

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: P927474

Luminaire Tested: DFN2DIP-HX4F0-110D100US835-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927474
REPORT IS A COMBINATION OF REPORTS P900942 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-110D100US835-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

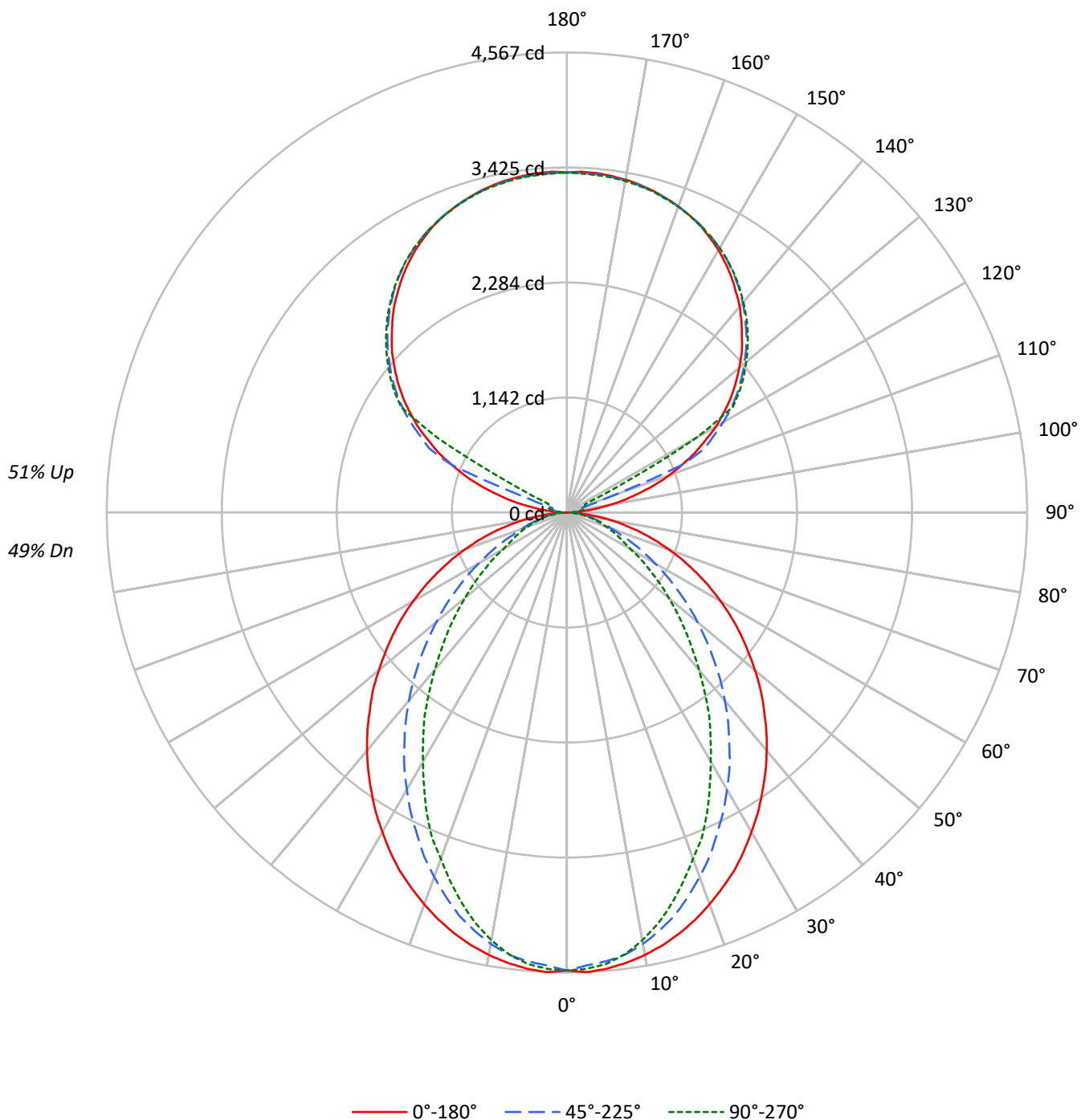
Lumens per Lamp: N/A
Luminaire Lumens: 19250.0 lumens
Efficiency: N/A
Efficacy: 102.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 188.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P927474

CATALOG NUMBER: DFN2DIP-HX4F0-110D100US835-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P927474

CATALOG NUMBER: DFN2DIP-HX4F0-110D100US835-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	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	83	81	73	71	69	61	59	58	49	48	47
2	90	82	77	72	82	76	71	67	65	61	58	54	51	49	44	42	40
3	82	73	66	60	75	68	61	56	57	53	49	48	45	42	39	37	35
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	35	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	36	42	36	32	35	31	28	29	26	24
7	59	47	39	34	55	44	37	32	38	33	29	32	28	25	27	24	21
8	55	43	35	30	51	40	33	29	35	29	26	30	25	22	25	22	19
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	27	23	29	24	21	25	21	18	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3380	3380	3380
5°	3386	3327	3348
10°	3353	3262	3240
15°	3307	3155	3071
20°	3246	3006	2865
25°	3184	2840	2665
30°	3100	2670	2412
35°	3018	2486	2190
40°	2935	2296	1935
45°	2838	2086	1704
50°	2738	1873	1478
55°	2633	1646	1261
60°	2512	1408	1039
65°	2373	1166	935
70°	2204	941	846
75°	1993	830	770
80°	1686	697	669
85°	1179	467	504

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2838 cd/sqm

TEST NUMBER: P927474

CATALOG NUMBER: DFN2DIP-HX4F0-110D100US835-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	426.1	2.2
10°-20°	1169.7	6.1
20°-30°	1642.2	8.5
30°-40°	1790.1	9.3
40°-50°	1645.3	8.5
50°-60°	1292.1	6.7
60°-70°	841.1	4.4
70°-80°	432.9	2.2
80°-90°	116.5	0.6
90°-100°	111.3	0.6
100°-110°	414.9	2.2
110°-120°	1100.3	5.7
120°-130°	1824.9	9.5
130°-140°	1938.4	10.1
140°-150°	1801.5	9.4
150°-160°	1448.4	7.5
160°-170°	933.3	4.8
170°-180°	321.2	1.7
0°-30°	3238.0	16.8
0°-40°	5028.1	26.1
0°-60°	7965.5	41.4
0°-90°	9355.9	48.6
90°-120°	1626.4	8.4
90°-150°	7191.2	37.4
90°-180°	9894.0	51.4
0°-180°	19250.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4546	4546	4546	4546	4546	
5°	4546	4526	4472	4509	4497	431
15°	4324	4279	4139	4061	4020	1218
25°	3925	3793	3522	3353	3291	1805
35°	3382	3172	2810	2551	2460	2117
45°	2765	2489	2057	1765	1666	2135
55°	2102	1781	1337	1090	1012	1879
65°	1420	1086	716	576	564	1407
75°	757	469	329	300	296	801
85°	177	90	78	78	78	203
90°	2	29	49	61	66	18
95°	159	78	95	108	105	188
105°	742	816	149	176	186	793
115°	1404	1446	1507	376	200	1382
125°	1985	2017	2064	2081	2088	1771
135°	2457	2496	2518	2542	2537	1898
145°	2850	2847	2889	2906	2894	1782
155°	3138	3116	3146	3160	3141	1446
165°	3306	3292	3299	3316	3299	934
175°	3382	3365	3370	3387	3363	322
180°	3375	3375	3375	3375	3375	

TEST NUMBER: P927474

CATALOG NUMBER: DFN2DIP-HX4F0-110D100US835-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4546.3	4546.3	4546.3	4546.3	4546.3
2.5°	4566.8	4546.3	4500.9	4542.4	4534.1
5°	4546.3	4525.8	4472.1	4509.2	4497.0
7.5°	4509.2	4484.7	4427.1	4443.3	4422.7
10°	4459.9	4431.0	4349.0	4336.3	4311.9
12.5°	4398.3	4361.2	4249.9	4225.4	4180.0
15°	4324.1	4278.7	4139.0	4060.9	4019.8
17.5°	4237.7	4171.8	3998.9	3908.5	3842.6
20°	4139.0	4056.5	3850.9	3748.3	3657.5
22.5°	4032.1	3937.3	3698.6	3558.9	3497.3
25°	3925.1	3793.3	3521.8	3353.3	3291.3
27.5°	3797.7	3657.5	3357.2	3163.8	3069.1
30°	3661.9	3505.2	3176.1	2966.5	2855.2
32.5°	3530.1	3340.6	3003.6	2756.6	2653.6
35°	3382.1	3172.1	2810.3	2551.0	2460.2
37.5°	3238.1	3011.5	2629.1	2344.9	2242.4
40°	3085.7	2839.1	2439.7	2147.6	2040.7
42.5°	2929.4	2666.2	2250.7	1946.0	1843.4
45°	2764.9	2489.0	2057.3	1764.8	1666.2
47.5°	2608.6	2316.6	1872.2	1579.7	1489.4
50°	2435.7	2143.7	1691.1	1406.9	1320.9
52.5°	2266.8	1958.2	1518.2	1246.7	1168.5
55°	2102.2	1781.4	1337.0	1090.4	1012.3
57.5°	1933.8	1604.6	1176.8	946.4	880.4
60°	1760.9	1431.8	1007.9	798.4	732.5
62.5°	1592.4	1263.3	863.9	666.6	633.8
65°	1419.5	1086.0	715.9	576.2	563.5
67.5°	1255.0	921.5	576.2	505.9	493.7
70°	1082.1	761.3	477.1	436.1	419.5
72.5°	917.5	612.9	399.0	366.2	357.9
75°	756.9	468.8	329.1	300.3	296.4
77.5°	596.7	333.1	259.3	242.7	234.4
80°	448.3	238.8	197.3	181.2	181.2
82.5°	312.5	160.6	135.8	127.5	127.5
85°	176.8	90.4	78.1	78.1	78.1
87.5°	65.9	32.7	32.7	28.8	28.8
90°	2.3	29.3	48.7	61.2	65.8
92.5°	61.2	51.3	58.6	63.5	65.8
95°	158.6	78.0	95.1	107.6	105.0
97.5°	285.6	85.5	124.4	131.9	134.3
100°	432.4	97.7	139.2	158.6	163.6
102.5°	593.3	588.7	144.1	170.8	178.3
105°	742.4	815.7	149.1	175.7	185.6
107.5°	915.8	976.7	154.0	180.7	190.5
110°	1081.9	1133.0	427.4	183.3	192.8



TEST NUMBER: P927474

CATALOG NUMBER: DFN2DIP-HX4F0-110D100US835-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1238.2	1282.0	1240.6	187.9	195.5
115°	1404.1	1445.6	1506.8	376.1	200.4
117.5°	1548.2	1597.0	1638.7	1289.3	649.6
120°	1709.5	1746.0	1790.1	1819.4	1489.7
122.5°	1846.1	1885.2	1934.2	1948.7	1951.3
125°	1985.3	2017.2	2063.6	2080.7	2087.9
127.5°	2112.3	2146.5	2183.3	2207.7	2210.0
130°	2232.0	2271.2	2297.9	2324.8	2322.5
132.5°	2354.1	2386.0	2412.7	2434.7	2432.4
135°	2456.8	2495.9	2517.7	2542.3	2537.4
137.5°	2564.1	2593.4	2618.0	2642.4	2635.1
140°	2669.0	2688.8	2715.4	2737.5	2725.3
142.5°	2757.2	2774.3	2805.9	2825.3	2813.2
145°	2850.0	2847.4	2888.9	2906.0	2893.8
147.5°	2930.3	2923.1	2964.5	2976.7	2967.2
150°	3008.6	2991.5	3030.7	3045.2	3033.0
152.5°	3074.4	3055.0	3091.6	3106.3	3089.2
155°	3138.0	3116.2	3145.5	3160.0	3140.6
157.5°	3189.3	3169.9	3191.9	3209.0	3189.3
160°	3233.4	3218.6	3233.4	3247.9	3230.8
162.5°	3272.2	3257.7	3269.9	3287.0	3265.0
165°	3306.4	3291.9	3299.2	3316.3	3299.2
167.5°	3333.4	3318.6	3326.2	3343.3	3321.2
170°	3355.4	3340.7	3345.6	3362.7	3340.7
172.5°	3369.9	3355.4	3360.4	3377.5	3355.4
175°	3382.1	3365.0	3369.9	3387.1	3362.7
177.5°	3387.1	3369.9	3372.6	3389.7	3367.6
180°	3374.9	3374.9	3374.9	3374.9	3374.9



TEST NUMBER: P927474

CATALOG NUMBER: DFN2DIP-HX4F0-110D100US835-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	11.25	12.07	12.22	13.05	14.34	7.22	8.04	8.20	9.02	10.32
	3H	12.93	13.66	13.91	14.65	15.97	8.41	9.14	9.40	10.14	11.45
	4H	13.53	14.23	14.53	15.22	16.55	8.86	9.55	9.86	10.55	11.88
	6H	13.96	14.59	14.97	15.59	16.93	9.18	9.82	10.19	10.82	12.16
	8H	14.08	14.69	15.10	15.71	17.04	9.27	9.88	10.29	10.90	12.23
	12H	14.14	14.72	15.16	15.73	17.09	9.32	9.89	10.34	10.91	12.26
4H	2H	11.26	11.96	12.27	12.95	14.28	7.82	8.51	8.82	9.51	10.83
	3H	13.09	13.67	14.11	14.70	16.03	9.17	9.74	10.18	10.77	12.11
	4H	13.79	14.31	14.81	15.33	16.69	9.72	10.24	10.74	11.26	12.62
	6H	14.30	14.75	15.34	15.80	17.15	10.14	10.59	11.17	11.63	12.99
	8H	14.48	14.90	15.51	15.93	17.31	10.27	10.69	11.30	11.72	13.09
	12H	14.57	14.95	15.62	16.00	17.38	10.33	10.71	11.38	11.76	13.14
8H	4H	13.75	14.18	14.79	15.21	16.58	10.00	10.42	11.03	11.45	12.82
	6H	14.32	14.67	15.38	15.75	17.12	10.52	10.86	11.57	11.94	13.31
	8H	14.54	14.84	15.60	15.91	17.29	10.71	11.01	11.77	12.08	13.46
	12H	14.68	14.95	15.75	16.00	17.43	10.83	11.10	11.90	12.15	13.58
12H	4H	13.71	14.09	14.76	15.14	16.51	10.00	10.38	11.05	11.43	12.81
	6H	14.30	14.60	15.36	15.66	17.05	10.57	10.87	11.63	11.93	13.32
	8H	14.52	14.79	15.59	15.84	17.27	10.78	11.05	11.85	12.10	13.53

END OF REPORT