

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: P910345

Luminaire Tested: DFN2DIP-4P2F0-030D040US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910345
REPORT IS A COMBINATION OF REPORTS P900546 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D040US850-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

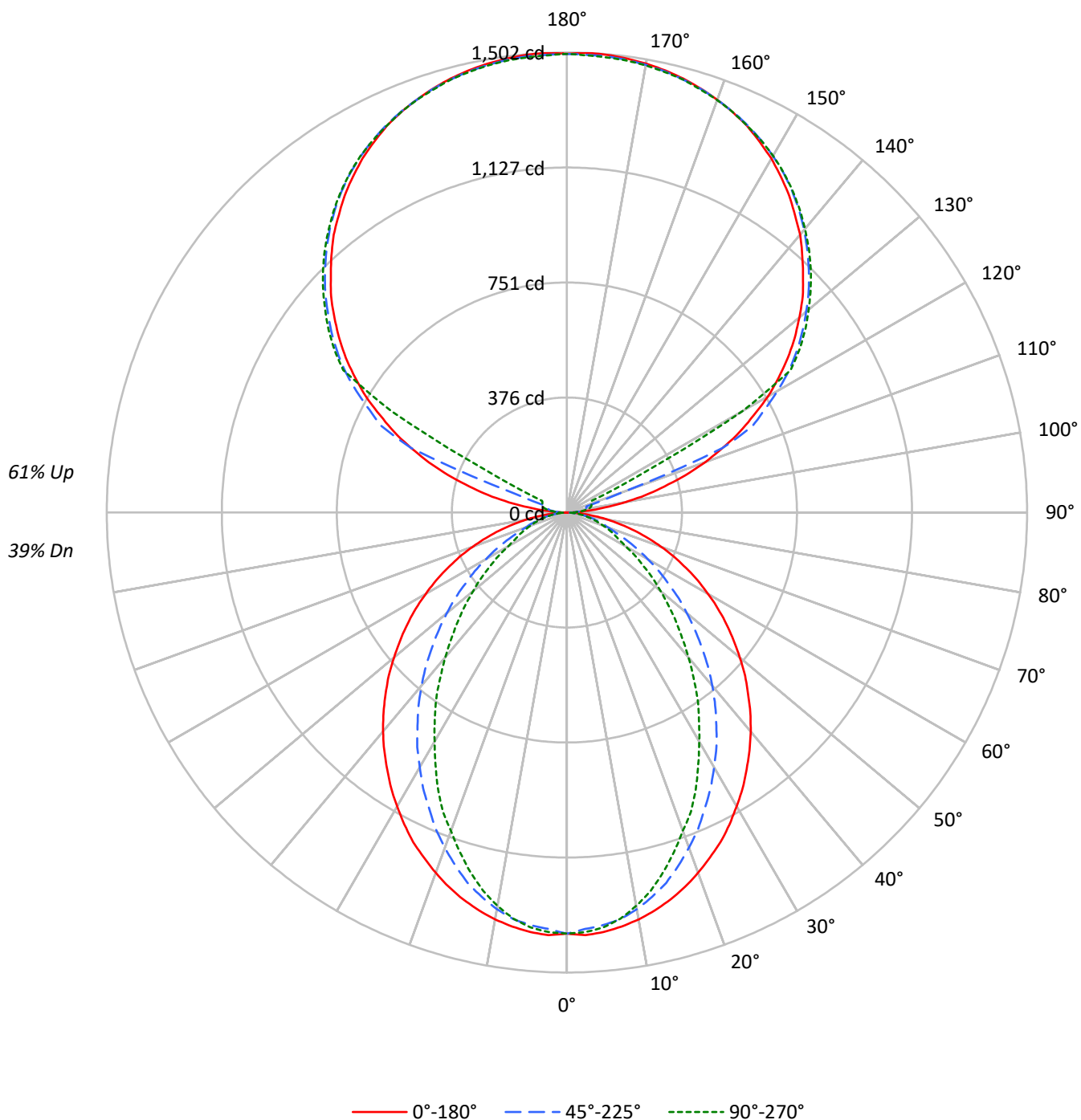
Lumens per Lamp: N/A
Luminaire Lumens: 7219.6 lumens
Efficiency: N/A
Efficacy: 119.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 60.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	52	41	41	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	67	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	25	23
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18
8	53	42	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3443	3443	3443
5°	3442	3380	3404
10°	3401	3305	3288
15°	3347	3187	3112
20°	3278	3028	2897
25°	3208	2852	2690
30°	3116	2672	2429
35°	3025	2480	2200
40°	2932	2281	1939
45°	2825	2063	1702
50°	2714	1843	1472
55°	2597	1608	1251
60°	2461	1366	1024
65°	2305	1119	916
70°	2116	890	820
75°	1877	768	735
80°	1535	621	620
85°	991	381	437

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2825 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	1.8
10°-20°	353.8	4.9
20°-30°	496.7	6.9
30°-40°	541.4	7.5
40°-50°	497.6	6.9
50°-60°	390.8	5.4
60°-70°	254.4	3.5
70°-80°	130.9	1.8
80°-90°	36.1	0.5
90°-100°	49.4	0.7
100°-110°	184.0	2.5
110°-120°	488.1	6.8
120°-130°	809.5	11.2
130°-140°	859.9	11.9
140°-150°	799.2	11.1
150°-160°	642.5	8.9
160°-170°	414.0	5.7
170°-180°	142.5	2.0
0°-30°	979.3	13.6
0°-40°	1520.7	21.1
0°-60°	2409.2	33.4
0°-90°	2830.6	39.2
90°-120°	721.5	10.0
90°-150°	3190.0	44.2
90°-180°	4389.0	60.8
0°-180°	7219.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1375	1375	1375	1375	1375	
5°	1375	1369	1353	1364	1360	130
15°	1308	1294	1252	1228	1216	369
25°	1187	1147	1065	1014	995	546
35°	1023	959	850	772	744	640
45°	836	753	622	534	504	646
55°	636	539	404	330	306	568
65°	429	328	216	174	170	426
75°	229	142	100	91	90	242
85°	54	27	24	24	24	61
90°	1	13	22	27	29	7
95°	70	35	42	48	47	83
105°	329	362	66	78	82	352
115°	623	641	668	167	89	613
125°	881	895	915	923	926	785
135°	1090	1107	1117	1128	1126	842
145°	1264	1263	1281	1289	1284	791
155°	1392	1382	1395	1402	1393	641
165°	1467	1460	1464	1471	1464	414
175°	1500	1493	1495	1502	1492	143
180°	1497	1497	1497	1497	1497	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1375.0	1375.0	1375.0	1375.0	1375.0
2.5°	1381.3	1375.0	1361.3	1373.8	1371.4
5°	1375.0	1368.8	1352.6	1363.8	1360.1
7.5°	1363.8	1356.4	1339.0	1343.9	1337.7
10°	1348.9	1340.2	1315.4	1311.5	1304.2
12.5°	1330.2	1319.0	1285.4	1278.0	1264.3
15°	1307.8	1294.1	1251.8	1228.2	1215.8
17.5°	1281.7	1261.8	1209.5	1182.2	1162.2
20°	1251.8	1226.9	1164.7	1133.7	1106.2
22.5°	1219.6	1190.8	1118.6	1076.4	1057.8
25°	1187.2	1147.3	1065.2	1014.2	995.4
27.5°	1148.6	1106.2	1015.4	957.0	928.2
30°	1107.6	1060.2	960.6	897.3	863.6
32.5°	1067.6	1010.4	908.5	833.7	802.6
35°	1022.9	959.4	849.9	771.5	744.1
37.5°	979.4	910.8	795.2	709.2	678.3
40°	933.3	858.7	737.9	649.5	617.3
42.5°	886.0	806.5	680.7	588.5	557.5
45°	836.3	752.8	622.3	533.8	503.9
47.5°	788.9	700.7	566.3	477.8	450.5
50°	736.7	648.3	511.5	425.5	399.5
52.5°	685.6	592.3	459.2	377.1	353.4
55°	635.8	538.8	404.3	329.8	306.2
57.5°	584.9	485.3	356.0	286.2	266.3
60°	532.5	433.1	304.9	241.4	221.6
62.5°	481.6	382.1	261.3	201.6	191.7
65°	429.3	328.5	216.5	174.2	170.5
67.5°	379.6	278.7	174.2	153.0	149.3
70°	327.3	230.2	144.3	131.9	126.9
72.5°	277.5	185.3	120.7	110.8	108.2
75°	228.9	141.8	99.6	90.8	89.6
77.5°	180.4	100.7	78.4	73.4	70.9
80°	135.6	72.2	59.7	54.8	54.8
82.5°	94.5	48.6	41.0	38.6	38.6
85°	53.5	27.3	23.6	23.6	23.6
87.5°	20.0	9.9	9.9	8.8	8.8
90°	1.0	13.0	21.6	27.2	29.2
92.5°	27.2	22.7	26.0	28.2	29.2
95°	70.3	34.6	42.1	47.7	46.6
97.5°	126.8	37.9	55.2	58.6	59.6
100°	191.7	43.4	61.8	70.3	72.5
102.5°	263.2	261.2	63.9	75.7	79.1
105°	329.3	361.9	66.1	78.0	82.3
107.5°	406.2	433.3	68.3	80.2	84.5
110°	480.0	502.6	189.6	81.3	85.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	549.3	568.7	550.3	83.4	86.7
115°	622.8	641.2	668.4	166.8	88.9
117.5°	686.8	708.4	726.9	571.9	288.1
120°	758.3	774.5	794.0	807.1	660.9
122.5°	818.9	836.3	858.0	864.5	865.6
125°	880.7	894.9	915.4	923.0	926.2
127.5°	937.0	952.2	968.5	979.4	980.4
130°	990.1	1007.5	1019.3	1031.3	1030.3
132.5°	1044.2	1058.4	1070.3	1080.1	1079.1
135°	1089.8	1107.2	1116.9	1127.7	1125.6
137.5°	1137.4	1150.4	1161.3	1172.1	1168.9
140°	1184.0	1192.7	1204.6	1214.4	1208.9
142.5°	1223.1	1230.7	1244.7	1253.3	1248.0
145°	1264.3	1263.2	1281.4	1289.1	1283.7
147.5°	1299.9	1296.6	1315.1	1320.5	1316.3
150°	1334.6	1327.0	1344.4	1350.9	1345.4
152.5°	1363.8	1355.2	1371.4	1377.9	1370.4
155°	1392.0	1382.4	1395.3	1401.8	1393.1
157.5°	1414.8	1406.1	1416.0	1423.5	1414.8
160°	1434.3	1427.7	1434.3	1440.7	1433.2
162.5°	1451.6	1445.1	1450.6	1458.1	1448.4
165°	1466.8	1460.3	1463.5	1471.1	1463.5
167.5°	1478.7	1472.1	1475.5	1483.1	1473.3
170°	1488.5	1482.0	1484.1	1491.7	1482.0
172.5°	1494.9	1488.5	1490.7	1498.3	1488.5
175°	1500.3	1492.7	1494.9	1502.5	1491.7
177.5°	1502.5	1494.9	1496.0	1503.7	1493.9
180°	1497.2	1497.2	1497.2	1497.2	1497.2

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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	10.21	10.96	11.26	12.01	13.43	6.17	6.92	7.22	7.97	9.39
	3H	11.86	12.53	12.92	13.59	15.03	7.33	8.00	8.39	9.06	10.50
	4H	12.45	13.08	13.52	14.14	15.59	7.76	8.40	8.83	9.46	10.90
	6H	12.85	13.43	13.93	14.50	15.95	8.06	8.65	9.14	9.71	11.17
	8H	12.96	13.52	14.05	14.60	16.05	8.14	8.70	9.23	9.78	11.23
	12H	13.01	13.54	14.10	14.61	16.09	8.17	8.70	9.26	9.77	11.25
4H	2H	10.21	10.85	11.29	11.91	13.35	6.74	7.38	7.82	8.44	9.88
	3H	12.01	12.54	13.09	13.62	15.08	8.06	8.59	9.15	9.68	11.14
	4H	12.68	13.16	13.77	14.24	15.72	8.59	9.07	9.68	10.15	11.63
	6H	13.17	13.58	14.27	14.68	16.16	8.98	9.40	10.08	10.50	11.97
	8H	13.33	13.71	14.43	14.81	16.30	9.10	9.48	10.19	10.58	12.07
	12H	13.41	13.76	14.52	14.86	16.36	9.15	9.50	10.26	10.60	12.10
8H	4H	12.64	13.02	13.73	14.12	15.61	8.85	9.24	9.95	10.33	11.82
	6H	13.17	13.49	14.29	14.63	16.11	9.34	9.66	10.46	10.79	12.28
	8H	13.37	13.65	14.50	14.77	16.28	9.51	9.79	10.64	10.91	12.41
	12H	13.49	13.74	14.62	14.85	16.40	9.61	9.86	10.74	10.97	12.51
12H	4H	12.58	12.93	13.70	14.04	15.53	8.85	9.20	9.96	10.30	11.80
	6H	13.15	13.43	14.27	14.54	16.05	9.38	9.66	10.51	10.78	12.28
	8H	13.35	13.59	14.48	14.71	16.25	9.57	9.81	10.70	10.93	12.47

END OF REPORT