

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: P907677

Luminaire Tested: DFN2DIP-4P3F0-040D030US840-RLONL

Issue Date: 11/21/2024

**Test Information**

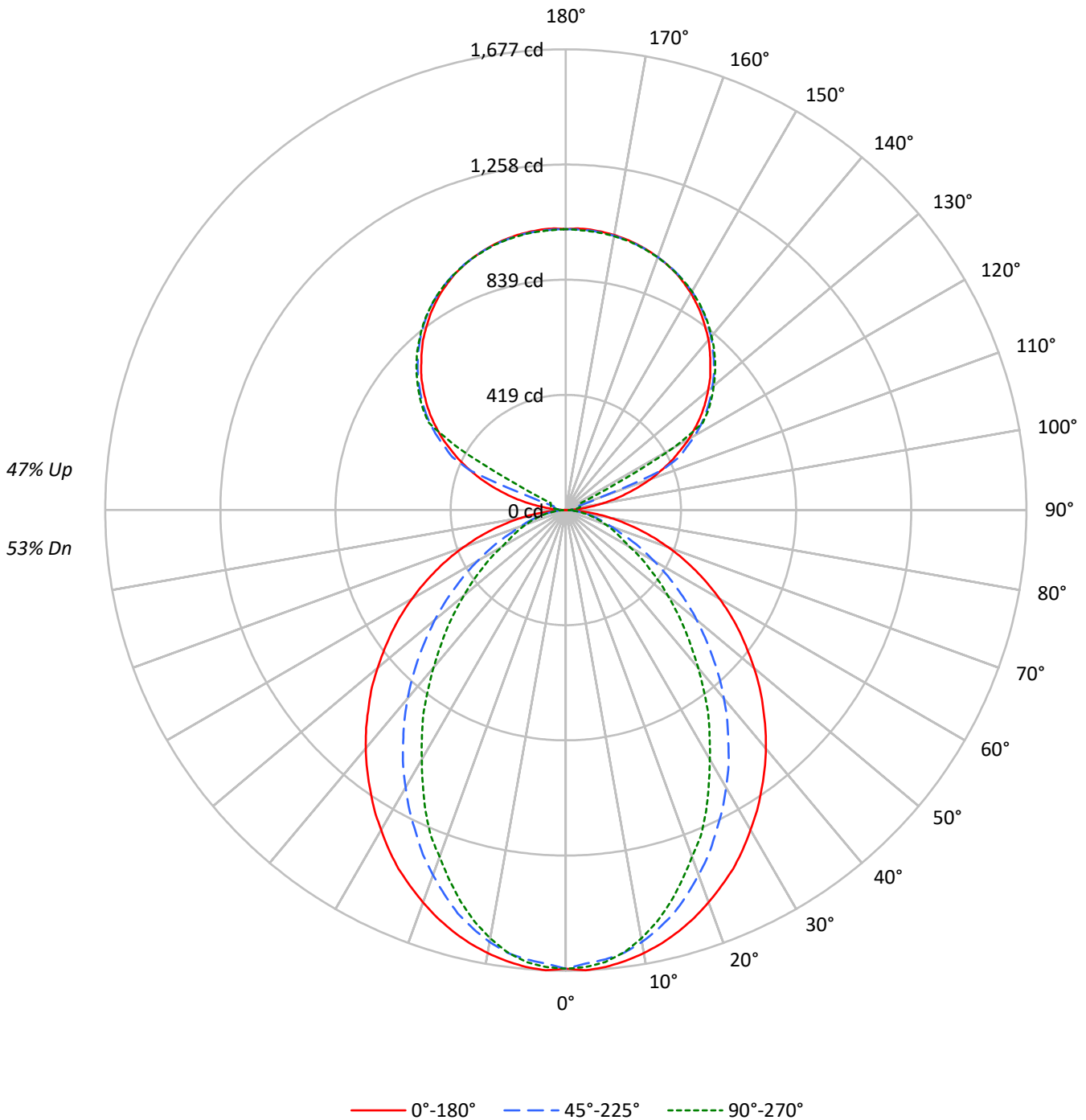
Test Method: LM-79-2019  
Report Number: P907677  
REPORT IS A COMBINATION OF REPORTS P900564 AND P897473  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-4P3F0-040D030US840-RLLONL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6432.9 lumens  
Efficiency: N/A  
Efficacy: 107.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 59.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9789  
Total Harmonic Distortion (THDi): 0.074  
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			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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	59	59	59	53
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51	53	52	51	46
2	91	83	78	73	84	78	73	68	67	63	60	57	54	52	47	45	44	47	45	44	39
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	42	40	38	42	40	38	34
4	76	66	58	52	70	61	55	49	53	48	44	45	42	38	38	35	33	38	35	33	30
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29	35	32	29	26
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	28	26	32	28	26	23
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23	29	26	23	21
8	56	44	36	31	52	41	34	29	36	31	27	31	27	24	27	24	21	27	24	21	19
9	52	40	33	28	48	38	31	26	33	28	24	29	25	22	25	22	19	25	22	19	17
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	17	23	20	17	16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1903	1903	1903
5°	1904	1871	1884
10°	1884	1833	1822
15°	1857	1771	1727
20°	1822	1687	1610
25°	1785	1592	1497
30°	1737	1495	1354
35°	1689	1391	1229
40°	1641	1283	1085
45°	1585	1164	955
50°	1526	1044	828
55°	1466	915	706
60°	1395	781	580
65°	1314	645	522
70°	1215	518	471
75°	1091	454	428
80°	912	377	369
85°	619	246	274

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1585 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	156.5	2.4
10°-20°	429.5	6.7
20°-30°	603.0	9.4
30°-40°	657.4	10.2
40°-50°	604.2	9.4
50°-60°	474.5	7.4
60°-70°	308.9	4.8
70°-80°	159.0	2.5
80°-90°	42.4	0.7
90°-100°	33.7	0.5
100°-110°	125.7	2.0
110°-120°	333.3	5.2
120°-130°	552.9	8.6
130°-140°	587.3	9.1
140°-150°	545.8	8.5
150°-160°	438.8	6.8
160°-170°	282.8	4.4
170°-180°	97.3	1.5
0°-30°	1189.0	18.5
0°-40°	1846.4	28.7
0°-60°	2925.1	45.5
0°-90°	3435.3	53.4
90°-120°	492.7	7.7
90°-150°	2178.7	33.9
90°-180°	2998.0	46.6
0°-180°	6432.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1670	1670	1670	1670	1670	
5°	1670	1662	1642	1656	1651	158
15°	1588	1571	1520	1491	1476	447
25°	1441	1393	1293	1231	1209	663
35°	1242	1165	1032	937	903	777
45°	1015	914	756	648	612	784
55°	772	654	491	400	372	690
65°	521	399	263	212	207	517
75°	278	172	121	110	109	294
85°	65	33	29	29	29	75
90°	1	9	15	19	20	6
95°	48	24	29	33	32	57
105°	225	247	45	53	56	240
115°	425	438	456	114	61	419
125°	602	611	625	630	633	536
135°	744	756	763	770	769	575
145°	863	863	875	880	877	540
155°	951	944	953	957	952	438
165°	1002	997	1000	1005	1000	283
175°	1025	1020	1021	1026	1019	98
180°	1022	1022	1022	1022	1022	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1669.5	1669.5	1669.5	1669.5	1669.5
2.5°	1677.1	1669.5	1652.8	1668.1	1665.0
5°	1669.5	1661.9	1642.2	1655.9	1651.4
7.5°	1655.9	1646.9	1625.8	1631.6	1624.2
10°	1637.8	1627.2	1597.0	1592.4	1583.5
12.5°	1615.2	1601.5	1560.6	1551.7	1535.0
15°	1587.9	1571.2	1519.9	1491.3	1476.2
17.5°	1556.2	1532.0	1468.4	1435.3	1411.1
20°	1519.9	1489.7	1414.1	1376.4	1343.1
22.5°	1480.7	1445.9	1358.2	1306.9	1284.3
25°	1441.4	1393.0	1293.2	1231.4	1208.6
27.5°	1394.6	1343.1	1232.8	1161.9	1127.0
30°	1344.7	1287.2	1166.3	1089.3	1048.5
32.5°	1296.4	1226.8	1103.0	1012.3	974.4
35°	1242.0	1164.9	1032.0	936.8	903.4
37.5°	1189.1	1105.9	965.4	861.1	823.4
40°	1133.2	1042.6	896.0	788.7	749.4
42.5°	1075.7	979.1	826.5	714.6	676.9
45°	1015.3	914.0	755.5	648.1	611.9
47.5°	958.0	850.7	687.5	580.2	546.9
50°	894.4	787.2	621.0	516.6	485.0
52.5°	832.4	719.1	557.5	457.8	429.1
55°	772.0	654.2	491.0	400.4	371.7
57.5°	710.1	589.3	432.1	347.5	323.4
60°	646.6	525.7	370.1	293.2	269.0
62.5°	584.8	463.9	317.2	244.8	232.8
65°	521.3	398.8	262.9	211.6	206.9
67.5°	460.9	338.4	211.6	185.8	181.3
70°	397.4	279.5	175.2	160.2	154.0
72.5°	337.0	225.1	146.5	134.5	131.5
75°	277.9	172.2	120.9	110.3	108.9
77.5°	219.1	122.3	95.2	89.2	86.0
80°	164.6	87.7	72.4	66.6	66.6
82.5°	114.8	59.0	49.9	46.8	46.8
85°	64.9	33.2	28.7	28.7	28.7
87.5°	24.2	12.0	12.0	10.6	10.6
90°	0.7	8.9	14.7	18.6	19.9
92.5°	18.6	15.6	17.8	19.3	19.9
95°	48.1	23.6	28.8	32.6	31.8
97.5°	86.5	26.0	37.7	40.0	40.7
100°	131.0	29.6	42.2	48.1	49.6
102.5°	179.8	178.3	43.6	51.7	54.0
105°	224.9	247.1	45.1	53.2	56.2
107.5°	277.4	295.9	46.7	54.7	57.8
110°	327.8	343.3	129.5	55.5	58.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	375.2	388.4	375.9	57.0	59.2
115°	425.4	438.0	456.5	113.9	60.7
117.5°	469.1	483.8	496.4	390.6	196.8
120°	517.9	529.0	542.3	551.2	451.3
122.5°	559.3	571.2	586.0	590.4	591.2
125°	601.5	611.1	625.2	630.4	632.6
127.5°	640.0	650.3	661.5	668.8	669.5
130°	676.2	688.1	696.2	704.3	703.7
132.5°	713.2	722.9	730.9	737.6	736.9
135°	744.3	756.2	762.8	770.2	768.7
137.5°	776.8	785.7	793.1	800.5	798.3
140°	808.6	814.6	822.6	829.3	825.7
142.5°	835.4	840.5	850.1	856.0	852.3
145°	863.4	862.6	875.3	880.4	876.7
147.5°	887.8	885.6	898.2	901.8	898.9
150°	911.5	906.4	918.2	922.5	918.9
152.5°	931.4	925.5	936.7	941.1	935.9
155°	950.7	944.1	952.9	957.4	951.5
157.5°	966.2	960.4	967.0	972.2	966.2
160°	979.6	975.1	979.6	984.0	978.8
162.5°	991.4	986.9	990.7	995.8	989.2
165°	1001.7	997.3	999.6	1004.7	999.6
167.5°	1009.9	1005.4	1007.6	1012.9	1006.2
170°	1016.5	1012.1	1013.6	1018.8	1012.1
172.5°	1021.0	1016.5	1018.0	1023.2	1016.5
175°	1024.6	1019.5	1021.0	1026.1	1018.8
177.5°	1026.1	1021.0	1021.8	1026.9	1020.3
180°	1022.5	1022.5	1022.5	1022.5	1022.5



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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	9.66	10.52	10.60	11.47	12.69	5.62	6.48	6.56	7.43	8.65
	3H	11.34	12.10	12.28	13.06	14.31	6.81	7.57	7.75	8.53	9.78
	4H	11.94	12.67	12.90	13.63	14.89	7.25	7.98	8.21	8.94	10.20
	6H	12.36	13.03	13.33	14.00	15.27	7.57	8.24	8.54	9.20	10.47
	8H	12.49	13.12	13.47	14.11	15.37	7.66	8.29	8.64	9.28	10.54
	12H	12.55	13.15	13.53	14.13	15.42	7.70	8.30	8.68	9.28	10.57
4H	2H	9.68	10.41	10.65	11.37	12.62	6.22	6.94	7.18	7.90	9.16
	3H	11.51	12.11	12.48	13.10	14.37	7.56	8.17	8.54	9.16	10.43
	4H	12.20	12.75	13.18	13.73	15.03	8.11	8.66	9.09	9.64	10.94
	6H	12.71	13.18	13.71	14.19	15.48	8.52	9.00	9.52	10.00	11.30
	8H	12.88	13.32	13.88	14.33	15.63	8.65	9.09	9.65	10.09	11.40
	12H	12.98	13.37	13.99	14.39	15.70	8.71	9.11	9.73	10.13	11.44
8H	4H	12.17	12.61	13.16	13.61	14.92	8.39	8.83	9.39	9.83	11.14
	6H	12.73	13.09	13.75	14.13	15.44	8.90	9.26	9.92	10.31	11.61
	8H	12.94	13.26	13.97	14.29	15.62	9.09	9.41	10.12	10.44	11.76
	12H	13.08	13.36	14.11	14.38	15.75	9.20	9.48	10.23	10.51	11.88
12H	4H	12.12	12.52	13.13	13.53	14.85	8.39	8.79	9.41	9.81	11.12
	6H	12.70	13.02	13.73	14.05	15.38	8.95	9.27	9.98	10.30	11.62
	8H	12.92	13.20	13.95	14.23	15.60	9.15	9.44	10.19	10.46	11.83