

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: P905427

Luminaire Tested: DFN2DIP-HX4F0-040D100US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905427
REPORT IS A COMBINATION OF REPORTS P899408 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D100US835-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

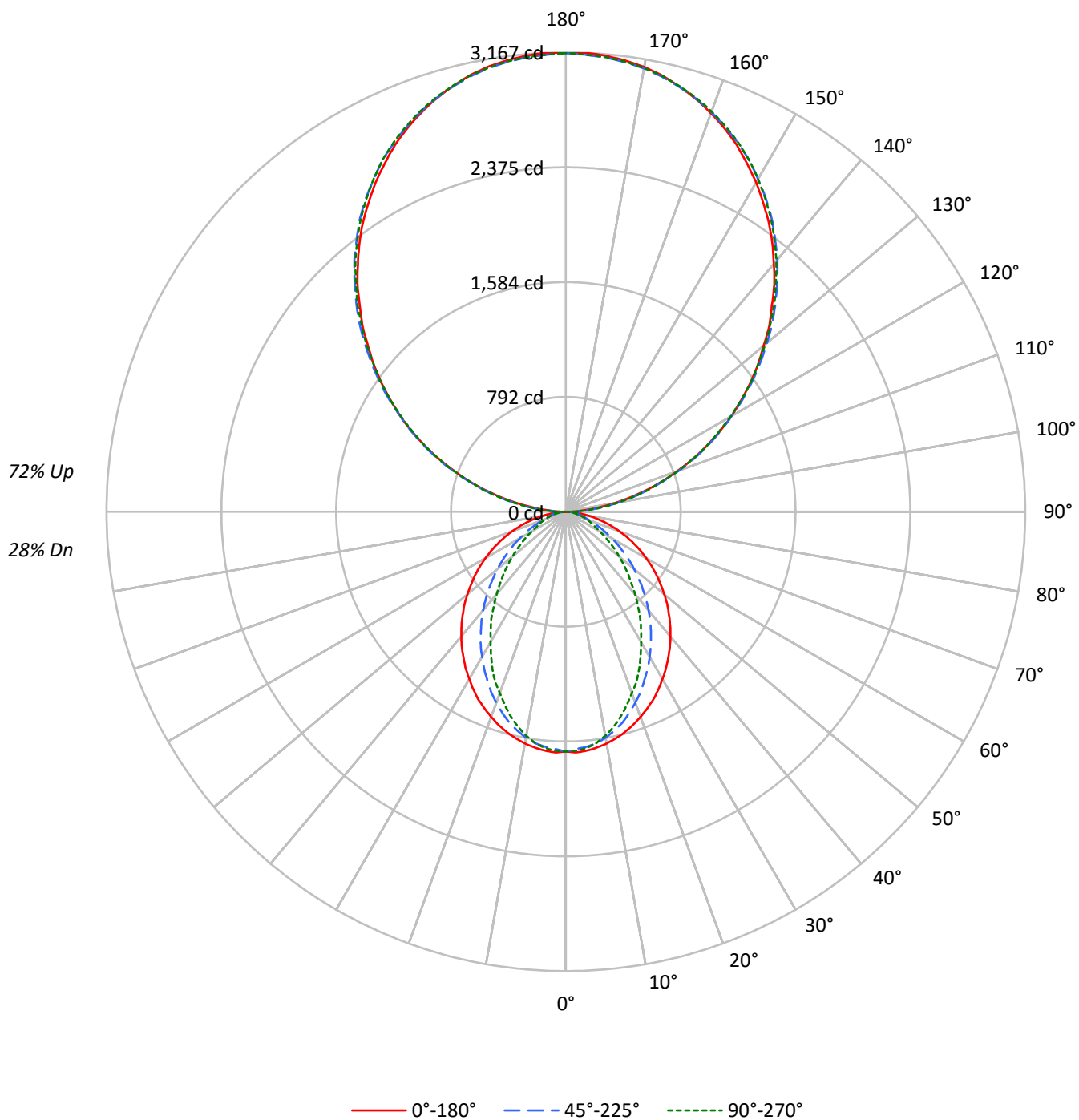
Lumens per Lamp: N/A
Luminaire Lumens: 12250.0 lumens
Efficiency: N/A
Efficacy: 134.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 91
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: P905427

CATALOG NUMBER: DFN2DIP-HX4F0-040D100US835-RLLFLL

Luminous Intensity Polar Plot



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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	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1229	1229	1229
5°	1231	1210	1218
10°	1219	1186	1178
15°	1203	1147	1117
20°	1180	1093	1042
25°	1158	1033	969
30°	1127	971	877
35°	1098	904	796
40°	1067	835	704
45°	1032	758	620
50°	996	681	538
55°	958	598	459
60°	914	512	378
65°	863	424	340
70°	802	342	308
75°	724	302	280
80°	613	253	243
85°	429	170	183

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2385 cd/sqm

TEST NUMBER: P905427

CATALOG NUMBER: DFN2DIP-HX4F0-040D100US835-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.9	1.3
10°-20°	425.3	3.5
20°-30°	597.2	4.9
30°-40°	650.9	5.3
40°-50°	598.3	4.9
50°-60°	469.9	3.8
60°-70°	305.8	2.5
70°-80°	157.4	1.3
80°-90°	49.2	0.4
90°-100°	195.7	1.6
100°-110°	621.8	5.1
110°-120°	1064.1	8.7
120°-130°	1399.5	11.4
130°-140°	1570.9	12.8
140°-150°	1540.4	12.6
150°-160°	1292.2	10.5
160°-170°	856.9	7.0
170°-180°	299.5	2.4
0°-30°	1177.4	9.6
0°-40°	1828.4	14.9
0°-60°	2896.5	23.6
0°-90°	3409.0	27.8
90°-120°	1881.6	15.4
90°-150°	6392.4	52.2
90°-180°	8841.0	72.2
0°-180°	12250.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1653	1646	1626	1640	1635	157
15°	1572	1556	1505	1477	1462	443
25°	1427	1379	1281	1219	1197	656
35°	1230	1154	1022	928	895	770
45°	1005	905	748	642	606	776
55°	764	648	486	396	368	683
65°	516	395	260	210	205	512
75°	275	170	120	109	108	291
85°	64	33	28	28	28	74
90°	3	34	93	88	91	12
95°	139	166	171	171	166	155
105°	574	582	587	592	592	606
115°	1068	1083	1078	1076	1068	1056
125°	1553	1577	1569	1561	1558	1388
135°	2009	2038	2044	2041	2034	1553
145°	2439	2458	2473	2476	2466	1524
155°	2789	2796	2805	2818	2810	1284
165°	3034	3031	3031	3050	3037	856
175°	3157	3149	3144	3163	3146	300
180°	3163	3163	3163	3163	3163	

TEST NUMBER: P905427

CATALOG NUMBER: DFN2DIP-HX4F0-040D100US835-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1653.2	1653.2	1653.2	1653.2	1653.2
2.5°	1660.7	1653.2	1636.7	1651.8	1648.7
5°	1653.2	1645.7	1626.2	1639.7	1635.3
7.5°	1639.7	1630.8	1609.9	1615.7	1608.3
10°	1621.8	1611.3	1581.4	1576.8	1568.0
12.5°	1599.4	1585.9	1545.4	1536.5	1520.0
15°	1572.4	1555.9	1505.1	1476.7	1461.8
17.5°	1541.0	1517.0	1454.1	1421.3	1397.3
20°	1505.1	1475.1	1400.3	1363.0	1330.0
22.5°	1466.2	1431.8	1344.9	1294.1	1271.8
25°	1427.3	1379.4	1280.6	1219.4	1196.8
27.5°	1381.0	1330.0	1220.8	1150.5	1116.0
30°	1331.6	1274.6	1154.9	1078.7	1038.3
32.5°	1283.7	1214.8	1092.2	1002.4	964.9
35°	1229.9	1153.5	1021.9	927.6	894.6
37.5°	1177.5	1095.1	956.0	852.7	815.4
40°	1122.1	1032.4	887.2	781.0	742.1
42.5°	1065.2	969.5	818.4	707.6	670.3
45°	1005.4	905.1	748.1	641.8	605.9
47.5°	948.6	842.4	680.8	574.5	541.6
50°	885.7	779.5	614.9	511.6	480.3
52.5°	824.3	712.1	552.1	453.3	424.9
55°	764.5	647.8	486.2	396.5	368.1
57.5°	703.2	583.5	427.9	344.1	320.2
60°	640.3	520.6	366.5	290.3	266.4
62.5°	579.1	459.4	314.1	242.4	230.5
65°	516.2	394.9	260.3	209.5	204.9
67.5°	456.4	335.1	209.5	184.0	179.5
70°	393.5	276.8	173.5	158.6	152.5
72.5°	333.7	222.9	145.1	133.2	130.2
75°	275.2	170.5	119.7	109.2	107.8
77.5°	217.0	121.1	94.3	88.3	85.2
80°	163.0	86.8	71.7	65.9	65.9
82.5°	113.7	58.4	49.4	46.3	46.3
85°	64.3	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	2.9	34.3	93.4	87.7	90.6
92.5°	59.1	80.1	83.0	85.8	85.8
95°	139.2	165.9	170.7	170.7	165.9
97.5°	231.7	256.5	267.0	267.0	267.0
100°	338.5	360.4	368.0	368.0	365.2
102.5°	451.0	467.2	477.7	480.5	477.7
105°	574.0	581.6	587.3	592.1	592.1
107.5°	696.0	707.5	707.5	709.4	696.0
110°	814.3	829.5	829.5	829.5	821.9

TEST NUMBER: P905427

CATALOG NUMBER: DFN2DIP-HX4F0-040D100US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	942.0	958.2	955.4	947.7	942.0
115°	1067.9	1083.1	1078.4	1075.5	1067.9
117.5°	1192.8	1213.8	1200.4	1192.8	1185.1
120°	1318.6	1339.6	1318.6	1318.6	1310.1
122.5°	1433.0	1459.7	1446.4	1438.8	1433.0
125°	1553.2	1577.0	1569.4	1560.8	1558.0
127.5°	1670.5	1700.0	1689.5	1678.1	1670.5
130°	1780.1	1814.4	1809.7	1803.9	1793.5
132.5°	1903.1	1929.8	1931.7	1918.4	1910.7
135°	2008.9	2038.5	2044.2	2041.4	2033.7
137.5°	2127.2	2151.0	2155.8	2153.9	2142.4
140°	2231.1	2254.9	2268.3	2268.3	2257.8
142.5°	2337.9	2361.7	2369.3	2372.2	2361.7
145°	2438.9	2458.0	2473.3	2476.1	2465.6
147.5°	2529.5	2553.4	2564.8	2569.6	2559.1
150°	2623.0	2639.2	2649.7	2658.2	2649.7
152.5°	2705.9	2722.1	2735.5	2746.0	2735.5
155°	2788.9	2796.5	2805.1	2818.4	2809.8
157.5°	2860.4	2866.1	2870.9	2889.9	2876.6
160°	2924.3	2930.0	2932.8	2949.0	2937.6
162.5°	2983.4	2983.4	2986.2	3004.3	2991.0
165°	3033.9	3031.0	3031.0	3050.1	3036.8
167.5°	3079.7	3071.1	3071.1	3090.2	3076.8
170°	3114.0	3106.4	3103.5	3122.6	3106.4
172.5°	3137.8	3130.2	3127.3	3146.4	3130.2
175°	3156.9	3149.3	3143.6	3162.6	3146.4
177.5°	3167.4	3159.8	3154.0	3170.2	3154.0
180°	3162.6	3162.6	3162.6	3162.6	3162.6

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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	5.32	6.00	6.45	7.12	8.68	1.29	1.97	2.43	3.09	4.65
	3H	6.99	7.59	8.13	8.72	10.30	2.47	3.08	3.61	4.21	5.78
	4H	7.59	8.17	8.74	9.29	10.87	2.92	3.49	4.07	4.62	6.20
	6H	8.00	8.53	9.16	9.66	11.25	3.23	3.76	4.39	4.89	6.48
	8H	8.13	8.63	9.29	9.78	11.36	3.32	3.82	4.48	4.97	6.55
	12H	8.18	8.66	9.35	9.80	11.41	3.36	3.84	4.52	4.98	6.58
4H	2H	5.32	5.90	6.48	7.02	8.60	1.87	2.45	3.03	3.57	5.15
	3H	7.14	7.62	8.30	8.77	10.36	3.21	3.69	4.37	4.84	6.43
	4H	7.82	8.26	8.99	9.41	11.02	3.75	4.19	4.92	5.34	6.95
	6H	8.33	8.71	9.50	9.87	11.47	4.17	4.54	5.33	5.71	7.31
	8H	8.51	8.86	9.67	10.01	11.63	4.29	4.64	5.46	5.80	7.42
	12H	8.59	8.91	9.78	10.08	11.70	4.35	4.67	5.53	5.84	7.46
8H	4H	7.78	8.13	8.95	9.29	10.91	4.02	4.37	5.19	5.53	7.15
	6H	8.34	8.63	9.53	9.83	11.45	4.54	4.83	5.72	6.03	7.64
	8H	8.56	8.81	9.75	9.99	11.62	4.73	4.98	5.92	6.16	7.79
	12H	8.69	8.91	9.89	10.09	11.76	4.84	5.06	6.04	6.24	7.91
12H	4H	7.73	8.04	8.91	9.21	10.83	4.02	4.34	5.20	5.51	7.13
	6H	8.32	8.57	9.51	9.75	11.38	4.59	4.84	5.78	6.02	7.65
	8H	8.53	8.75	9.73	9.93	11.60	4.79	5.01	5.99	6.19	7.86

END OF REPORT