

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: P928086

Luminaire Tested: DFN2DIP-HX4F0-100D100US850-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928086
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-HX4F0-100D100US850-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

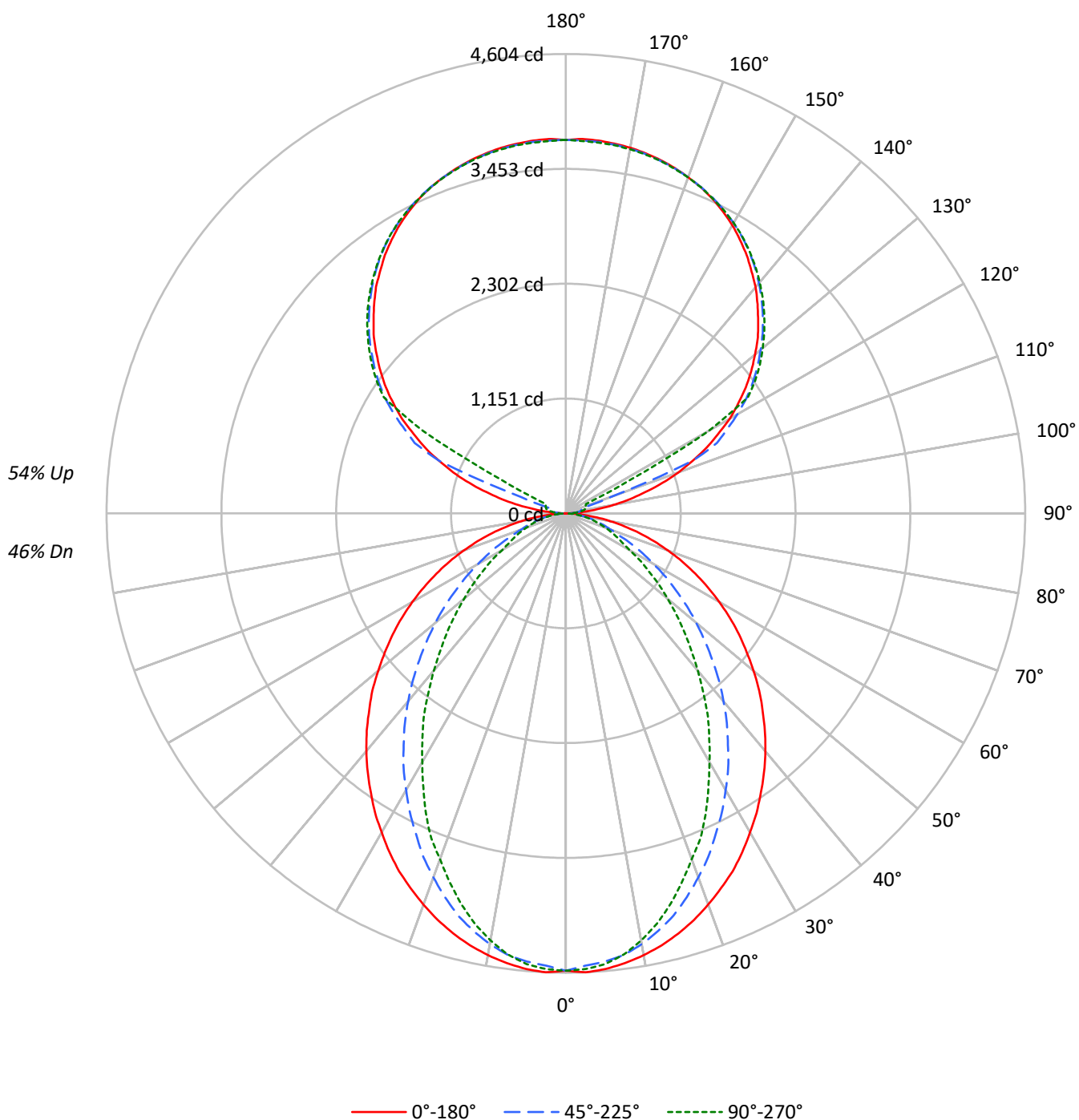
Lumens per Lamp: N/A
Luminaire Lumens: 20405.6 lumens
Efficiency: N/A
Efficacy: 116.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

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: P928086

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US850-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P928086

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US850-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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3408	3408	3408
5°	3414	3354	3376
10°	3380	3289	3266
15°	3334	3180	3096
20°	3273	3031	2888
25°	3210	2863	2687
30°	3126	2691	2432
35°	3043	2506	2208
40°	2959	2315	1951
45°	2861	2103	1718
50°	2760	1888	1490
55°	2655	1659	1272
60°	2533	1420	1047
65°	2393	1176	942
70°	2222	949	853
75°	2009	837	777
80°	1699	703	674
85°	1188	471	508

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2861 cd/sqm

TEST NUMBER: P928086

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US850-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	429.6	2.1
10°-20°	1179.3	5.8
20°-30°	1655.6	8.1
30°-40°	1804.7	8.8
40°-50°	1658.8	8.1
50°-60°	1302.7	6.4
60°-70°	847.9	4.2
70°-80°	436.5	2.1
80°-90°	118.0	0.6
90°-100°	123.4	0.6
100°-110°	460.1	2.3
110°-120°	1220.2	6.0
120°-130°	2023.8	9.9
130°-140°	2149.7	10.5
140°-150°	1997.9	9.8
150°-160°	1606.3	7.9
160°-170°	1035.0	5.1
170°-180°	356.2	1.7
0°-30°	3264.5	16.0
0°-40°	5069.2	24.8
0°-60°	8030.6	39.4
0°-90°	9433.1	46.2
90°-120°	1803.7	8.8
90°-150°	7975.0	39.1
90°-180°	10973.0	53.8
0°-180°	20405.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4584	4584	4584	4584	4584	
5°	4584	4563	4509	4546	4534	435
15°	4360	4314	4173	4094	4053	1228
25°	3957	3824	3551	3381	3318	1820
35°	3410	3198	2833	2572	2480	2134
45°	2788	2509	2074	1779	1680	2153
55°	2119	1796	1348	1099	1020	1894
65°	1431	1095	722	581	568	1419
75°	763	473	332	303	299	807
85°	178	91	79	79	79	205
90°	3	32	54	68	73	19
95°	176	86	106	119	116	208
105°	823	905	165	195	206	880
115°	1557	1603	1671	417	222	1533
125°	2202	2237	2288	2308	2316	1964
135°	2725	2768	2792	2819	2814	2105
145°	3161	3158	3204	3223	3209	1977
155°	3480	3456	3488	3504	3483	1604
165°	3667	3651	3659	3678	3659	1036
175°	3751	3732	3737	3756	3729	357
180°	3743	3743	3743	3743	3743	

TEST NUMBER: P928086

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4583.5	4583.5	4583.5	4583.5	4583.5
2.5°	4604.1	4583.5	4537.7	4579.5	4571.2
5°	4583.5	4562.8	4508.6	4546.1	4533.7
7.5°	4546.1	4521.4	4463.3	4479.6	4459.0
10°	4496.3	4467.3	4384.5	4371.8	4347.2
12.5°	4434.3	4396.9	4284.6	4260.0	4214.2
15°	4359.5	4313.7	4172.8	4094.1	4052.7
17.5°	4272.3	4205.9	4031.7	3940.5	3874.1
20°	4172.8	4089.7	3882.4	3779.0	3687.4
22.5°	4065.0	3969.6	3728.8	3588.1	3526.0
25°	3957.2	3824.4	3550.6	3380.7	3318.2
27.5°	3828.7	3687.4	3384.7	3189.7	3094.2
30°	3691.9	3533.8	3202.0	2990.9	2878.6
32.5°	3559.0	3367.9	3028.2	2779.2	2675.2
35°	3409.7	3198.1	2833.3	2571.9	2480.3
37.5°	3264.6	3036.1	2650.6	2364.2	2260.7
40°	3111.0	2862.3	2459.7	2165.2	2057.4
42.5°	2953.4	2688.0	2269.1	1961.9	1858.5
45°	2787.5	2509.3	2074.2	1779.3	1679.8
47.5°	2630.0	2335.6	1887.5	1592.6	1501.6
50°	2455.7	2161.2	1704.9	1418.4	1331.7
52.5°	2285.3	1974.2	1530.6	1256.8	1178.1
55°	2119.4	1796.0	1348.0	1099.4	1020.5
57.5°	1949.6	1617.7	1186.5	954.1	887.6
60°	1775.3	1443.5	1016.2	804.9	738.5
62.5°	1605.4	1273.6	870.9	672.1	639.0
65°	1431.2	1094.9	721.7	580.9	568.1
67.5°	1265.3	929.0	580.9	510.0	497.7
70°	1090.9	767.5	481.0	439.6	423.0
72.5°	925.0	617.8	402.2	369.2	360.9
75°	763.1	472.7	331.8	302.8	298.8
77.5°	601.6	335.8	261.4	244.6	236.3
80°	451.9	240.8	199.0	182.7	182.7
82.5°	315.1	161.9	136.9	128.5	128.5
85°	178.2	91.0	78.7	78.7	78.7
87.5°	66.4	33.0	33.0	29.1	29.1
90°	2.6	32.5	54.0	67.9	73.0
92.5°	67.9	56.9	65.0	70.4	73.0
95°	175.9	86.5	105.5	119.3	116.4
97.5°	316.7	94.8	138.0	146.3	148.9
100°	479.5	108.3	154.4	175.9	181.4
102.5°	658.0	652.9	159.8	189.4	197.7
105°	823.3	904.6	165.4	194.9	205.8
107.5°	1015.6	1083.2	170.8	200.4	211.3
110°	1199.8	1256.5	474.0	203.3	213.8



TEST NUMBER: P928086

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US850-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1373.2	1421.7	1375.8	208.4	216.8
115°	1557.1	1603.2	1671.0	417.1	222.2
117.5°	1717.0	1771.1	1817.3	1429.8	720.4
120°	1895.8	1936.3	1985.2	2017.7	1652.1
122.5°	2047.3	2090.7	2145.0	2161.1	2164.0
125°	2201.7	2237.1	2288.5	2307.5	2315.5
127.5°	2342.5	2380.5	2421.3	2448.3	2450.9
130°	2475.3	2518.8	2548.4	2578.2	2575.7
132.5°	2610.7	2646.1	2675.7	2700.1	2697.5
135°	2724.6	2768.0	2792.1	2819.4	2814.0
137.5°	2843.6	2876.1	2903.4	2930.4	2922.3
140°	2959.9	2981.9	3011.4	3035.9	3022.4
142.5°	3057.7	3076.7	3111.7	3133.3	3119.8
145°	3160.6	3157.8	3203.8	3222.8	3209.2
147.5°	3249.7	3241.7	3287.6	3301.2	3290.6
150°	3336.5	3317.6	3361.0	3377.1	3363.6
152.5°	3409.5	3388.0	3428.6	3444.9	3425.9
155°	3480.0	3455.9	3488.4	3504.4	3482.9
157.5°	3536.9	3515.4	3539.8	3558.8	3536.9
160°	3585.8	3569.4	3585.8	3601.9	3583.0
162.5°	3628.9	3612.8	3626.3	3645.3	3620.9
165°	3666.8	3650.7	3658.8	3677.8	3658.8
167.5°	3696.7	3680.3	3688.8	3707.7	3683.2
170°	3721.1	3704.8	3710.3	3729.2	3704.8
172.5°	3737.2	3721.1	3726.7	3745.6	3721.1
175°	3750.7	3731.8	3737.2	3756.3	3729.2
177.5°	3756.3	3737.2	3740.2	3759.2	3734.7
180°	3742.8	3742.8	3742.8	3742.8	3742.8

TEST NUMBER: P928086

CATALOG NUMBER: DFN2DIP-HX4F0-100D100US850-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	11.04	11.85	12.04	12.85	14.17	7.02	7.82	8.01	8.82	10.15
	3H	12.72	13.44	13.73	14.45	15.80	8.21	8.92	9.21	9.93	11.28
	4H	13.33	14.01	14.35	15.02	16.38	8.66	9.33	9.68	10.35	11.70
	6H	13.75	14.37	14.78	15.39	16.76	8.98	9.60	10.01	10.62	11.99
	8H	13.88	14.47	14.91	15.50	16.87	9.07	9.66	10.10	10.70	12.06
	12H	13.94	14.50	14.98	15.53	16.92	9.11	9.67	10.15	10.70	12.09
4H	2H	11.06	11.74	12.08	12.75	14.11	7.61	8.29	8.64	9.30	10.66
	3H	12.89	13.45	13.92	14.49	15.86	8.96	9.52	9.99	10.57	11.93
	4H	13.58	14.09	14.62	15.13	16.52	9.51	10.02	10.55	11.06	12.45
	6H	14.09	14.54	15.14	15.59	16.98	9.93	10.37	10.98	11.43	12.82
	8H	14.27	14.68	15.32	15.73	17.13	10.06	10.47	11.11	11.52	12.92
	12H	14.36	14.74	15.43	15.80	17.21	10.12	10.49	11.19	11.56	12.97
8H	4H	13.55	13.96	14.60	15.01	16.41	9.79	10.20	10.84	11.25	12.65
	6H	14.11	14.45	15.19	15.54	16.94	10.31	10.65	11.38	11.74	13.14
	8H	14.33	14.63	15.41	15.70	17.12	10.50	10.80	11.58	11.87	13.29
	12H	14.47	14.73	15.55	15.80	17.26	10.62	10.88	11.70	11.95	13.41
12H	4H	13.50	13.87	14.56	14.93	16.34	9.79	10.16	10.86	11.23	12.64
	6H	14.09	14.39	15.17	15.46	16.88	10.36	10.65	11.44	11.73	13.15
	8H	14.31	14.57	15.39	15.64	17.10	10.57	10.83	11.65	11.90	13.36

END OF REPORT