1072.8
55°	1930.0	1635.5	1227.5	1001.1	929.3
57.5°	1775.3	1473.1	1080.5	868.8	808.3
60°	1616.6	1314.4	925.3	733.0	672.5
62.5°	1461.9	1159.7	793.0	612.0	581.9
65°	1303.2	997.0	657.2	529.0	517.4
67.5°	1152.2	846.0	529.0	464.4	453.2
70°	993.4	698.9	438.0	400.3	385.2
72.5°	842.3	562.6	366.3	336.2	328.6
75°	694.9	430.4	302.2	275.7	272.1
77.5°	547.9	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°	2.3	27.8	75.5	70.9	73.2
92.5°	47.8	64.7	67.1	69.3	69.3
95°	112.5	134.0	137.8	137.8	134.0
97.5°	187.2	207.2	215.7	215.7	215.7
100°	273.5	291.1	297.3	297.3	295.0
102.5°	364.4	377.5	385.9	388.2	385.9
105°	463.7	469.9	474.5	478.4	478.4
107.5°	562.3	571.6	571.6	573.1	562.3
110°	657.8	670.1	670.1	670.1	664.0



TEST NUMBER: P908259

CATALOG NUMBER: DFN2DIP-HX4F0-100D080US840-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	761.0	774.2	771.8	765.7	761.0
115°	862.7	875.0	871.2	868.9	862.7
117.5°	963.6	980.6	969.8	963.6	957.5
120°	1065.3	1082.3	1065.3	1065.3	1058.3
122.5°	1157.7	1179.3	1168.5	1162.4	1157.7
125°	1254.8	1274.0	1267.9	1260.9	1258.7
127.5°	1349.6	1373.4	1364.9	1355.7	1349.6
130°	1438.1	1465.8	1462.0	1457.4	1449.0
132.5°	1537.5	1559.0	1560.6	1549.8	1543.7
135°	1623.0	1646.9	1651.5	1649.2	1643.1
137.5°	1718.5	1737.8	1741.6	1740.1	1730.8
140°	1802.5	1821.7	1832.5	1832.5	1824.0
142.5°	1888.8	1908.0	1914.2	1916.5	1908.0
145°	1970.4	1985.8	1998.1	2000.4	1992.0
147.5°	2043.6	2062.9	2072.0	2076.0	2067.5
150°	2119.1	2132.1	2140.6	2147.6	2140.6
152.5°	2186.1	2199.2	2210.0	2218.5	2210.0
155°	2253.1	2259.3	2266.2	2276.9	2270.1
157.5°	2310.9	2315.5	2319.4	2334.7	2324.0
160°	2362.5	2367.1	2369.4	2382.5	2373.3
162.5°	2410.2	2410.2	2412.6	2427.2	2416.4
165°	2451.0	2448.7	2448.7	2464.2	2453.4
167.5°	2488.0	2481.1	2481.1	2496.5	2485.7
170°	2515.8	2509.6	2507.3	2522.7	2509.6
172.5°	2535.1	2528.9	2526.6	2541.9	2528.9
175°	2550.4	2544.3	2539.6	2555.1	2541.9
177.5°	2558.9	2552.7	2548.1	2561.2	2548.1
180°	2555.1	2555.1	2555.1	2555.1	2555.1

TEST NUMBER: P908259

CATALOG NUMBER: DFN2DIP-HX4F0-100D080US840-RLFL

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	11.50	12.37	12.42	13.31	14.51	7.47	8.34	8.40	9.28	10.49
	3H	13.18	13.96	14.12	14.91	16.14	8.67	9.44	9.60	10.39	11.62
	4H	13.79	14.53	14.74	15.48	16.72	9.12	9.86	10.07	10.81	12.05
	6H	14.22	14.89	15.18	15.85	17.10	9.45	10.12	10.41	11.08	12.33
	8H	14.35	14.99	15.31	15.96	17.21	9.54	10.18	10.51	11.15	12.40
	12H	14.41	15.02	15.38	15.99	17.26	9.58	10.20	10.56	11.16	12.44
4H	2H	11.52	12.26	12.48	13.21	14.45	8.07	8.81	9.03	9.76	11.00
	3H	13.36	13.97	14.32	14.95	16.20	9.43	10.04	10.40	11.02	12.28
	4H	14.05	14.61	15.03	15.58	16.86	9.98	10.54	10.96	11.51	12.79
	6H	14.57	15.05	15.56	16.05	17.33	10.40	10.88	11.39	11.88	13.16
	8H	14.75	15.19	15.74	16.19	17.48	10.54	10.98	11.52	11.97	13.27
	12H	14.85	15.25	15.85	16.26	17.55	10.60	11.01	11.61	12.01	13.31
8H	4H	14.02	14.47	15.01	15.46	16.75	10.27	10.71	11.25	11.70	13.00
	6H	14.59	14.96	15.61	16.00	17.28	10.79	11.16	11.80	12.19	13.48
	8H	14.81	15.14	15.83	16.16	17.46	10.98	11.31	12.00	12.33	13.63
	12H	14.95	15.24	15.98	16.25	17.61	11.10	11.39	12.13	12.40	13.76
12H	4H	13.98	14.38	14.98	15.39	16.69	10.27	10.67	11.28	11.68	12.98
	6H	14.57	14.89	15.59	15.92	17.22	10.84	11.16	11.86	12.18	13.49
	8H	14.79	15.08	15.82	16.09	17.45	11.05	11.34	12.07	12.35	13.71

END OF REPORT