

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: P913143

Luminaire Tested: DFN2DIP-4P3F0-040D060US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913143
REPORT IS A COMBINATION OF REPORTS P900593 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D060US927-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

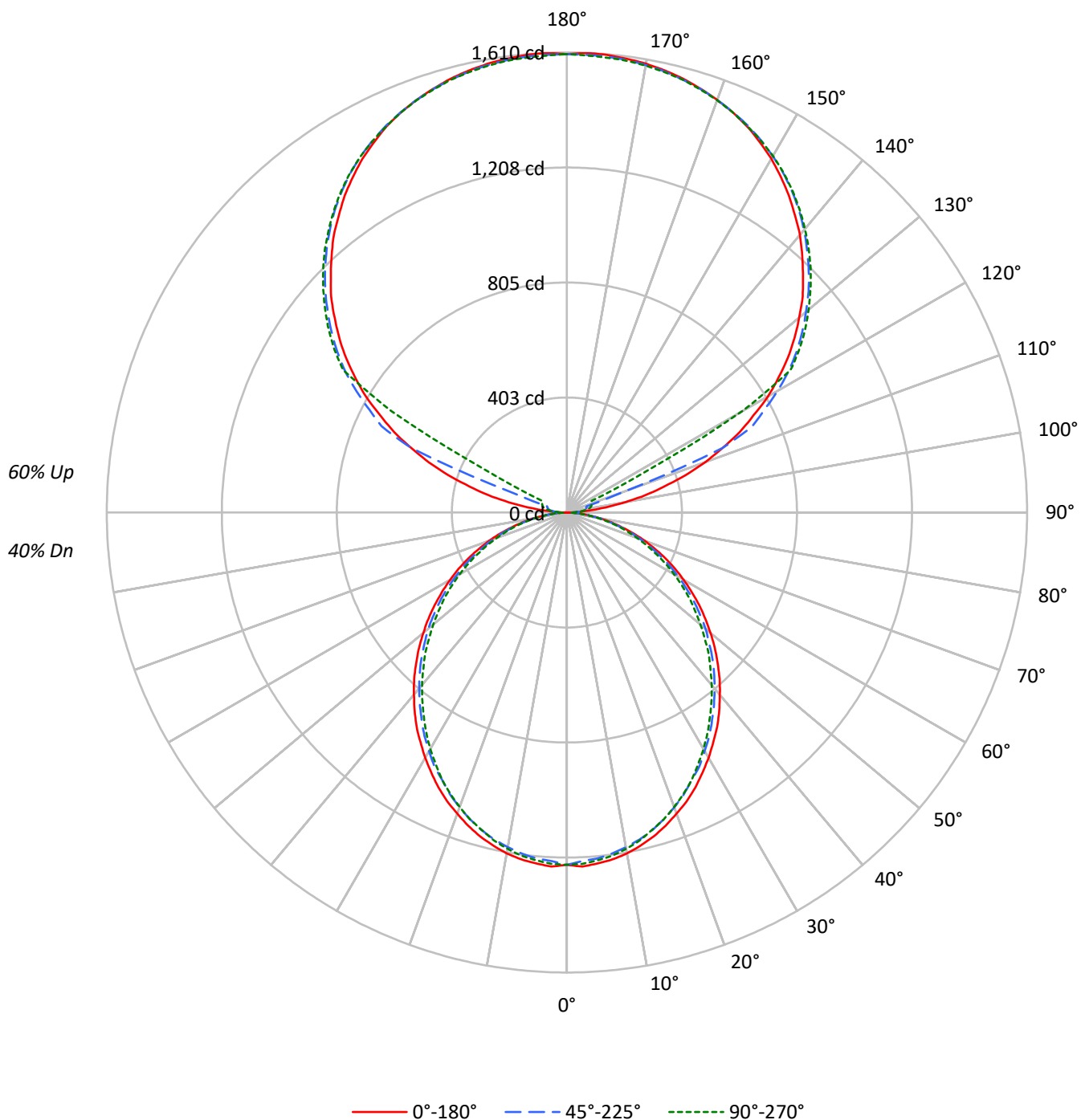
Lumens per Lamp: N/A
Luminaire Lumens: 7842.6 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 84.8
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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	105	105	105	105	95	95	95	95	78	78	78		62	62	62		47
1	96	91	87	84	87	83	80	77	68	66	64		54	53	51		41
2	87	80	74	69	79	73	68	63	60	56	53		48	45	43		37
3	79	70	63	57	72	64	58	53	53	48	44		42	39	36		32
4	73	62	54	48	66	57	50	45	47	42	38		37	34	31		29
5	67	55	47	41	60	50	44	38	42	37	33		34	30	27		26
6	61	49	41	36	56	45	38	33	38	32	28		30	26	23		24
7	57	45	37	31	51	41	34	29	34	29	25		28	24	21		22
8	52	40	33	27	48	37	30	26	31	26	22		25	21	18		20
9	49	37	29	24	44	34	27	23	28	23	20		23	19	17		18
10	46	34	27	22	41	31	25	20	26	21	18		21	18	15		17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1405	1405	1405
5°	1406	1385	1394
10°	1394	1365	1375
15°	1373	1342	1345
20°	1344	1310	1315
25°	1316	1271	1279
30°	1280	1236	1234
35°	1247	1194	1187
40°	1205	1151	1142
45°	1164	1109	1096
50°	1119	1064	1042
55°	1072	1012	993
60°	1018	951	936
65°	959	887	870
70°	885	810	798
75°	782	717	731
80°	657	598	604
85°	463	397	396

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1164 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	1.5
10°-20°	326.5	4.2
20°-30°	479.8	6.1
30°-40°	557.3	7.1
40°-50°	556.6	7.1
50°-60°	485.3	6.2
60°-70°	358.8	4.6
70°-80°	203.0	2.6
80°-90°	56.4	0.7
90°-100°	52.9	0.7
100°-110°	197.2	2.5
110°-120°	523.0	6.7
120°-130°	867.4	11.1
130°-140°	921.3	11.7
140°-150°	856.3	10.9
150°-160°	688.4	8.8
160°-170°	443.6	5.7
170°-180°	152.7	1.9
0°-30°	922.4	11.8
0°-40°	1479.7	18.9
0°-60°	2521.7	32.2
0°-90°	3139.8	40.0
90°-120°	773.0	9.9
90°-150°	3418.0	43.6
90°-180°	4703.0	60.0
0°-180°	7842.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1233	1233	1233	1233	1233	
5°	1233	1228	1215	1225	1222	117
15°	1174	1167	1151	1156	1150	331
25°	1062	1053	1033	1035	1033	489
35°	916	905	886	878	873	572
45°	746	738	720	707	702	576
55°	564	557	543	529	523	505
65°	381	373	362	351	345	376
75°	199	197	191	184	186	213
85°	49	48	46	43	42	54
90°	1	14	23	29	31	7
95°	75	37	45	51	50	89
105°	353	388	71	84	88	377
115°	667	687	716	179	95	657
125°	944	959	981	989	992	842
135°	1168	1186	1197	1208	1206	902
145°	1355	1353	1373	1381	1376	847
155°	1492	1481	1495	1502	1493	687
165°	1572	1565	1568	1576	1568	444
175°	1608	1599	1602	1610	1598	153
180°	1604	1604	1604	1604	1604	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1233.0	1233.0	1233.0	1233.0	1233.0
2.5°	1240.2	1234.2	1221.1	1233.0	1230.7
5°	1233.0	1228.3	1215.2	1224.6	1222.4
7.5°	1224.6	1217.6	1204.5	1214.1	1211.7
10°	1211.7	1203.4	1189.2	1198.6	1195.1
12.5°	1193.8	1186.8	1172.6	1178.5	1176.1
15°	1173.7	1166.6	1151.2	1156.0	1150.1
17.5°	1148.8	1141.8	1126.3	1132.2	1126.3
20°	1121.5	1114.4	1097.9	1101.4	1096.8
22.5°	1094.3	1083.6	1068.2	1068.2	1065.8
25°	1062.2	1052.8	1032.7	1035.0	1032.7
27.5°	1026.7	1018.3	1003.1	999.5	993.6
30°	991.2	981.7	963.9	960.4	955.6
32.5°	953.2	946.2	927.2	920.0	915.2
35°	916.5	904.7	885.7	878.5	872.6
37.5°	875.0	864.3	845.3	837.0	831.1
40°	832.3	822.8	803.7	793.2	788.5
42.5°	790.8	781.2	762.4	750.4	743.4
45°	745.8	737.5	719.6	706.7	701.9
47.5°	701.9	693.6	674.6	661.6	654.5
50°	655.6	649.7	633.1	616.5	610.5
52.5°	610.5	602.3	586.9	573.9	565.5
55°	564.4	557.2	543.0	528.8	522.9
57.5°	518.1	512.2	496.7	482.5	477.8
60°	471.8	467.1	450.6	437.5	434.0
62.5°	426.8	418.5	406.7	394.8	390.1
65°	380.6	373.4	361.6	350.9	345.1
67.5°	333.2	327.2	316.6	308.3	303.6
70°	289.3	284.6	273.9	265.5	260.9
72.5°	244.3	239.5	233.6	225.3	221.7
75°	199.2	196.9	190.8	183.8	186.2
77.5°	158.8	154.1	151.7	148.1	144.7
80°	118.6	117.3	114.9	111.5	109.1
82.5°	80.6	80.6	79.5	74.7	74.7
85°	48.6	47.5	46.3	42.6	41.5
87.5°	21.4	19.0	16.6	13.1	11.8
90°	1.1	13.9	23.1	29.1	31.3
92.5°	29.1	24.4	27.8	30.2	31.3
95°	75.4	37.1	45.2	51.2	49.9
97.5°	135.8	40.6	59.1	62.7	63.8
100°	205.5	46.4	66.1	75.4	77.7
102.5°	282.0	279.8	68.5	81.2	84.8
105°	352.8	387.7	70.8	83.5	88.2
107.5°	435.3	464.2	73.2	85.9	90.5
110°	514.3	538.5	203.2	87.1	91.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	588.5	609.3	589.6	89.3	92.9
115°	667.4	687.1	716.2	178.8	95.2
117.5°	735.9	759.1	778.9	612.8	308.7
120°	812.5	829.9	850.9	864.7	708.1
122.5°	877.4	896.0	919.3	926.2	927.5
125°	943.6	958.8	980.8	989.0	992.4
127.5°	1004.0	1020.3	1037.8	1049.3	1050.4
130°	1060.9	1079.5	1092.2	1105.0	1103.9
132.5°	1119.0	1134.1	1146.8	1157.2	1156.1
135°	1167.8	1186.4	1196.7	1208.4	1206.0
137.5°	1218.7	1232.6	1244.4	1255.9	1252.5
140°	1268.6	1278.0	1290.7	1301.2	1295.4
142.5°	1310.5	1318.7	1333.7	1342.9	1337.1
145°	1354.6	1353.4	1373.1	1381.2	1375.5
147.5°	1392.8	1389.3	1409.1	1414.8	1410.3
150°	1430.0	1421.9	1440.5	1447.4	1441.6
152.5°	1461.3	1452.1	1469.4	1476.5	1468.3
155°	1491.5	1481.1	1495.1	1502.0	1492.7
157.5°	1515.9	1506.6	1517.1	1525.3	1515.9
160°	1536.8	1529.8	1536.8	1543.7	1535.6
162.5°	1555.3	1548.4	1554.2	1562.3	1551.9
165°	1571.6	1564.7	1568.1	1576.3	1568.1
167.5°	1584.4	1577.4	1581.0	1589.1	1578.6
170°	1594.9	1587.8	1590.2	1598.3	1587.8
172.5°	1601.8	1594.9	1597.2	1605.4	1594.9
175°	1607.6	1599.4	1601.8	1609.9	1598.3
177.5°	1609.9	1601.8	1603.0	1611.1	1600.7
180°	1604.1	1604.1	1604.1	1604.1	1604.1

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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	7.42	8.20	8.46	9.25	10.65	6.98	7.76	8.02	8.80	10.21
	3H	9.07	9.77	10.12	10.82	12.25	8.58	9.28	9.63	10.33	11.76
	4H	9.65	10.32	10.71	11.37	12.80	9.16	9.82	10.22	10.88	12.31
	6H	10.05	10.65	11.12	11.71	13.16	9.55	10.15	10.62	11.21	12.66
	8H	10.15	10.73	11.22	11.80	13.24	9.64	10.22	10.72	11.30	12.74
	12H	10.19	10.74	11.27	11.81	13.27	9.68	10.23	10.76	11.30	12.76
4H	2H	7.87	8.53	8.94	9.59	11.02	7.51	8.18	8.58	9.23	10.66
	3H	9.72	10.28	10.80	11.36	12.80	9.32	9.87	10.39	10.95	12.40
	4H	10.43	10.94	11.51	12.01	13.48	10.01	10.51	11.09	11.59	13.05
	6H	10.94	11.37	12.02	12.47	13.93	10.50	10.94	11.59	12.04	13.50
	8H	11.08	11.49	12.17	12.58	14.05	10.64	11.05	11.73	12.14	13.62
	12H	11.15	11.52	12.25	12.62	14.10	10.70	11.07	11.81	12.17	13.65
8H	4H	10.62	11.02	11.70	12.11	13.59	10.24	10.64	11.33	11.73	13.21
	6H	11.24	11.57	12.35	12.70	14.18	10.85	11.19	11.96	12.32	13.79
	8H	11.45	11.75	12.57	12.86	14.35	11.06	11.36	12.18	12.47	13.96
	12H	11.58	11.84	12.70	12.95	14.48	11.17	11.43	12.29	12.54	14.07
12H	4H	10.60	10.96	11.70	12.07	13.55	10.23	10.60	11.33	11.70	13.18
	6H	11.27	11.56	12.38	12.67	14.17	10.89	11.19	12.01	12.30	13.79
	8H	11.50	11.76	12.62	12.87	14.40	11.12	11.38	12.24	12.49	14.02

END OF REPORT