

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: P929382

Luminaire Tested: DFN2DIP-HX4F0-100D100US940-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P929382
REPORT IS A COMBINATION OF REPORTS P900940 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D100US940-RLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

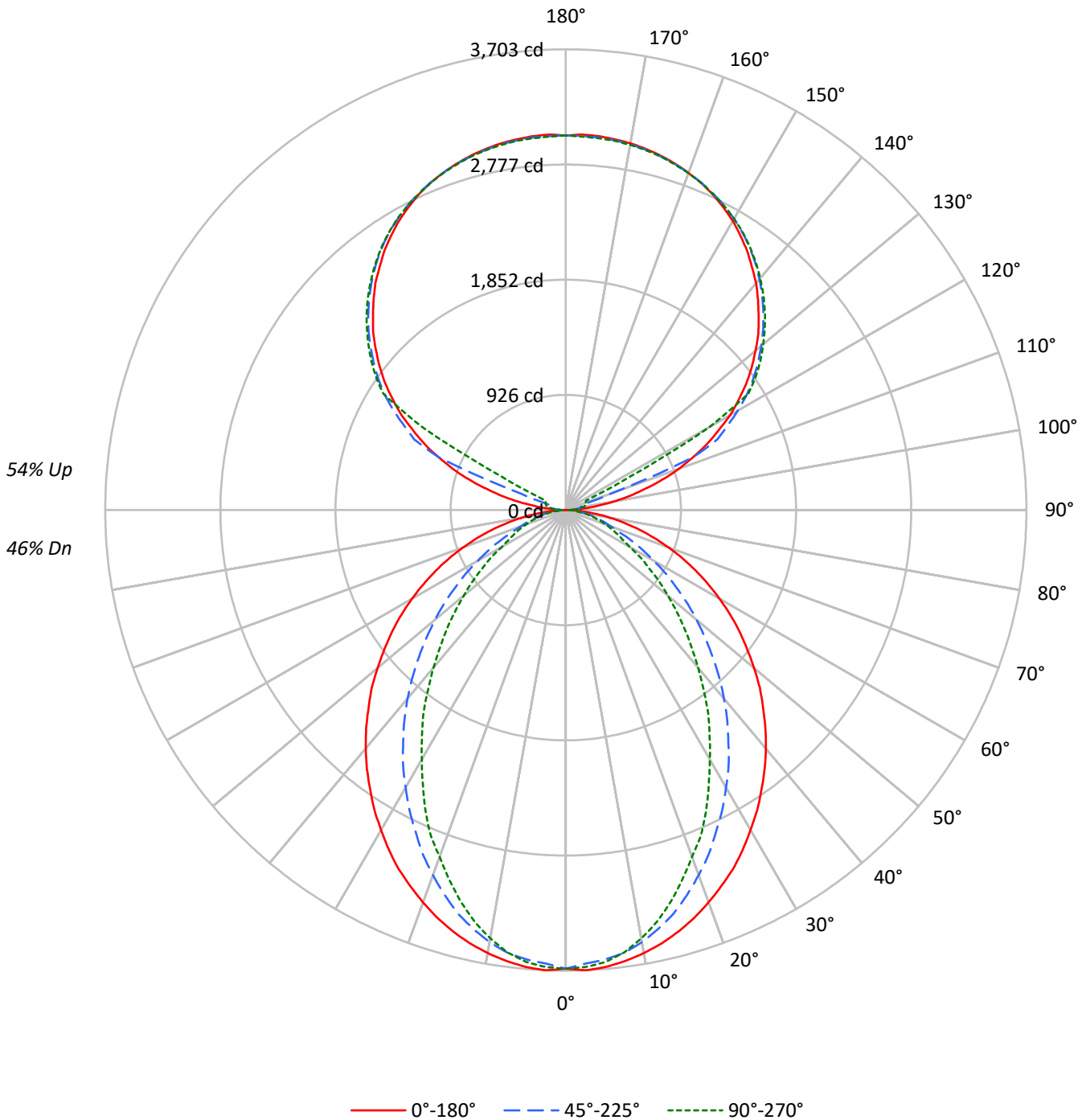
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16412.8 lumens
Efficiency: N/A
Efficacy: 93.5 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): 175.5
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: P929382
CATALOG NUMBER: DFN2DIP-HX4F0-100D100US940-RLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P929382
 CATALOG NUMBER: DFN2DIP-HX4F0-100D100US940-RLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46	46	46	46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45	40	40	40	40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39	34	34	34	34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34	29	29	29	29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29	26	26	26	26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23	23	23	23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23	20	20	20	20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21	18	18	18	18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16	16	16	16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17	15	15	15	15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15	13	13	13	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2741	2741	2741
5°	2746	2698	2715
10°	2719	2645	2627
15°	2682	2558	2490
20°	2632	2438	2323
25°	2582	2303	2161
30°	2514	2165	1956
35°	2448	2016	1776
40°	2380	1862	1569
45°	2301	1691	1382
50°	2220	1519	1199
55°	2135	1334	1023
60°	2037	1142	842
65°	1924	946	758
70°	1788	763	686
75°	1616	673	625
80°	1367	566	542
85°	955	379	408

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2301 cd/sqm



TEST NUMBER: P929382

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US940-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	345.5	2.1
10°-20°	948.5	5.8
20°-30°	1331.7	8.1
30°-40°	1451.6	8.8
40°-50°	1334.2	8.1
50°-60°	1047.8	6.4
60°-70°	682.0	4.2
70°-80°	351.1	2.1
80°-90°	94.9	0.6
90°-100°	99.3	0.6
100°-110°	370.0	2.3
110°-120°	981.4	6.0
120°-130°	1627.8	9.9
130°-140°	1729.1	10.5
140°-150°	1607.0	9.8
150°-160°	1292.0	7.9
160°-170°	832.5	5.1
170°-180°	286.5	1.7
0°-30°	2625.7	16.0
0°-40°	4077.3	24.8
0°-60°	6459.3	39.4
0°-90°	7587.3	46.2
90°-120°	1450.7	8.8
90°-150°	6414.5	39.1
90°-180°	8826.0	53.8
0°-180°	16412.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3687	3687	3687	3687	3687	
5°	3687	3670	3626	3657	3647	350
15°	3506	3470	3356	3293	3260	988
25°	3183	3076	2856	2719	2669	1464
35°	2742	2572	2279	2069	1995	1717
45°	2242	2018	1668	1431	1351	1731
55°	1705	1445	1084	884	821	1523
65°	1151	881	580	467	457	1141
75°	614	380	267	244	240	649
85°	143	73	63	63	63	165
90°	2	26	43	55	59	15
95°	142	70	85	96	94	168
105°	662	728	133	157	166	708
115°	1252	1290	1344	336	179	1233
125°	1771	1799	1841	1856	1862	1579
135°	2192	2226	2246	2268	2263	1693
145°	2542	2540	2577	2592	2581	1590
155°	2799	2780	2806	2819	2801	1290
165°	2949	2936	2943	2958	2943	833
175°	3017	3002	3006	3021	3000	287
180°	3010	3010	3010	3010	3010	



TEST NUMBER: P929382

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US940-RLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3686.6	3686.6	3686.6	3686.6	3686.6
2.5°	3703.2	3686.6	3649.8	3683.4	3676.7
5°	3686.6	3670.0	3626.4	3656.6	3646.6
7.5°	3656.6	3636.7	3589.9	3603.1	3586.5
10°	3616.5	3593.2	3526.6	3516.4	3496.6
12.5°	3566.7	3536.5	3446.2	3426.4	3389.6
15°	3506.5	3469.6	3356.3	3293.0	3259.7
17.5°	3436.3	3382.9	3242.8	3169.5	3116.0
20°	3356.3	3289.4	3122.7	3039.6	2965.9
22.5°	3269.6	3192.8	2999.2	2886.0	2836.0
25°	3182.9	3076.1	2855.8	2719.2	2669.0
27.5°	3079.5	2965.9	2722.4	2565.6	2488.8
30°	2969.5	2842.4	2575.5	2405.6	2315.4
32.5°	2862.6	2708.9	2435.7	2235.4	2151.8
35°	2742.5	2572.3	2278.9	2068.6	1995.0
37.5°	2625.8	2442.0	2132.0	1901.6	1818.3
40°	2502.2	2302.3	1978.4	1741.5	1654.8
42.5°	2375.5	2162.0	1825.1	1578.0	1494.8
45°	2242.0	2018.3	1668.3	1431.1	1351.1
47.5°	2115.4	1878.6	1518.2	1281.0	1207.8
50°	1975.2	1738.3	1371.3	1140.9	1071.1
52.5°	1838.1	1587.9	1231.1	1010.9	947.6
55°	1704.7	1444.6	1084.2	884.2	820.8
57.5°	1568.1	1301.2	954.4	767.4	714.0
60°	1427.9	1161.0	817.3	647.4	594.0
62.5°	1291.3	1024.4	700.5	540.6	514.0
65°	1151.1	880.7	580.5	467.2	457.0
67.5°	1017.7	747.2	467.2	410.2	400.3
70°	877.5	617.4	386.9	353.6	340.2
72.5°	744.0	496.9	323.5	296.9	290.3
75°	613.8	380.2	266.9	243.5	240.3
77.5°	483.9	270.1	210.2	196.8	190.1
80°	363.5	193.7	160.0	146.9	146.9
82.5°	253.4	130.2	110.1	103.4	103.4
85°	143.3	73.2	63.3	63.3	63.3
87.5°	53.4	26.6	26.6	23.4	23.4
90°	2.1	26.1	43.4	54.6	58.7
92.5°	54.6	45.8	52.3	56.6	58.7
95°	141.5	69.6	84.8	96.0	93.7
97.5°	254.8	76.3	111.0	117.7	119.8
100°	385.7	87.1	124.2	141.5	145.9
102.5°	529.2	525.1	128.5	152.4	159.0
105°	662.2	727.6	133.0	156.7	165.6
107.5°	816.9	871.2	137.4	161.2	169.9
110°	965.1	1010.6	381.2	163.5	172.0



TEST NUMBER: P929382

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US940-RLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1104.5	1143.5	1106.6	167.6	174.4
115°	1252.5	1289.5	1344.1	335.5	178.8
117.5°	1381.0	1424.5	1461.7	1150.1	579.4
120°	1524.9	1557.4	1596.8	1622.9	1328.8
122.5°	1646.7	1681.6	1725.3	1738.2	1740.6
125°	1770.9	1799.3	1840.7	1856.0	1862.4
127.5°	1884.2	1914.7	1947.5	1969.3	1971.3
130°	1990.9	2025.9	2049.7	2073.7	2071.7
132.5°	2099.9	2128.3	2152.1	2171.8	2169.7
135°	2191.5	2226.3	2245.8	2267.7	2263.4
137.5°	2287.2	2313.3	2335.3	2357.0	2350.5
140°	2380.7	2398.4	2422.1	2441.8	2431.0
142.5°	2459.4	2474.7	2502.9	2520.2	2509.4
145°	2542.2	2539.9	2576.9	2592.2	2581.3
147.5°	2613.8	2607.4	2644.3	2655.2	2646.7
150°	2683.7	2668.4	2703.4	2716.3	2705.4
152.5°	2742.4	2725.1	2757.7	2770.8	2755.6
155°	2799.1	2779.7	2805.8	2818.7	2801.4
157.5°	2844.9	2827.6	2847.2	2862.4	2844.9
160°	2884.2	2871.0	2884.2	2897.1	2881.9
162.5°	2918.8	2905.9	2916.8	2932.0	2912.4
165°	2949.3	2936.4	2942.9	2958.1	2942.9
167.5°	2973.4	2960.2	2967.0	2982.2	2962.5
170°	2993.0	2979.9	2984.3	2999.5	2979.9
172.5°	3006.0	2993.0	2997.5	3012.7	2993.0
175°	3016.8	3001.6	3006.0	3021.3	2999.5
177.5°	3021.3	3006.0	3008.4	3023.6	3003.9
180°	3010.4	3010.4	3010.4	3010.4	3010.4



TEST NUMBER: P929382
 CATALOG NUMBER: DFN2DIP-HX4F0-100D100US940-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	10.29	11.09	11.28	12.09	13.42	6.26	7.06	7.26	8.06	9.39
	3H	11.96	12.68	12.97	13.69	15.04	7.45	8.16	8.46	9.18	10.52
	4H	12.57	13.25	13.59	14.26	15.62	7.90	8.58	8.92	9.59	10.95
	6H	12.99	13.62	14.02	14.64	16.00	8.22	8.84	9.25	9.86	11.23
	8H	13.12	13.71	14.15	14.75	16.11	8.31	8.90	9.35	9.94	11.30
	12H	13.18	13.74	14.22	14.77	16.16	8.36	8.92	9.39	9.95	11.33
4H	2H	10.30	10.98	11.33	11.99	13.35	6.85	7.53	7.88	8.55	9.90
	3H	12.13	12.69	13.16	13.74	15.11	8.20	8.77	9.24	9.81	11.18
	4H	12.82	13.34	13.86	14.37	15.76	8.75	9.27	9.79	10.30	11.69
	6H	13.34	13.78	14.39	14.84	16.23	9.17	9.61	10.22	10.67	12.06
	8H	13.51	13.93	14.56	14.98	16.38	9.30	9.71	10.35	10.76	12.17
	12H	13.61	13.98	14.68	15.04	16.45	9.37	9.74	10.43	10.80	12.21
8H	4H	12.79	13.20	13.84	14.25	15.65	9.03	9.44	10.08	10.49	11.90
	6H	13.36	13.70	14.43	14.79	16.19	9.55	9.89	10.62	10.98	12.38
	8H	13.57	13.87	14.65	14.95	16.37	9.74	10.04	10.82	11.12	12.54
	12H	13.71	13.97	14.79	15.04	16.51	9.86	10.12	10.95	11.20	12.66
12H	4H	12.74	13.11	13.81	14.18	15.58	9.03	9.41	10.10	10.47	11.88
	6H	13.33	13.63	14.41	14.71	16.13	9.60	9.90	10.68	10.97	12.39
	8H	13.55	13.81	14.64	14.89	16.35	9.81	10.07	10.89	11.14	12.60