

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: P921469

Luminaire Tested: DFN2DIP-4P4F0-070D030US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921469
REPORT IS A COMBINATION OF REPORTS P900608 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-070D030US940-RLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

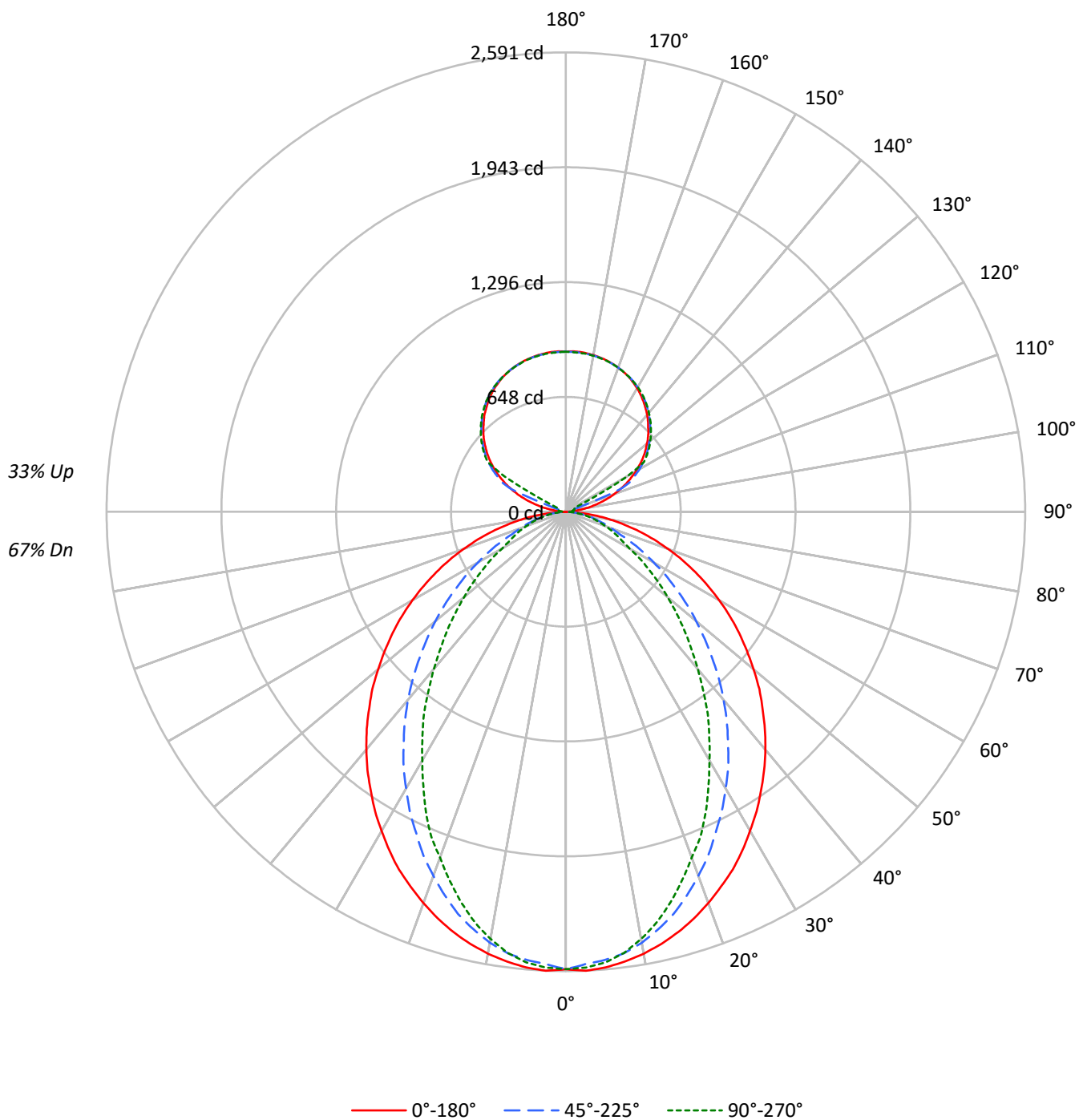
Lumens per Lamp: N/A
Luminaire Lumens: 7954.0 lumens
Efficiency: N/A
Efficacy: 81.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 97.3
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	30	10
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	98	94	91	96	93	89	86	82	80	78	73	71	69	64	63	62
2	94	86	80	75	88	82	76	72	73	69	65	65	62	59	57	55	53
3	86	77	69	64	81	72	66	61	65	60	56	58	54	51	51	48	46
4	79	68	60	54	74	65	58	52	58	53	48	52	48	44	46	43	40
5	73	61	53	47	68	58	51	45	52	47	42	47	42	39	42	38	35
6	67	55	47	41	63	53	45	40	48	42	37	43	38	34	38	35	31
7	62	50	42	37	59	48	41	36	43	37	33	39	34	31	35	31	28
8	58	46	38	33	55	44	37	32	40	34	30	36	31	28	33	29	26
9	54	42	35	30	51	40	33	29	37	31	27	33	29	25	30	26	23
10	51	39	32	27	48	37	31	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1674	1674	1674
5°	1676	1648	1658
10°	1660	1616	1605
15°	1637	1563	1522
20°	1607	1490	1420
25°	1576	1408	1322
30°	1535	1323	1197
35°	1494	1233	1087
40°	1453	1139	961
45°	1405	1035	847
50°	1355	930	735
55°	1304	818	628
60°	1244	700	517
65°	1175	580	466
70°	1091	469	423
75°	986	414	386
80°	834	350	337
85°	583	236	257

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1405 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	3.0
10°-20°	663.7	8.3
20°-30°	931.9	11.7
30°-40°	1015.8	12.8
40°-50°	933.6	11.7
50°-60°	733.2	9.2
60°-70°	477.3	6.0
70°-80°	245.7	3.1
80°-90°	64.3	0.8
90°-100°	29.8	0.4
100°-110°	111.0	1.4
110°-120°	294.3	3.7
120°-130°	488.2	6.1
130°-140°	518.5	6.5
140°-150°	481.9	6.1
150°-160°	387.5	4.9
160°-170°	249.7	3.1
170°-180°	85.9	1.1
0°-30°	1837.4	23.1
0°-40°	2853.2	35.9
0°-60°	4520.0	56.8
0°-90°	5307.2	66.7
90°-120°	435.1	5.5
90°-150°	1923.7	24.2
90°-180°	2647.0	33.3
0°-180°	7954.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	1	8	13	16	18	8
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
90°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9

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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	10.39	11.38	11.20	12.20	13.22	6.35	7.34	7.16	8.16	9.18
	3H	12.09	12.97	12.90	13.80	14.85	7.55	8.44	8.37	9.27	10.31
	4H	12.70	13.54	13.54	14.38	15.43	8.01	8.85	8.85	9.69	10.74
	6H	13.14	13.91	13.99	14.76	15.82	8.34	9.11	9.19	9.96	11.02
	8H	13.27	14.00	14.13	14.87	15.94	8.44	9.17	9.30	10.03	11.10
	12H	13.34	14.04	14.21	14.90	15.99	8.49	9.18	9.35	10.04	11.13
4H	2H	10.43	11.26	11.27	12.10	13.16	6.97	7.80	7.81	8.64	9.70
	3H	12.28	12.97	13.13	13.84	14.91	8.34	9.03	9.19	9.90	10.97
	4H	12.98	13.61	13.84	14.48	15.58	8.89	9.52	9.76	10.39	11.49
	6H	13.51	14.05	14.39	14.95	16.05	9.32	9.86	10.20	10.76	11.86
	8H	13.69	14.20	14.57	15.09	16.20	9.45	9.96	10.34	10.85	11.96
	12H	13.80	14.25	14.70	15.16	16.28	9.53	9.98	10.43	10.89	12.01
8H	4H	12.96	13.47	13.84	14.36	15.47	9.19	9.69	10.07	10.58	11.69
	6H	13.54	13.96	14.45	14.89	16.00	9.71	10.13	10.62	11.06	12.18
	8H	13.76	14.13	14.68	15.06	16.18	9.91	10.28	10.83	11.20	12.33
	12H	13.91	14.24	14.83	15.15	16.33	10.03	10.36	10.96	11.28	12.46
12H	4H	12.92	13.37	13.82	14.28	15.40	9.20	9.65	10.10	10.56	11.68
	6H	13.51	13.88	14.43	14.81	15.94	9.76	10.13	10.68	11.06	12.19
	8H	13.75	14.07	14.67	14.99	16.17	9.98	10.31	10.91	11.23	12.41

END OF REPORT