

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: P915677

Luminaire Tested: DFN2DIP-TR4F0-100D050US927-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915677
REPORT IS A COMBINATION OF REPORTS P901920 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D050US927-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

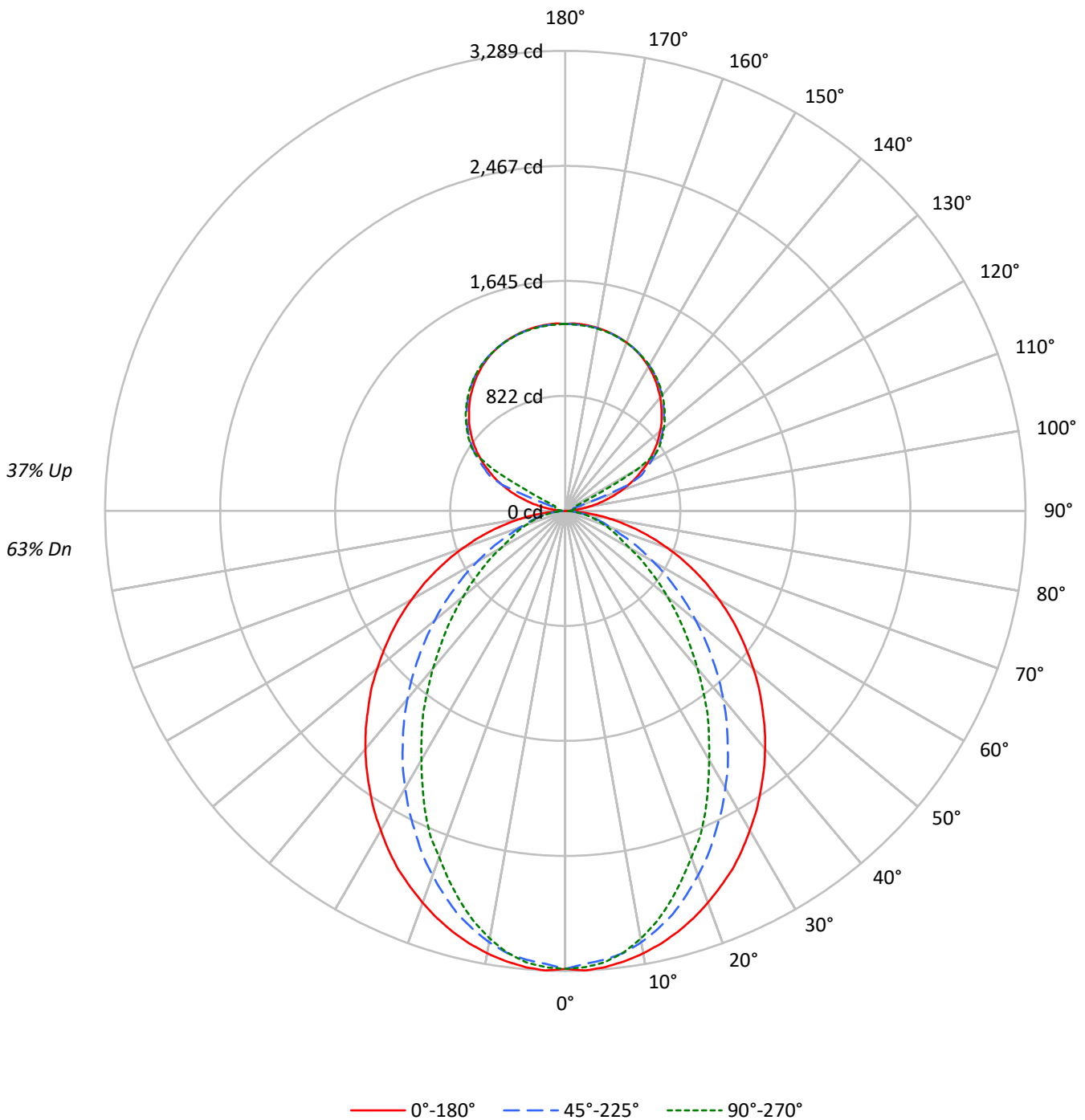
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10654.8 lumens
Efficiency: N/A
Efficacy: 76.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 138.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	68	68	68	63
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59	61	60	59	54
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51	55	52	51	47
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44	49	46	44	40
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38	44	41	38	35
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34	40	37	34	31
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30	37	33	30	27
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27	34	30	27	25
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24	31	27	24	22
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22	29	25	22	20
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20	27	23	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2601	2601	2601
5°	2605	2560	2576
10°	2579	2510	2492
15°	2544	2426	2362
20°	2497	2312	2203
25°	2449	2184	2050
30°	2384	2053	1855
35°	2321	1911	1684
40°	2257	1765	1488
45°	2182	1603	1310
50°	2105	1439	1136
55°	2024	1264	969
60°	1930	1081	798
65°	1823	895	718
70°	1693	722	650
75°	1529	636	591
80°	1292	534	512
85°	900	356	384

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2182 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	306.9	2.9
10°-20°	842.4	7.9
20°-30°	1182.6	11.1
30°-40°	1289.2	12.1
40°-50°	1184.9	11.1
50°-60°	930.5	8.7
60°-70°	605.7	5.7
70°-80°	311.8	2.9
80°-90°	82.0	0.8
90°-100°	44.1	0.4
100°-110°	164.3	1.5
110°-120°	435.8	4.1
120°-130°	722.8	6.8
130°-140°	767.8	7.2
140°-150°	713.6	6.7
150°-160°	573.7	5.4
160°-170°	369.7	3.5
170°-180°	127.2	1.2
0°-30°	2331.9	21.9
0°-40°	3621.0	34.0
0°-60°	5736.5	53.8
0°-90°	6735.9	63.2
90°-120°	644.2	6.0
90°-150°	2848.4	26.7
90°-180°	3919.0	36.8
0°-180°	10654.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3274	3274	3274	3274	3274	
5°	3274	3259	3221	3247	3238	310
15°	3114	3081	2981	2924	2895	878
25°	2827	2732	2536	2415	2370	1300
35°	2436	2284	2024	1837	1772	1524
45°	1991	1792	1482	1271	1200	1538
55°	1514	1283	963	785	729	1353
65°	1022	782	516	415	406	1014
75°	545	338	237	216	213	577
85°	127	65	56	56	56	146
90°	1	12	19	24	26	10
95°	63	31	38	43	42	74
105°	294	323	59	70	74	314
115°	556	573	597	149	79	548
125°	786	799	817	824	827	701
135°	973	989	997	1007	1005	752
145°	1129	1128	1144	1151	1146	706
155°	1243	1234	1246	1252	1244	573
165°	1310	1304	1307	1314	1307	370
175°	1340	1333	1335	1342	1332	127
180°	1337	1337	1337	1337	1337	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3274.1	3274.1	3274.1	3274.1	3274.1
2.5°	3288.8	3274.1	3241.4	3271.2	3265.3
5°	3274.1	3259.3	3220.6	3247.4	3238.5
7.5°	3247.4	3229.7	3188.2	3199.9	3185.1
10°	3211.8	3191.1	3132.0	3122.9	3105.3
12.5°	3167.5	3140.8	3060.6	3043.0	3010.3
15°	3114.1	3081.3	2980.7	2924.5	2894.9
17.5°	3051.8	3004.3	2879.9	2814.8	2767.3
20°	2980.7	2921.3	2773.3	2699.4	2634.0
22.5°	2903.7	2835.5	2663.6	2563.0	2518.7
25°	2826.7	2731.8	2536.2	2414.9	2370.3
27.5°	2734.9	2634.0	2417.7	2278.5	2210.3
30°	2637.2	2524.3	2287.3	2136.4	2056.3
32.5°	2542.3	2405.8	2163.1	1985.2	1911.0
35°	2435.6	2284.5	2023.9	1837.1	1771.7
37.5°	2331.9	2168.8	1893.4	1688.8	1614.9
40°	2222.2	2044.6	1757.0	1546.7	1469.7
42.5°	2109.7	1920.1	1620.9	1401.4	1327.5
45°	1991.1	1792.5	1481.6	1271.0	1199.9
47.5°	1878.7	1668.3	1348.3	1137.7	1072.6
50°	1754.1	1543.8	1217.8	1013.2	951.3
52.5°	1632.4	1410.2	1093.4	897.8	841.5
55°	1513.9	1282.9	962.9	785.3	729.0
57.5°	1392.7	1155.6	847.6	681.5	634.1
60°	1268.1	1031.1	725.9	575.0	527.5
62.5°	1146.8	909.7	622.1	480.1	456.5
65°	1022.3	782.1	515.6	414.9	405.8
67.5°	903.8	663.6	414.9	364.3	355.5
70°	779.3	548.3	343.6	314.0	302.1
72.5°	660.8	441.3	287.3	263.7	257.8
75°	545.1	337.6	237.0	216.3	213.4
77.5°	429.8	239.9	186.7	174.8	168.8
80°	322.8	172.0	142.1	130.5	130.5
82.5°	225.1	115.7	97.8	91.8	91.8
85°	127.3	65.0	56.2	56.2	56.2
87.5°	47.5	23.6	23.6	20.8	20.8
90°	1.0	11.6	19.3	24.2	26.1
92.5°	24.2	20.4	23.2	25.2	26.1
95°	62.8	30.9	37.7	42.6	41.6
97.5°	113.1	33.9	49.3	52.3	53.2
100°	171.3	38.7	55.1	62.8	64.8
102.5°	235.0	233.1	57.1	67.7	70.7
105°	294.1	323.1	59.0	69.6	73.5
107.5°	362.7	386.8	61.0	71.5	75.5
110°	428.6	448.8	169.3	72.6	76.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	490.4	507.8	491.4	74.5	77.4
115°	556.2	572.6	596.8	149.0	79.4
117.5°	613.2	632.6	649.1	510.6	257.3
120°	677.1	691.6	709.0	720.6	590.0
122.5°	731.2	746.7	766.1	771.9	772.9
125°	786.3	799.0	817.4	824.1	827.0
127.5°	836.6	850.2	864.8	874.4	875.4
130°	884.1	899.6	910.1	920.8	920.0
132.5°	932.5	945.1	955.6	964.4	963.5
135°	973.1	988.6	997.2	1007.0	1005.0
137.5°	1015.6	1027.2	1037.0	1046.6	1043.8
140°	1057.2	1065.0	1075.5	1084.3	1079.5
142.5°	1092.1	1098.9	1111.4	1119.1	1114.3
145°	1128.9	1127.8	1144.2	1151.0	1146.2
147.5°	1160.7	1157.8	1174.3	1179.1	1175.3
150°	1191.7	1184.9	1200.4	1206.2	1201.3
152.5°	1217.7	1210.1	1224.6	1230.4	1223.6
155°	1242.9	1234.3	1245.9	1251.6	1244.0
157.5°	1263.2	1255.5	1264.2	1271.1	1263.2
160°	1280.7	1274.9	1280.7	1286.4	1279.7
162.5°	1296.1	1290.4	1295.1	1301.9	1293.2
165°	1309.6	1303.9	1306.8	1313.5	1306.8
167.5°	1320.3	1314.5	1317.5	1324.2	1315.5
170°	1329.0	1323.2	1325.2	1331.9	1323.2
172.5°	1334.8	1329.0	1331.0	1337.8	1329.0
175°	1339.7	1332.8	1334.8	1341.6	1331.9
177.5°	1341.6	1334.8	1335.9	1342.6	1333.9
180°	1336.7	1336.7	1336.7	1336.7	1336.7



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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	11.62	12.57	12.46	13.43	14.50	7.59	8.54	8.43	9.40	10.47
	3H	13.30	14.15	14.16	15.02	16.12	8.79	9.64	9.64	10.51	11.61
	4H	13.92	14.72	14.79	15.59	16.70	9.24	10.05	10.12	10.92	12.03
	6H	14.34	15.08	15.23	15.96	17.09	9.57	10.31	10.46	11.19	12.32
	8H	14.47	15.18	15.36	16.08	17.20	9.67	10.37	10.56	11.27	12.39
	12H	14.54	15.21	15.44	16.10	17.25	9.71	10.38	10.61	11.28	12.42
4H	2H	11.65	12.45	12.52	13.33	14.44	8.20	9.00	9.08	9.88	10.99
	3H	13.49	14.16	14.38	15.06	16.19	9.56	10.23	10.45	11.13	12.26
	4H	14.19	14.79	15.08	15.70	16.85	10.11	10.72	11.01	11.62	12.78
	6H	14.71	15.23	15.62	16.16	17.31	10.54	11.06	11.45	11.99	13.14
	8H	14.88	15.37	15.80	16.29	17.46	10.67	11.16	11.59	12.08	13.25
	12H	14.98	15.42	15.92	16.36	17.54	10.74	11.18	11.68	12.12	13.29
8H	4H	14.16	14.65	15.08	15.57	16.74	10.40	10.89	11.32	11.81	12.98
	6H	14.73	15.14	15.67	16.10	17.26	10.93	11.33	11.87	12.29	13.46
	8H	14.95	15.31	15.90	16.26	17.44	11.12	11.48	12.07	12.43	13.61
	12H	15.09	15.41	16.05	16.35	17.59	11.24	11.56	12.20	12.51	13.74
12H	4H	14.12	14.56	15.05	15.50	16.67	10.41	10.85	11.35	11.79	12.96
	6H	14.71	15.07	15.66	16.02	17.20	10.98	11.33	11.93	12.29	13.47
	8H	14.93	15.25	15.89	16.20	17.43	11.19	11.51	12.15	12.45	13.69