

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: P913158

Luminaire Tested: DFN2DIP-4P3F0-050D050US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913158
REPORT IS A COMBINATION OF REPORTS P899065 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D050US927-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

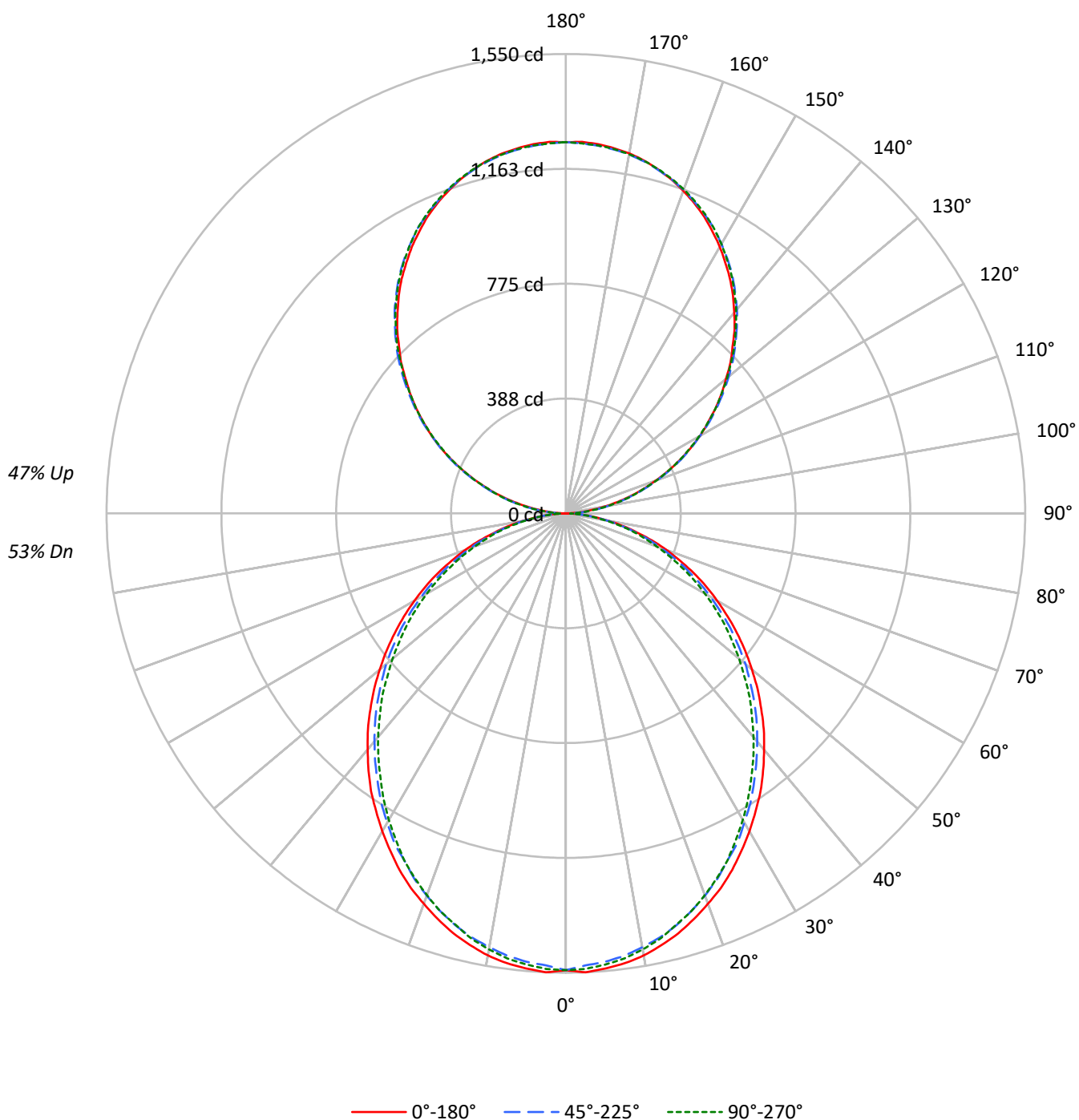
Lumens per Lamp: N/A
Luminaire Lumens: 7426.7 lumens
Efficiency: N/A
Efficacy: 85.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 87
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1756	1756	1756
5°	1758	1731	1743
10°	1743	1706	1719
15°	1716	1677	1681
20°	1680	1637	1643
25°	1645	1589	1599
30°	1600	1544	1543
35°	1558	1492	1484
40°	1507	1439	1427
45°	1455	1386	1369
50°	1399	1330	1303
55°	1339	1265	1241
60°	1273	1189	1170
65°	1199	1109	1087
70°	1106	1013	997
75°	977	896	914
80°	822	748	755
85°	579	495	495

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1455 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.1	2.0
10°-20°	408.1	5.5
20°-30°	599.8	8.1
30°-40°	696.6	9.4
40°-50°	695.8	9.4
50°-60°	606.7	8.2
60°-70°	448.5	6.0
70°-80°	253.7	3.4
80°-90°	70.5	0.9
90°-100°	77.5	1.0
100°-110°	246.3	3.3
110°-120°	421.5	5.7
120°-130°	554.3	7.5
130°-140°	622.2	8.4
140°-150°	610.1	8.2
150°-160°	511.8	6.9
160°-170°	339.4	4.6
170°-180°	118.6	1.6
0°-30°	1153.0	15.5
0°-40°	1849.6	24.9
0°-60°	3152.1	42.4
0°-90°	3924.8	52.8
90°-120°	745.3	10.0
90°-150°	2532.0	34.1
90°-180°	3502.0	47.2
0°-180°	7426.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1541	1541	1541	1541	1541	
5°	1541	1535	1519	1531	1528	146
15°	1467	1458	1439	1445	1438	413
25°	1328	1316	1291	1294	1291	611
35°	1146	1131	1107	1098	1091	715
45°	932	922	900	883	877	719
55°	706	697	679	661	654	631
65°	476	467	452	439	431	470
75°	249	246	238	230	233	266
85°	61	59	58	53	52	68
90°	1	14	37	35	36	7
95°	55	66	68	68	66	61
105°	227	230	233	234	234	240
115°	423	429	427	426	423	418
125°	615	625	622	618	617	550
135°	796	807	810	809	806	615
145°	966	974	980	981	977	604
155°	1105	1108	1111	1116	1113	508
165°	1202	1201	1201	1208	1203	339
175°	1250	1247	1245	1253	1246	119
180°	1253	1253	1253	1253	1253	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1541.2	1541.2	1541.2	1541.2	1541.2
2.5°	1550.1	1542.8	1526.5	1541.2	1538.4
5°	1541.2	1535.4	1519.0	1530.8	1528.0
7.5°	1530.8	1522.0	1505.7	1517.7	1514.7
10°	1514.7	1504.3	1486.5	1498.3	1493.9
12.5°	1492.3	1483.5	1465.8	1473.1	1470.1
15°	1467.1	1458.3	1439.0	1445.0	1437.6
17.5°	1436.0	1427.2	1407.9	1415.2	1407.9
20°	1401.9	1393.1	1372.4	1376.7	1370.9
22.5°	1367.9	1354.6	1335.2	1335.2	1332.2
25°	1327.9	1316.1	1290.9	1293.7	1290.9
27.5°	1283.3	1273.0	1253.8	1249.3	1242.0
30°	1239.0	1227.1	1204.9	1200.5	1194.5
32.5°	1191.5	1182.7	1159.0	1150.0	1144.1
35°	1145.6	1130.8	1107.1	1098.1	1090.8
37.5°	1093.7	1080.4	1056.6	1046.2	1038.9
40°	1040.5	1028.5	1004.7	991.5	985.6
42.5°	988.6	976.6	953.0	938.0	929.2
45°	932.2	921.9	899.5	883.4	877.3
47.5°	877.3	867.0	843.3	826.9	818.1
50°	819.5	812.1	791.4	770.6	763.2
52.5°	763.2	752.8	733.6	717.3	706.9
55°	705.5	696.6	678.7	661.0	653.6
57.5°	647.6	640.2	620.9	603.2	597.1
60°	589.8	584.0	563.2	546.8	542.5
62.5°	533.5	523.2	508.3	493.5	487.6
65°	475.8	466.8	452.0	438.7	431.3
67.5°	416.5	409.0	395.8	385.4	379.4
70°	361.6	355.7	342.3	331.9	326.1
72.5°	305.4	299.4	292.0	281.6	277.2
75°	248.9	246.1	238.5	229.7	232.7
77.5°	198.6	192.6	189.6	185.2	180.9
80°	148.3	146.7	143.7	139.3	136.3
82.5°	100.8	100.8	99.3	93.4	93.4
85°	60.7	59.3	57.8	53.3	51.9
87.5°	26.7	23.8	20.8	16.3	14.8
90°	1.1	13.6	37.0	34.8	35.9
92.5°	23.4	31.7	32.9	34.0	34.0
95°	55.1	65.8	67.6	67.6	65.8
97.5°	91.7	101.6	105.8	105.8	105.8
100°	134.0	142.8	145.8	145.8	144.7
102.5°	178.6	185.1	189.2	190.4	189.2
105°	227.4	230.4	232.7	234.5	234.5
107.5°	275.7	280.2	280.2	281.0	275.7
110°	322.5	328.6	328.6	328.6	325.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	373.1	379.5	378.4	375.4	373.1
115°	422.9	429.0	427.1	426.0	422.9
117.5°	472.5	480.8	475.5	472.5	469.4
120°	522.3	530.6	522.3	522.3	518.9
122.5°	567.6	578.2	572.9	569.9	567.6
125°	615.2	624.6	621.6	618.2	617.1
127.5°	661.6	673.4	669.2	664.6	661.6
130°	705.1	718.7	716.8	714.5	710.3
132.5°	753.8	764.4	765.2	759.9	756.8
135°	795.7	807.4	809.7	808.6	805.6
137.5°	842.6	852.0	853.9	853.1	848.6
140°	883.7	893.2	898.4	898.4	894.3
142.5°	926.0	935.5	938.5	939.6	935.5
145°	966.1	973.6	979.6	980.8	976.6
147.5°	1002.0	1011.4	1015.9	1017.8	1013.6
150°	1038.9	1045.4	1049.5	1052.9	1049.5
152.5°	1071.8	1078.2	1083.5	1087.7	1083.5
155°	1104.6	1107.6	1111.0	1116.3	1112.9
157.5°	1133.0	1135.2	1137.1	1144.7	1139.4
160°	1158.2	1160.5	1161.7	1168.1	1163.6
162.5°	1181.7	1181.7	1182.8	1190.0	1184.7
165°	1201.7	1200.6	1200.6	1208.2	1202.8
167.5°	1219.8	1216.4	1216.4	1224.0	1218.7
170°	1233.4	1230.4	1229.3	1236.8	1230.4
172.5°	1242.9	1239.8	1238.7	1246.3	1239.8
175°	1250.5	1247.4	1245.2	1252.7	1246.3
177.5°	1254.6	1251.6	1249.3	1255.7	1249.3
180°	1252.7	1252.7	1252.7	1252.7	1252.7

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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	9.45	10.34	10.39	11.29	12.52	9.01	9.90	9.94	10.85	12.08
	3H	11.11	11.91	12.05	12.87	14.12	10.62	11.42	11.57	12.38	13.63
	4H	11.70	12.45	12.66	13.41	14.68	11.20	11.96	12.16	12.92	14.18
	6H	12.10	12.79	13.06	13.76	15.03	11.60	12.29	12.56	13.26	14.53
	8H	12.20	12.86	13.17	13.85	15.12	11.70	12.36	12.67	13.34	14.62
	12H	12.25	12.88	13.23	13.86	15.15	11.74	12.37	12.72	13.35	14.64
4H	2H	9.91	10.67	10.88	11.63	12.89	9.56	10.31	10.52	11.28	12.54
	3H	11.78	12.41	12.75	13.40	14.68	11.37	12.00	12.34	12.99	14.27
	4H	12.49	13.06	13.47	14.05	15.35	12.06	12.64	13.05	13.63	14.93
	6H	13.00	13.50	14.00	14.51	15.80	12.57	13.06	13.56	14.07	15.37
	8H	13.15	13.61	14.15	14.62	15.93	12.71	13.17	13.71	14.18	15.49
	12H	13.22	13.64	14.24	14.66	15.98	12.77	13.19	13.79	14.21	15.53
8H	4H	12.68	13.15	13.68	14.15	15.46	12.31	12.77	13.30	13.77	15.09
	6H	13.31	13.69	14.33	14.74	16.05	12.93	13.31	13.95	14.35	15.66
	8H	13.53	13.86	14.56	14.90	16.23	13.13	13.47	14.16	14.50	15.83
	12H	13.66	13.95	14.69	14.98	16.35	13.25	13.54	14.28	14.57	15.94
12H	4H	12.67	13.09	13.68	14.11	15.42	12.30	12.72	13.32	13.74	15.06
	6H	13.34	13.68	14.37	14.71	16.04	12.97	13.30	13.99	14.34	15.66
	8H	13.58	13.87	14.61	14.90	16.27	13.20	13.49	14.23	14.52	15.89