

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: P905898

Luminaire Tested: DFN2DIP-PN4F0-040D100US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905898
REPORT IS A COMBINATION OF REPORTS P899718 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D100US835-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

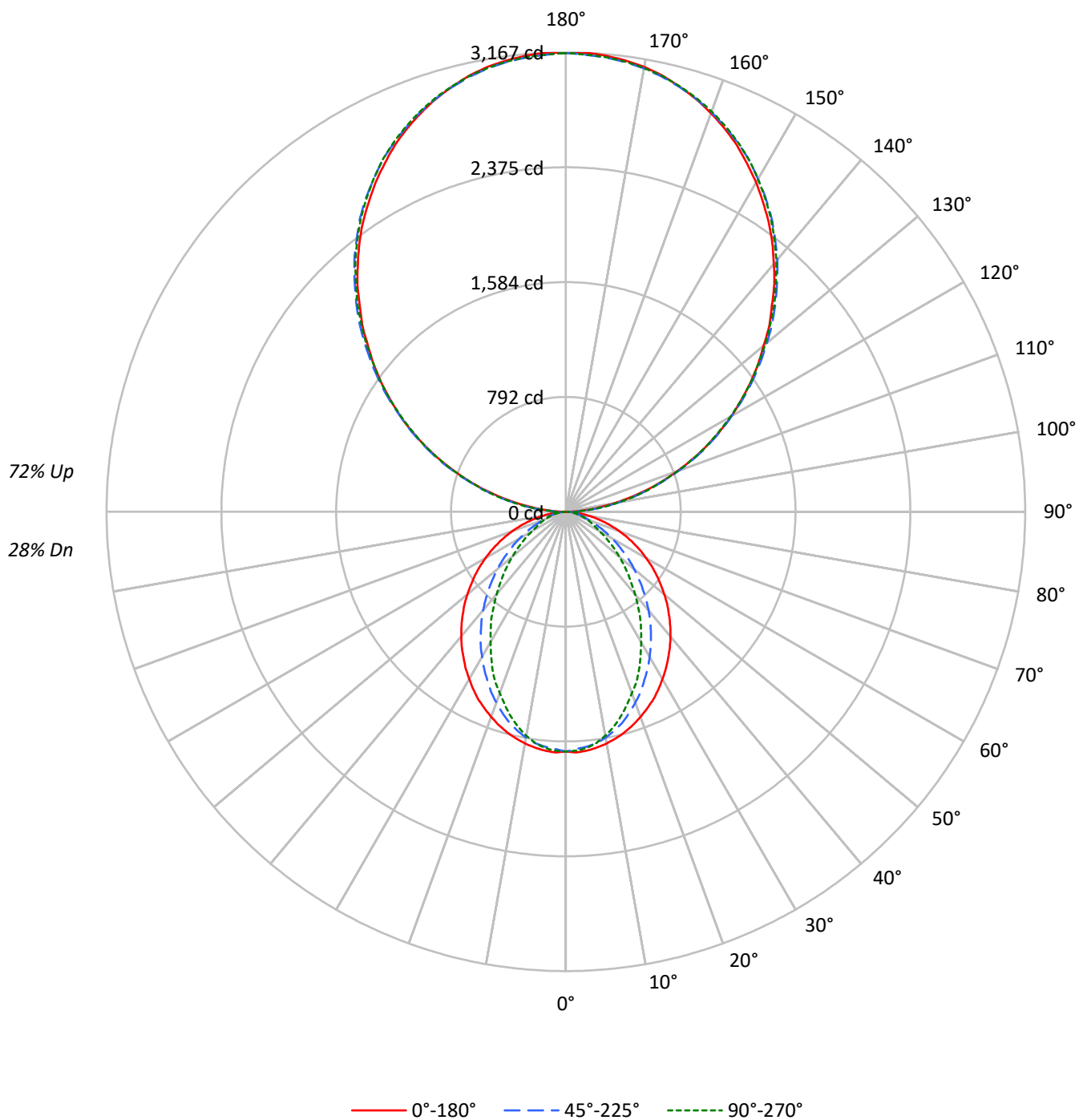
Lumens per Lamp: N/A
Luminaire Lumens: 12250.0 lumens
Efficiency: N/A
Efficacy: 113.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 108.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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°	1207	1207	1207
5°	1209	1188	1195
10°	1197	1165	1157
15°	1180	1126	1097
20°	1158	1073	1023
25°	1136	1014	952
30°	1106	953	862
35°	1077	888	783
40°	1047	820	692
45°	1012	745	609
50°	976	669	529
55°	939	588	451
60°	895	503	372
65°	846	417	335
70°	785	336	303
75°	709	297	276
80°	599	249	241
85°	417	167	182

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2477 cd/sqm

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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	

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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

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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	5.26	5.94	6.40	7.06	8.62	1.23	1.91	2.36	3.03	4.58
	3H	6.93	7.54	8.07	8.67	10.24	2.41	3.01	3.55	4.14	5.71
	4H	7.54	8.11	8.68	9.24	10.82	2.85	3.42	4.00	4.55	6.13
	6H	7.95	8.48	9.11	9.61	11.20	3.16	3.69	4.32	4.82	6.41
	8H	8.08	8.58	9.23	9.72	11.31	3.25	3.75	4.41	4.90	6.48
	12H	8.13	8.61	9.30	9.75	11.35	3.29	3.77	4.45	4.91	6.51
4H	2H	5.26	5.84	6.42	6.97	8.55	1.81	2.38	2.96	3.51	5.09
	3H	7.08	7.56	8.24	8.71	10.31	3.14	3.62	4.30	4.78	6.37
	4H	7.77	8.21	8.93	9.35	10.96	3.69	4.13	4.85	5.27	6.88
	6H	8.28	8.66	9.45	9.82	11.42	4.10	4.47	5.27	5.64	7.24
	8H	8.45	8.80	9.62	9.96	11.58	4.22	4.58	5.39	5.73	7.35
	12H	8.54	8.86	9.73	10.03	11.65	4.28	4.60	5.47	5.77	7.39
8H	4H	7.73	8.08	8.89	9.23	10.85	3.96	4.31	5.12	5.47	7.08
	6H	8.29	8.58	9.48	9.78	11.39	4.47	4.76	5.66	5.96	7.57
	8H	8.51	8.76	9.70	9.94	11.57	4.66	4.91	5.85	6.09	7.73
	12H	8.64	8.86	9.84	10.04	11.71	4.77	5.00	5.97	6.17	7.84
12H	4H	7.67	7.99	8.85	9.16	10.78	3.95	4.27	5.14	5.44	7.06
	6H	8.26	8.52	9.46	9.69	11.33	4.52	4.77	5.71	5.95	7.58
	8H	8.48	8.70	9.68	9.88	11.54	4.72	4.95	5.92	6.12	7.79

END OF REPORT