

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: P918571

Luminaire Tested: DFN2DIP-4P3F0-030D040US935-FLONL

Issue Date: 11/21/2024

**Test Information**

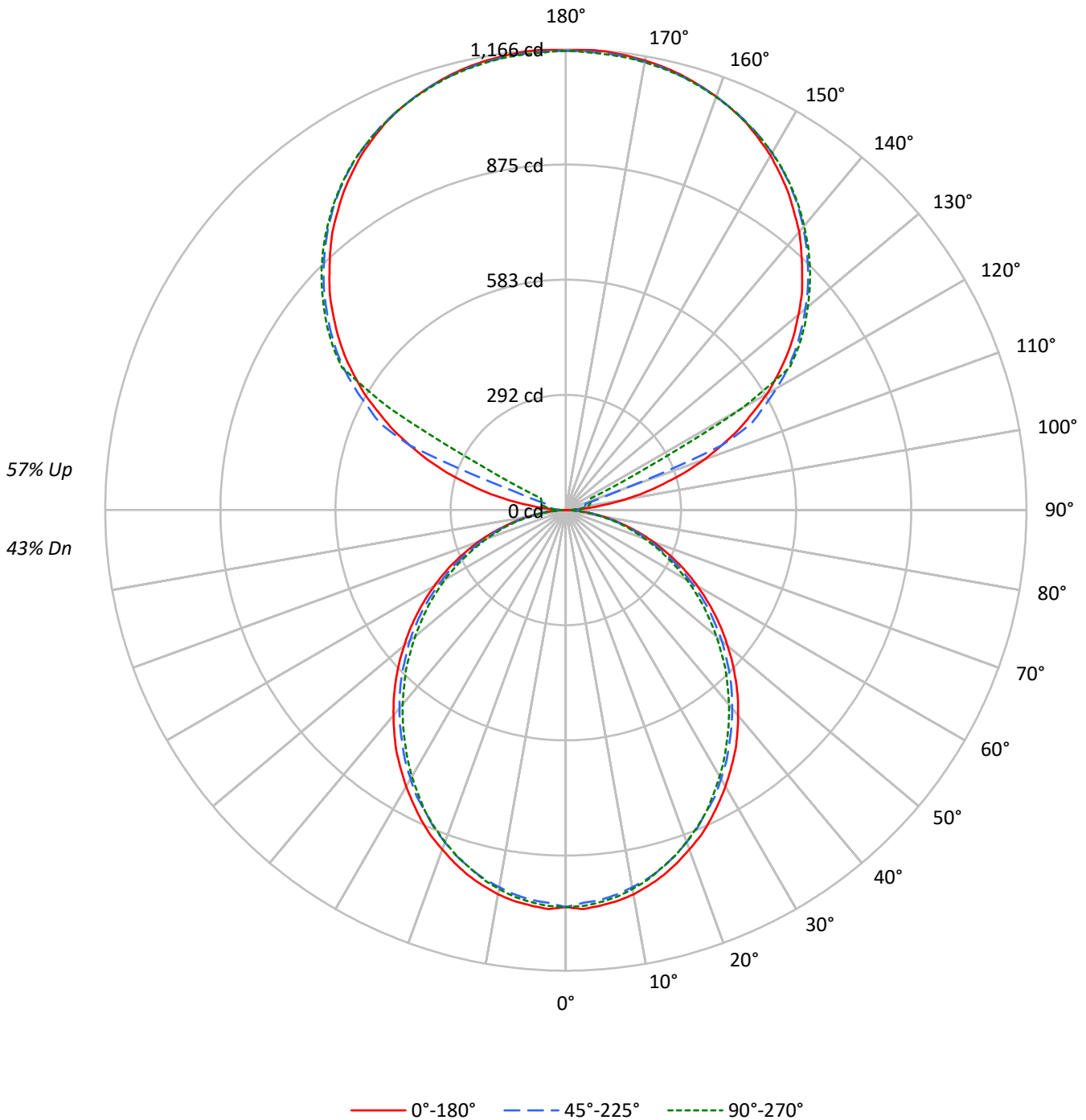
Test Method: LM-79-2019  
Report Number: P918571  
REPORT IS A COMBINATION OF REPORTS P900571 AND P897473  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-4P3F0-030D040US935-FLLONL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5966.7 lumens  
Efficiency: N/A  
Efficacy: 107.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 55.7  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9933  
Total Harmonic Distortion (THDi): 0.066  
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				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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	50	50	50	43			43
1	96	92	88	85	88	84	81	78	70	67	65	56	55	53	44	43	42	36			36
2	88	80	74	69	80	74	68	64	61	57	54	49	47	44	39	37	35	30			30
3	80	71	63	58	73	65	58	53	54	49	45	44	40	38	34	32	30	26			26
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	31	28	26	22			22
5	67	56	48	42	61	51	44	39	43	37	33	35	31	28	28	25	23	19			19
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20	17			17
7	57	45	37	32	52	41	34	29	35	29	25	29	25	22	23	20	18	15			15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16	13			13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	12			12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13	11			11

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

	0°	45°	90°
0°	1145	1145	1145
5°	1146	1129	1137
10°	1136	1113	1121
15°	1119	1094	1096
20°	1096	1067	1071
25°	1073	1036	1043
30°	1044	1007	1006
35°	1016	973	968
40°	983	938	931
45°	949	904	893
50°	912	867	849
55°	874	825	809
60°	830	775	763
65°	782	724	709
70°	721	661	651
75°	637	585	596
80°	536	488	493
85°	377	323	322

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 949 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.6	1.6
10°-20°	266.2	4.5
20°-30°	391.1	6.6
30°-40°	454.3	7.6
40°-50°	453.7	7.6
50°-60°	395.6	6.6
60°-70°	292.5	4.9
70°-80°	165.5	2.8
80°-90°	45.7	0.8
90°-100°	38.3	0.6
100°-110°	142.9	2.4
110°-120°	378.9	6.4
120°-130°	628.5	10.5
130°-140°	667.6	11.2
140°-150°	620.4	10.4
150°-160°	498.8	8.4
160°-170°	321.4	5.4
170°-180°	110.6	1.9
0°-30°	751.9	12.6
0°-40°	1206.2	20.2
0°-60°	2055.6	34.5
0°-90°	2559.2	42.9
90°-120°	560.1	9.4
90°-150°	2476.6	41.5
90°-180°	3407.0	57.1
0°-180°	5966.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1005	1005	1005	1005	1005	
5°	1005	1001	991	998	996	95
15°	957	951	938	942	938	269
25°	866	858	842	844	842	398
35°	747	737	722	716	711	467
45°	608	601	587	576	572	469
55°	460	454	443	431	426	411
65°	310	304	295	286	281	307
75°	162	160	156	150	152	173
85°	40	39	38	35	34	44
90°	1	10	17	21	23	5
95°	55	27	33	37	36	65
105°	256	281	51	60	64	273
115°	484	498	519	130	69	476
125°	684	695	711	717	719	610
135°	846	860	867	876	874	654
145°	982	981	995	1001	997	614
155°	1081	1073	1083	1088	1082	498
165°	1139	1134	1136	1142	1136	322
175°	1165	1159	1161	1166	1158	111
180°	1162	1162	1162	1162	1162	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1005.0	1005.0	1005.0	1005.0	1005.0
2.5°	1010.9	1006.1	995.4	1005.0	1003.2
5°	1005.0	1001.3	990.6	998.3	996.4
7.5°	998.3	992.6	981.9	989.7	987.7
10°	987.7	980.9	969.4	977.1	974.2
12.5°	973.2	967.4	955.9	960.6	958.7
15°	956.7	951.1	938.4	942.3	937.5
17.5°	936.4	930.7	918.1	922.9	918.1
20°	914.2	908.4	894.9	897.8	894.0
22.5°	892.1	883.4	870.7	870.7	868.7
25°	865.9	858.2	841.8	843.7	841.8
27.5°	836.9	830.1	817.6	814.8	809.9
30°	808.0	800.2	785.7	782.8	778.9
32.5°	777.1	771.3	755.8	749.9	746.1
35°	747.1	737.4	721.9	716.1	711.3
37.5°	713.3	704.6	689.1	682.3	677.4
40°	678.5	670.7	655.2	646.6	642.7
42.5°	644.6	636.9	621.5	611.7	606.0
45°	608.0	601.1	586.6	576.0	572.1
47.5°	572.1	565.4	549.9	539.2	533.5
50°	534.4	529.6	516.1	502.6	497.7
52.5°	497.7	490.9	478.5	467.8	461.0
55°	460.1	454.3	442.6	431.1	426.3
57.5°	422.3	417.5	404.9	393.3	389.4
60°	384.6	380.8	367.3	356.6	353.8
62.5°	347.9	341.1	331.5	321.8	318.0
65°	310.3	304.4	294.8	286.1	281.3
67.5°	271.6	266.7	258.0	251.3	247.5
70°	235.8	232.0	223.3	216.5	212.7
72.5°	199.1	195.2	190.4	183.7	180.8
75°	162.3	160.5	155.6	149.8	151.8
77.5°	129.5	125.6	123.6	120.8	118.0
80°	96.7	95.7	93.7	90.8	88.9
82.5°	65.7	65.7	64.8	60.9	60.9
85°	39.6	38.7	37.7	34.8	33.8
87.5°	17.4	15.5	13.5	10.7	9.6
90°	0.8	10.1	16.8	21.1	22.6
92.5°	21.1	17.7	20.1	21.9	22.6
95°	54.6	26.9	32.7	37.0	36.2
97.5°	98.4	29.4	42.9	45.5	46.2
100°	148.9	33.7	48.0	54.6	56.3
102.5°	204.3	202.8	49.6	58.8	61.4
105°	255.6	280.9	51.3	60.5	63.9
107.5°	315.4	336.4	53.0	62.3	65.6
110°	372.6	390.2	147.2	63.1	66.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	426.5	441.5	427.2	64.7	67.3
115°	483.5	497.8	518.9	129.5	69.1
117.5°	533.2	550.0	564.4	444.0	223.7
120°	588.8	601.3	616.5	626.6	513.1
122.5°	635.8	649.3	666.2	671.1	672.0
125°	683.7	694.7	710.7	716.6	719.1
127.5°	727.5	739.3	751.9	760.3	761.1
130°	768.7	782.2	791.3	800.6	799.9
132.5°	810.7	821.7	830.9	838.5	837.8
135°	846.1	859.6	867.1	875.5	873.9
137.5°	883.0	893.1	901.6	910.0	907.5
140°	919.2	926.0	935.2	942.8	938.6
142.5°	949.6	955.4	966.4	973.0	968.9
145°	981.5	980.7	994.9	1000.8	996.6
147.5°	1009.2	1006.7	1021.0	1025.2	1021.9
150°	1036.1	1030.3	1043.8	1048.8	1044.6
152.5°	1058.9	1052.1	1064.7	1069.8	1063.9
155°	1080.7	1073.2	1083.3	1088.3	1081.6
157.5°	1098.4	1091.7	1099.3	1105.2	1098.4
160°	1113.5	1108.4	1113.5	1118.5	1112.7
162.5°	1127.0	1122.0	1126.2	1132.0	1124.5
165°	1138.8	1133.8	1136.3	1142.1	1136.3
167.5°	1148.1	1142.9	1145.6	1151.4	1143.8
170°	1155.6	1150.6	1152.2	1158.1	1150.6
172.5°	1160.6	1155.6	1157.4	1163.2	1155.6
175°	1164.8	1158.9	1160.6	1166.5	1158.1
177.5°	1166.5	1160.6	1161.5	1167.4	1159.9
180°	1162.3	1162.3	1162.3	1162.3	1162.3



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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	7.01	7.82	8.03	8.84	10.21	6.57	7.37	7.59	8.40	9.77
	3H	8.67	9.38	9.69	10.42	11.81	8.18	8.89	9.20	9.93	11.32
	4H	9.25	9.93	10.29	10.97	12.36	8.75	9.44	9.79	10.47	11.87
	6H	9.64	10.27	10.69	11.31	12.72	9.14	9.77	10.19	10.81	12.22
	8H	9.74	10.34	10.80	11.40	12.80	9.24	9.84	10.30	10.90	12.30
	12H	9.79	10.35	10.85	11.41	12.83	9.28	9.85	10.34	10.90	12.32
4H	2H	7.47	8.15	8.51	9.18	10.58	7.11	7.79	8.15	8.83	10.22
	3H	9.32	9.89	10.37	10.95	12.36	8.91	9.48	9.97	10.54	11.95
	4H	10.03	10.55	11.09	11.60	13.04	9.60	10.13	10.66	11.18	12.61
	6H	10.54	10.98	11.60	12.06	13.49	10.10	10.55	11.17	11.63	13.06
	8H	10.68	11.10	11.75	12.17	13.61	10.25	10.66	11.31	11.73	13.18
	12H	10.75	11.13	11.84	12.21	13.66	10.30	10.68	11.39	11.76	13.21
8H	4H	10.22	10.63	11.29	11.70	13.15	9.84	10.26	10.91	11.33	12.77
	6H	10.84	11.18	11.93	12.30	13.74	10.46	10.80	11.55	11.91	13.35
	8H	11.06	11.36	12.15	12.45	13.91	10.66	10.97	11.76	12.06	13.52
	12H	11.18	11.45	12.28	12.54	14.04	10.77	11.04	11.87	12.13	13.63
12H	4H	10.20	10.58	11.28	11.66	13.11	9.83	10.21	10.92	11.29	12.74
	6H	10.87	11.17	11.97	12.27	13.72	10.49	10.80	11.59	11.89	13.35
	8H	11.10	11.37	12.20	12.46	13.96	10.72	10.99	11.82	12.08	13.58