

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: P908603

Luminaire Tested: DFN2DIP-PN4F0-040D040US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908603
REPORT IS A COMBINATION OF REPORTS P901130 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D040US840-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

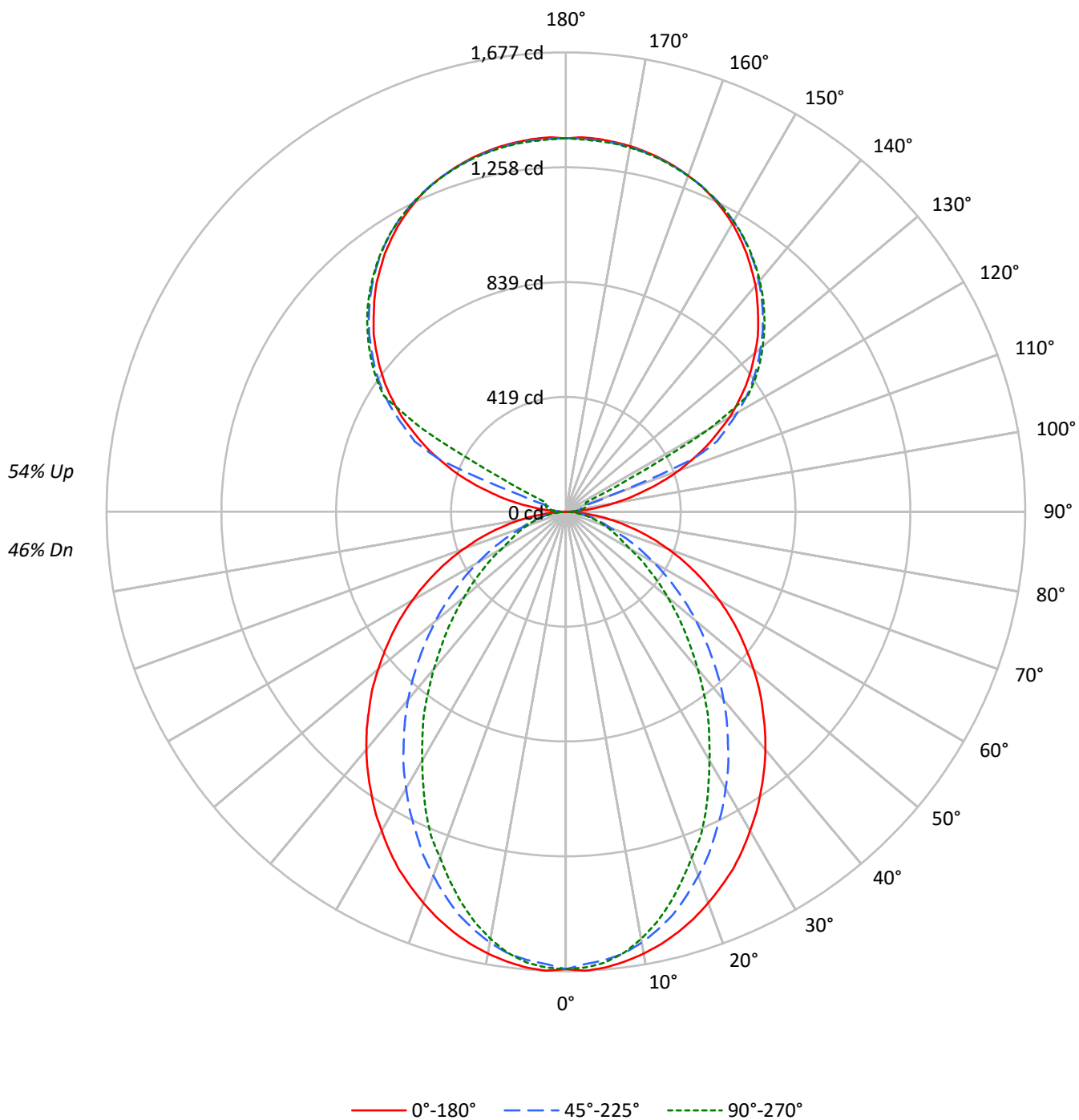
Lumens per Lamp: N/A
Luminaire Lumens: 7432.6 lumens
Efficiency: N/A
Efficacy: 116.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 63.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1219	1219	1219
5°	1221	1199	1207
10°	1209	1176	1168
15°	1192	1137	1108
20°	1170	1084	1033
25°	1147	1024	961
30°	1117	963	870
35°	1087	897	790
40°	1057	828	698
45°	1022	752	615
50°	986	676	534
55°	948	594	456
60°	904	508	375
65°	854	421	338
70°	793	340	306
75°	716	300	279
80°	605	252	243
85°	421	169	184

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1022 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	2.1
10°-20°	429.5	5.8
20°-30°	603.0	8.1
30°-40°	657.4	8.8
40°-50°	604.2	8.1
50°-60°	474.5	6.4
60°-70°	308.9	4.2
70°-80°	159.0	2.1
80°-90°	43.0	0.6
90°-100°	44.9	0.6
100°-110°	167.6	2.3
110°-120°	444.4	6.0
120°-130°	737.1	9.9
130°-140°	783.0	10.5
140°-150°	727.7	9.8
150°-160°	585.1	7.9
160°-170°	377.0	5.1
170°-180°	129.8	1.7
0°-30°	1189.0	16.0
0°-40°	1846.4	24.8
0°-60°	2925.1	39.4
0°-90°	3435.9	46.2
90°-120°	656.9	8.8
90°-150°	2904.8	39.1
90°-180°	3997.0	53.8
0°-180°	7432.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1670	1670	1670	1670	1670	
5°	1670	1662	1642	1656	1651	158
15°	1588	1571	1520	1491	1476	447
25°	1441	1393	1293	1231	1209	663
35°	1242	1165	1032	937	903	777
45°	1015	914	756	648	612	784
55°	772	654	491	400	372	690
65°	521	399	263	212	207	517
75°	278	172	121	110	109	294
85°	65	33	29	29	29	75
90°	1	12	20	25	27	7
95°	64	32	38	43	42	76
105°	300	330	60	71	75	320
115°	567	584	609	152	81	558
125°	802	815	834	840	843	715
135°	992	1008	1017	1027	1025	767
145°	1151	1150	1167	1174	1169	720
155°	1268	1259	1271	1276	1269	584
165°	1336	1330	1333	1340	1333	377
175°	1366	1359	1361	1368	1358	130
180°	1363	1363	1363	1363	1363	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1669.5	1669.5	1669.5	1669.5	1669.5
2.5°	1677.1	1669.5	1652.8	1668.1	1665.0
5°	1669.5	1661.9	1642.2	1655.9	1651.4
7.5°	1655.9	1646.9	1625.8	1631.6	1624.2
10°	1637.8	1627.2	1597.0	1592.4	1583.5
12.5°	1615.2	1601.5	1560.6	1551.7	1535.0
15°	1587.9	1571.2	1519.9	1491.3	1476.2
17.5°	1556.2	1532.0	1468.4	1435.3	1411.1
20°	1519.9	1489.7	1414.1	1376.4	1343.1
22.5°	1480.7	1445.9	1358.2	1306.9	1284.3
25°	1441.4	1393.0	1293.2	1231.4	1208.6
27.5°	1394.6	1343.1	1232.8	1161.9	1127.0
30°	1344.7	1287.2	1166.3	1089.3	1048.5
32.5°	1296.4	1226.8	1103.0	1012.3	974.4
35°	1242.0	1164.9	1032.0	936.8	903.4
37.5°	1189.1	1105.9	965.4	861.1	823.4
40°	1133.2	1042.6	896.0	788.7	749.4
42.5°	1075.7	979.1	826.5	714.6	676.9
45°	1015.3	914.0	755.5	648.1	611.9
47.5°	958.0	850.7	687.5	580.2	546.9
50°	894.4	787.2	621.0	516.6	485.0
52.5°	832.4	719.1	557.5	457.8	429.1
55°	772.0	654.2	491.0	400.4	371.7
57.5°	710.1	589.3	432.1	347.5	323.4
60°	646.6	525.7	370.1	293.2	269.0
62.5°	584.8	463.9	317.2	244.8	232.8
65°	521.3	398.8	262.9	211.6	206.9
67.5°	460.9	338.4	211.6	185.8	181.3
70°	397.4	279.5	175.2	160.2	154.0
72.5°	337.0	225.1	146.5	134.5	131.5
75°	277.9	172.2	120.9	110.3	108.9
77.5°	219.1	122.3	95.2	89.2	86.0
80°	164.6	87.7	72.4	66.6	66.6
82.5°	114.8	59.0	49.9	46.8	46.8
85°	64.9	33.2	28.7	28.7	28.7
87.5°	24.2	12.0	12.0	10.6	10.6
90°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.7	26.6
95°	64.0	31.5	38.4	43.4	42.4
97.5°	115.4	34.5	50.3	53.3	54.2
100°	174.6	39.5	56.2	64.0	66.0
102.5°	239.6	237.8	58.2	69.0	72.0
105°	299.8	329.5	60.2	71.0	74.9
107.5°	369.9	394.6	62.2	73.0	77.0
110°	437.1	457.7	172.7	74.0	77.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.9	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	662.0	520.8	262.4
120°	690.5	705.3	723.1	735.0	601.8
122.5°	745.7	761.5	781.3	787.2	788.2
125°	801.9	814.9	833.5	840.5	843.4
127.5°	853.2	867.1	881.9	891.8	892.7
130°	901.6	917.5	928.2	939.1	938.2
132.5°	950.9	963.8	974.6	983.5	982.6
135°	992.4	1008.2	1017.0	1026.9	1025.0
137.5°	1035.7	1047.5	1057.5	1067.3	1064.4
140°	1078.1	1086.1	1096.9	1105.8	1100.9
142.5°	1113.8	1120.6	1133.5	1141.2	1136.4
145°	1151.2	1150.2	1166.9	1173.9	1168.9
147.5°	1183.7	1180.7	1197.5	1202.4	1198.6
150°	1215.3	1208.4	1224.3	1230.1	1225.2
152.5°	1241.9	1234.1	1248.8	1254.8	1247.9
155°	1267.6	1258.8	1270.6	1276.5	1268.6
157.5°	1288.3	1280.4	1289.4	1296.3	1288.3
160°	1306.1	1300.1	1306.1	1311.9	1305.0
162.5°	1321.8	1316.0	1320.9	1327.8	1318.9
165°	1335.6	1329.8	1332.7	1339.6	1332.7
167.5°	1346.6	1340.5	1343.6	1350.5	1341.6
170°	1355.4	1349.5	1351.4	1358.4	1349.5
172.5°	1361.3	1355.4	1357.5	1364.3	1355.4
175°	1366.1	1359.3	1361.3	1368.2	1358.4
177.5°	1368.2	1361.3	1362.3	1369.3	1360.4
180°	1363.3	1363.3	1363.3	1363.3	1363.3

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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	7.48	8.28	8.47	9.28	10.61	3.44	4.24	4.44	5.25	6.57
	3H	9.16	9.87	10.16	10.88	12.23	4.63	5.35	5.64	6.36	7.70
	4H	9.77	10.44	10.78	11.46	12.81	5.08	5.76	6.10	6.77	8.13
	6H	10.19	10.81	11.22	11.83	13.20	5.40	6.02	6.43	7.04	8.41
	8H	10.31	10.91	11.35	11.94	13.31	5.49	6.08	6.53	7.12	8.48
	12H	10.38	10.94	11.42	11.97	13.36	5.53	6.10	6.57	7.13	8.51
4H	2H	7.49	8.17	8.52	9.18	10.54	4.04	4.71	5.06	5.73	7.08
	3H	9.32	9.89	10.36	10.93	12.30	5.38	5.95	6.42	6.99	8.36
	4H	10.02	10.53	11.06	11.57	12.96	5.93	6.45	6.97	7.48	8.87
	6H	10.53	10.97	11.58	12.03	13.42	6.35	6.79	7.40	7.85	9.24
	8H	10.71	11.12	11.76	12.17	13.57	6.48	6.89	7.53	7.94	9.35
	12H	10.80	11.18	11.87	12.24	13.65	6.55	6.92	7.61	7.98	9.39
8H	4H	9.98	10.39	11.03	11.44	12.85	6.21	6.62	7.26	7.68	9.08
	6H	10.55	10.89	11.62	11.98	13.38	6.73	7.07	7.81	8.16	9.56
	8H	10.77	11.07	11.85	12.14	13.56	6.92	7.22	8.00	8.30	9.72
	12H	10.91	11.17	11.99	12.24	13.70	7.04	7.30	8.13	8.38	9.84
12H	4H	9.93	10.30	11.00	11.37	12.78	6.22	6.59	7.28	7.65	9.06
	6H	10.53	10.82	11.61	11.90	13.32	6.78	7.08	7.86	8.16	9.58
	8H	10.75	11.01	11.83	12.08	13.54	6.99	7.25	8.08	8.33	9.79