

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: P915439

Luminaire Tested: DFN2DIP-TR3F0-090D050US927-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915439
REPORT IS A COMBINATION OF REPORTS P901832 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D050US927-RLLONL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

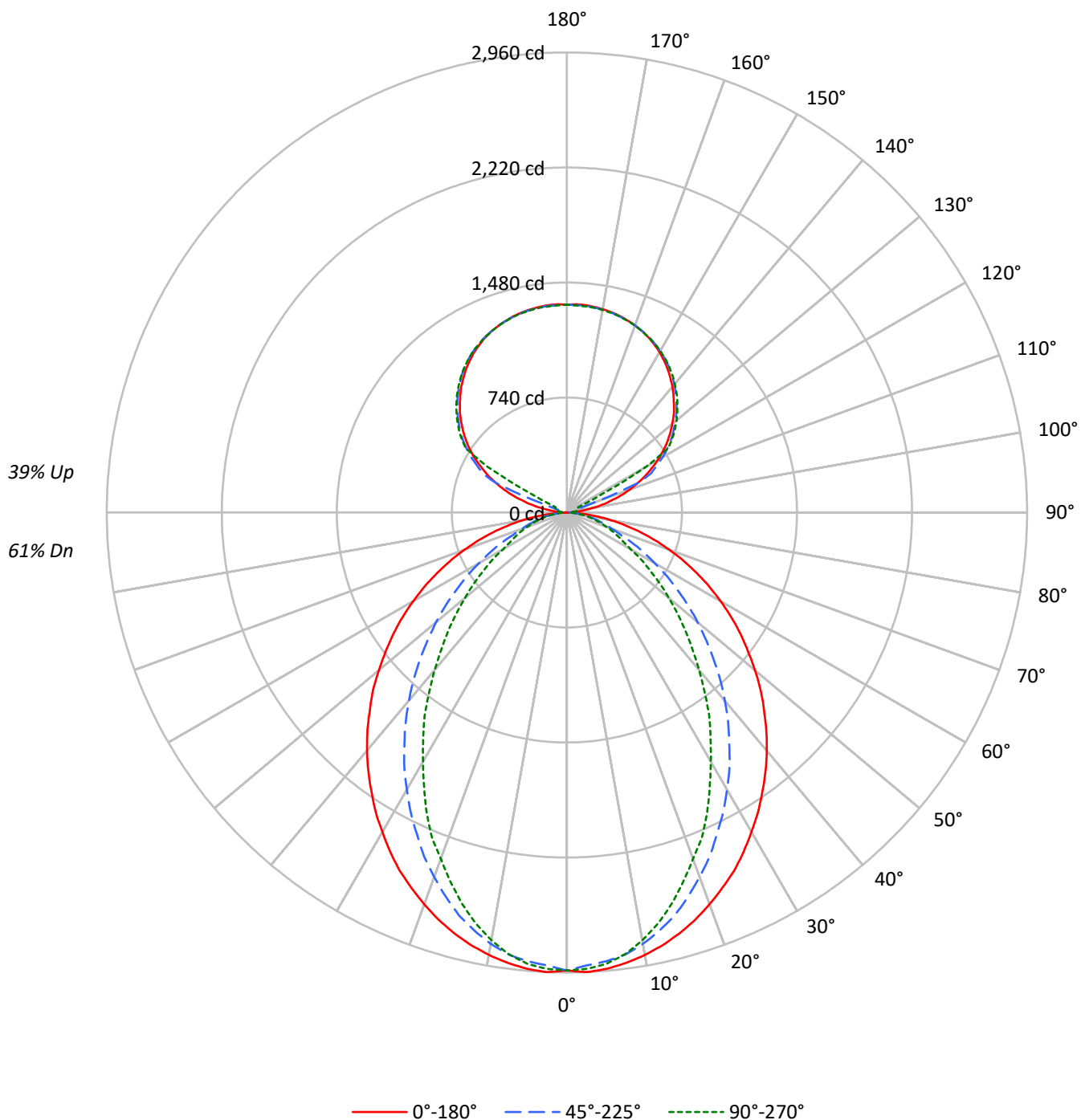
Lumens per Lamp: N/A
Luminaire Lumens: 9981.5 lumens
Efficiency: N/A
Efficacy: 75.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 132
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66
1	101	97	93	90	94	91	87	84	79	77	75	69	67	65	59	58	57
2	92	85	79	74	86	80	75	70	70	66	63	61	58	56	53	51	49
3	85	75	68	62	79	71	65	59	62	58	53	55	51	48	47	45	42
4	78	67	59	53	73	63	56	51	56	50	46	49	45	41	43	40	37
5	72	60	52	46	67	57	50	44	50	45	40	44	40	36	39	35	33
6	66	54	46	41	62	51	44	39	46	40	35	40	36	32	35	32	29
7	61	49	41	36	57	47	39	34	42	36	32	37	32	29	33	29	26
8	57	45	37	32	53	43	36	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	28	35	30	26	31	27	23	28	24	21
10	50	38	31	26	47	36	30	25	33	27	23	29	25	21	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3672	3672	3672
5°	3676	3611	3634
10°	3637	3537	3514
15°	3585	3417	3329
20°	3517	3253	3102
25°	3447	3069	2884
30°	3354	2882	2608
35°	3262	2680	2365
40°	3169	2472	2088
45°	3061	2242	1836
50°	2949	2009	1590
55°	2832	1761	1355
60°	2696	1503	1113
65°	2540	1240	999
70°	2351	995	900
75°	2112	870	814
80°	1768	721	698
85°	1202	466	510

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3061 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.2	2.8
10°-20°	758.1	7.6
20°-30°	1064.4	10.7
30°-40°	1160.3	11.6
40°-50°	1066.4	10.7
50°-60°	837.5	8.4
60°-70°	545.1	5.5
70°-80°	280.6	2.8
80°-90°	74.0	0.7
90°-100°	44.1	0.4
100°-110°	164.3	1.6
110°-120°	435.8	4.4
120°-130°	722.8	7.2
130°-140°	767.8	7.7
140°-150°	713.6	7.1
150°-160°	573.7	5.7
160°-170°	369.7	3.7
170°-180°	127.2	1.3
0°-30°	2098.7	21.0
0°-40°	3258.9	32.6
0°-60°	5162.8	51.7
0°-90°	6062.5	60.7
90°-120°	644.2	6.5
90°-150°	2848.4	28.5
90°-180°	3919.0	39.3
0°-180°	9981.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2947	2947	2947	2947	2947	
5°	2947	2933	2899	2923	2915	279
15°	2803	2773	2683	2632	2606	790
25°	2544	2459	2283	2173	2133	1170
35°	2192	2056	1822	1653	1595	1372
45°	1792	1613	1333	1144	1080	1384
55°	1363	1155	867	707	656	1218
65°	920	704	464	373	365	912
75°	491	304	213	195	192	519
85°	114	58	51	51	51	132
90°	1	12	19	24	26	9
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°	2946.7	2946.7	2946.7	2946.7	2946.7
2.5°	2960.0	2946.7	2917.2	2944.1	2938.8
5°	2946.7	2933.4	2898.6	2922.6	2914.7
7.5°	2922.6	2906.8	2869.4	2879.9	2866.6
10°	2890.7	2872.0	2818.8	2810.6	2794.7
12.5°	2850.7	2826.7	2754.6	2738.7	2709.3
15°	2802.7	2773.3	2682.7	2632.0	2605.5
17.5°	2746.7	2704.0	2591.9	2533.3	2490.6
20°	2682.7	2629.2	2495.9	2429.5	2370.6
22.5°	2613.4	2552.0	2397.2	2306.7	2266.8
25°	2544.1	2458.6	2282.7	2173.4	2133.3
27.5°	2461.5	2370.6	2176.0	2050.6	1989.2
30°	2373.5	2271.9	2058.6	1922.8	1850.6
32.5°	2288.0	2165.2	1946.8	1786.7	1719.9
35°	2192.1	2056.0	1821.5	1653.4	1594.6
37.5°	2098.7	1951.9	1704.1	1519.9	1453.4
40°	2000.0	1840.2	1581.3	1392.0	1322.7
42.5°	1898.7	1728.1	1458.7	1261.3	1194.8
45°	1792.1	1613.3	1333.4	1143.8	1079.9
47.5°	1690.8	1501.5	1213.5	1023.9	965.4
50°	1578.7	1389.4	1096.1	911.9	856.1
52.5°	1469.3	1269.2	984.0	808.0	757.4
55°	1362.6	1154.6	866.6	706.8	656.1
57.5°	1253.4	1040.1	762.8	613.4	570.7
60°	1141.3	928.0	653.3	517.5	474.8
62.5°	1032.1	818.8	559.9	432.1	410.8
65°	920.0	703.9	464.0	373.4	365.3
67.5°	813.4	597.2	373.4	327.9	320.0
70°	701.4	493.4	309.3	282.7	271.9
72.5°	594.7	397.2	258.6	237.3	232.0
75°	490.6	303.9	213.3	194.6	192.1
77.5°	386.7	215.9	168.0	157.3	151.9
80°	290.6	154.8	127.9	117.4	117.4
82.5°	202.6	104.1	88.0	82.6	82.6
85°	114.5	58.5	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
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	12.56	13.49	13.43	14.37	15.48	8.54	9.47	9.41	10.35	11.46
	3H	14.24	15.07	15.12	15.96	17.10	9.73	10.56	10.61	11.45	12.59
	4H	14.84	15.63	15.74	16.52	17.67	10.18	10.96	11.08	11.86	13.01
	6H	15.26	15.98	16.17	16.89	18.05	10.50	11.22	11.41	12.13	13.29
	8H	15.39	16.07	16.30	16.99	18.16	10.59	11.28	11.51	12.20	13.36
	12H	15.45	16.10	16.37	17.02	18.20	10.64	11.29	11.56	12.20	13.39
4H	2H	12.59	13.37	13.49	14.27	15.42	9.14	9.92	10.04	10.82	11.97
	3H	14.42	15.07	15.33	16.00	17.16	10.49	11.14	11.40	12.07	13.24
	4H	15.11	15.70	16.03	16.62	17.81	11.04	11.63	11.96	12.56	13.75
	6H	15.62	16.13	16.55	17.08	18.27	11.46	11.97	12.39	12.92	14.11
	8H	15.79	16.27	16.73	17.21	18.41	11.59	12.06	12.52	13.00	14.21
	12H	15.88	16.31	16.84	17.27	18.48	11.65	12.08	12.61	13.04	14.25
8H	4H	15.08	15.56	16.02	16.50	17.70	11.32	11.80	12.26	12.74	13.94
	6H	15.64	16.03	16.60	17.02	18.22	11.84	12.23	12.80	13.21	14.42
	8H	15.85	16.20	16.82	17.17	18.39	12.02	12.37	12.99	13.34	14.56
	12H	15.99	16.29	16.96	17.26	18.53	12.14	12.45	13.12	13.41	14.68
12H	4H	15.04	15.46	15.99	16.43	17.63	11.33	11.76	12.29	12.72	13.93
	6H	15.61	15.96	16.59	16.94	18.16	11.88	12.23	12.85	13.20	14.42
	8H	15.83	16.14	16.81	17.11	18.38	12.09	12.40	13.07	13.36	14.63