

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: P921301

Luminaire Tested: DFN2DIP-4P3F0-030D040US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921301
REPORT IS A COMBINATION OF REPORTS P900572 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D040US940-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

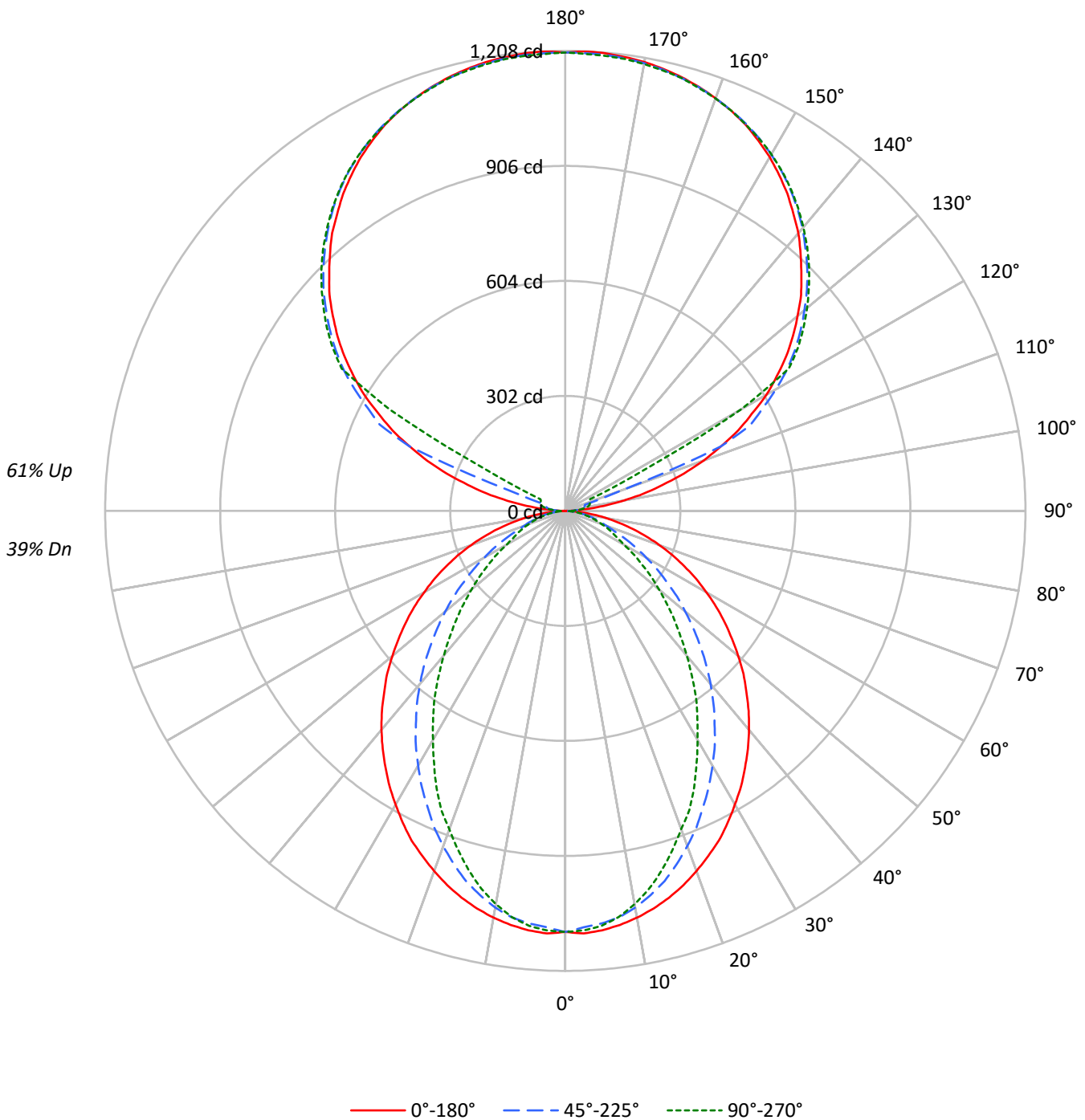
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5805.0 lumens
Efficiency: N/A
Efficacy: 104.2 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: Semi-Indirect

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	95	95	95	95	77	77	77	61	61	61	46	46	46	39				39
1	96	92	88	85	87	83	80	78	68	66	64	54	53	52	41	41	40	34				34
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34	29				29
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29	25				25
4	73	63	55	50	67	58	51	46	48	43	39	38	35	32	30	27	26	22				22
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	25	23	19				19
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	25	22	20	17				17
7	57	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18	15				15
8	53	42	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16	14				14
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15	12				12
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13	11				11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1260	1260	1260
5°	1261	1239	1247
10°	1248	1214	1207
15°	1230	1173	1143
20°	1206	1117	1066
25°	1182	1054	991
30°	1150	990	897
35°	1119	921	814
40°	1087	850	719
45°	1050	771	632
50°	1011	691	548
55°	971	606	467
60°	924	517	384
65°	870	427	346
70°	805	343	312
75°	722	301	283
80°	604	250	244
85°	410	163	181

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1050 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.8
10°-20°	284.5	4.9
20°-30°	399.4	6.9
30°-40°	435.3	7.5
40°-50°	400.1	6.9
50°-60°	314.2	5.4
60°-70°	204.5	3.5
70°-80°	105.3	1.8
80°-90°	29.0	0.5
90°-100°	39.7	0.7
100°-110°	148.0	2.5
110°-120°	392.4	6.8
120°-130°	650.9	11.2
130°-140°	691.4	11.9
140°-150°	642.6	11.1
150°-160°	516.6	8.9
160°-170°	332.9	5.7
170°-180°	114.6	2.0
0°-30°	787.5	13.6
0°-40°	1222.8	21.1
0°-60°	1937.2	33.4
0°-90°	2276.0	39.2
90°-120°	580.1	10.0
90°-150°	2565.0	44.2
90°-180°	3529.0	60.8
0°-180°	5805.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1106	1106	1106	1106	1106	
5°	1106	1101	1088	1097	1094	105
15°	1052	1040	1007	988	978	296
25°	955	922	856	816	800	439
35°	822	771	683	620	598	515
45°	672	605	500	429	405	519
55°	511	433	325	265	246	457
65°	345	264	174	140	137	342
75°	184	114	80	73	72	195
85°	43	22	19	19	19	49
90°	1	10	17	22	24	5
95°	56	28	34	38	38	67
105°	265	291	53	63	66	283
115°	501	516	537	134	72	493
125°	708	720	736	742	745	632
135°	876	890	898	907	905	677
145°	1016	1016	1030	1036	1032	636
155°	1119	1112	1122	1127	1120	516
165°	1179	1174	1177	1183	1177	333
175°	1206	1200	1202	1208	1199	115
180°	1204	1204	1204	1204	1204	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1105.6	1105.6	1105.6	1105.6	1105.6
2.5°	1110.6	1105.6	1094.6	1104.7	1102.7
5°	1105.6	1100.6	1087.6	1096.6	1093.6
7.5°	1096.6	1090.7	1076.7	1080.6	1075.6
10°	1084.6	1077.6	1057.7	1054.5	1048.7
12.5°	1069.6	1060.6	1033.6	1027.6	1016.5
15°	1051.6	1040.5	1006.6	987.6	977.6
17.5°	1030.5	1014.6	972.5	950.6	934.5
20°	1006.6	986.5	936.5	911.6	889.5
22.5°	980.6	957.5	899.5	865.5	850.5
25°	954.6	922.5	856.5	815.5	800.4
27.5°	923.5	889.5	816.5	769.5	746.4
30°	890.6	852.5	772.4	721.5	694.4
32.5°	858.4	812.4	730.5	670.4	645.3
35°	822.5	771.4	683.4	620.4	598.3
37.5°	787.5	732.4	639.4	570.2	545.4
40°	750.5	690.5	593.3	522.3	496.3
42.5°	712.4	648.5	547.3	473.2	448.3
45°	672.4	605.3	500.3	429.2	405.2
47.5°	634.4	563.4	455.3	384.1	362.2
50°	592.4	521.3	411.3	342.1	321.2
52.5°	551.3	476.3	369.3	303.2	284.2
55°	511.2	433.2	325.1	265.2	246.2
57.5°	470.3	390.2	286.2	230.2	214.1
60°	428.2	348.2	245.1	194.1	178.2
62.5°	387.3	307.2	210.1	162.1	154.2
65°	345.2	264.1	174.1	140.1	137.1
67.5°	305.2	224.1	140.1	123.1	120.0
70°	263.1	185.1	116.0	106.0	102.0
72.5°	223.1	149.0	97.0	89.1	87.0
75°	184.0	114.0	80.1	73.0	72.1
77.5°	145.1	81.0	63.0	59.0	57.0
80°	109.1	58.1	48.0	44.1	44.1
82.5°	76.0	39.1	33.0	31.0	31.0
85°	43.0	21.9	19.0	19.0	19.0
87.5°	16.1	7.9	7.9	7.0	7.0
90°	0.8	10.4	17.4	21.8	23.5
92.5°	21.8	18.3	20.9	22.6	23.5
95°	56.5	27.8	33.9	38.3	37.5
97.5°	101.9	30.5	44.4	47.1	47.9
100°	154.2	34.9	49.7	56.5	58.3
102.5°	211.6	210.0	51.4	60.9	63.6
105°	264.7	291.0	53.1	62.7	66.2
107.5°	326.6	348.4	54.9	64.5	67.9
110°	385.9	404.1	152.5	65.4	68.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	441.7	457.3	442.5	67.1	69.7
115°	500.8	515.6	537.4	134.1	71.5
117.5°	552.2	569.6	584.5	459.9	231.7
120°	609.8	622.8	638.5	649.0	531.4
122.5°	658.4	672.4	689.9	695.1	696.0
125°	708.1	719.5	736.0	742.2	744.8
127.5°	753.4	765.6	778.7	787.5	788.3
130°	796.1	810.1	819.6	829.2	828.4
132.5°	839.6	851.0	860.6	868.4	867.6
135°	876.3	890.3	898.0	906.8	905.1
137.5°	914.5	925.0	933.8	942.4	939.9
140°	952.0	959.0	968.6	976.4	972.1
142.5°	983.5	989.5	1000.9	1007.7	1003.4
145°	1016.5	1015.7	1030.4	1036.5	1032.2
147.5°	1045.2	1042.6	1057.4	1061.8	1058.4
150°	1073.1	1067.0	1081.0	1086.2	1081.8
152.5°	1096.6	1089.7	1102.7	1108.0	1101.9
155°	1119.3	1111.5	1121.9	1127.1	1120.2
157.5°	1137.6	1130.6	1138.5	1144.6	1137.6
160°	1153.2	1148.0	1153.2	1158.4	1152.4
162.5°	1167.2	1162.0	1166.4	1172.4	1164.6
165°	1179.4	1174.2	1176.8	1182.9	1176.8
167.5°	1189.0	1183.7	1186.4	1192.5	1184.6
170°	1196.9	1191.6	1193.3	1199.4	1191.6
172.5°	1202.0	1196.9	1198.6	1204.7	1196.9
175°	1206.3	1200.2	1202.0	1208.1	1199.4
177.5°	1208.1	1202.0	1202.9	1209.1	1201.2
180°	1203.8	1203.8	1203.8	1203.8	1203.8



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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	6.82	7.57	7.87	8.62	10.04	2.78	3.53	3.83	4.58	6.00
	3H	8.48	9.15	9.54	10.21	11.65	3.96	4.62	5.02	5.68	7.12
	4H	9.09	9.72	10.16	10.78	12.23	4.40	5.03	5.47	6.09	7.54
	6H	9.50	10.08	10.58	11.15	12.61	4.71	5.29	5.79	6.36	7.81
	8H	9.62	10.18	10.71	11.26	12.71	4.79	5.35	5.88	6.43	7.88
	12H	9.68	10.21	10.77	11.28	12.76	4.83	5.36	5.92	6.43	7.91
4H	2H	6.82	7.46	7.90	8.52	9.97	3.36	4.00	4.44	5.06	6.50
	3H	8.64	9.17	9.73	10.26	11.72	4.70	5.23	5.78	6.31	7.77
	4H	9.33	9.81	10.42	10.89	12.37	5.24	5.72	6.33	6.80	8.28
	6H	9.83	10.25	10.93	11.35	12.82	5.65	6.06	6.74	7.16	8.64
	8H	10.00	10.39	11.10	11.49	12.97	5.77	6.16	6.87	7.25	8.74
	12H	10.09	10.44	11.21	11.55	13.04	5.83	6.18	6.94	7.28	8.78
8H	4H	9.29	9.67	10.38	10.77	12.26	5.51	5.89	6.61	6.99	8.48
	6H	9.84	10.16	10.96	11.30	12.79	6.02	6.33	7.14	7.47	8.96
	8H	10.06	10.34	11.18	11.46	12.96	6.20	6.48	7.33	7.60	9.10
	12H	10.19	10.43	11.32	11.55	13.09	6.31	6.56	7.44	7.67	9.21
12H	4H	9.23	9.58	10.35	10.69	12.19	5.51	5.86	6.62	6.97	8.46
	6H	9.82	10.10	10.95	11.22	12.72	6.06	6.34	7.19	7.46	8.97
	8H	10.03	10.28	11.16	11.39	12.94	6.26	6.51	7.39	7.62	9.17