

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: P915509

Luminaire Tested: DFN2DIP-TR4F0-050D080US927-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915509
REPORT IS A COMBINATION OF REPORTS P901964 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D080US927-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

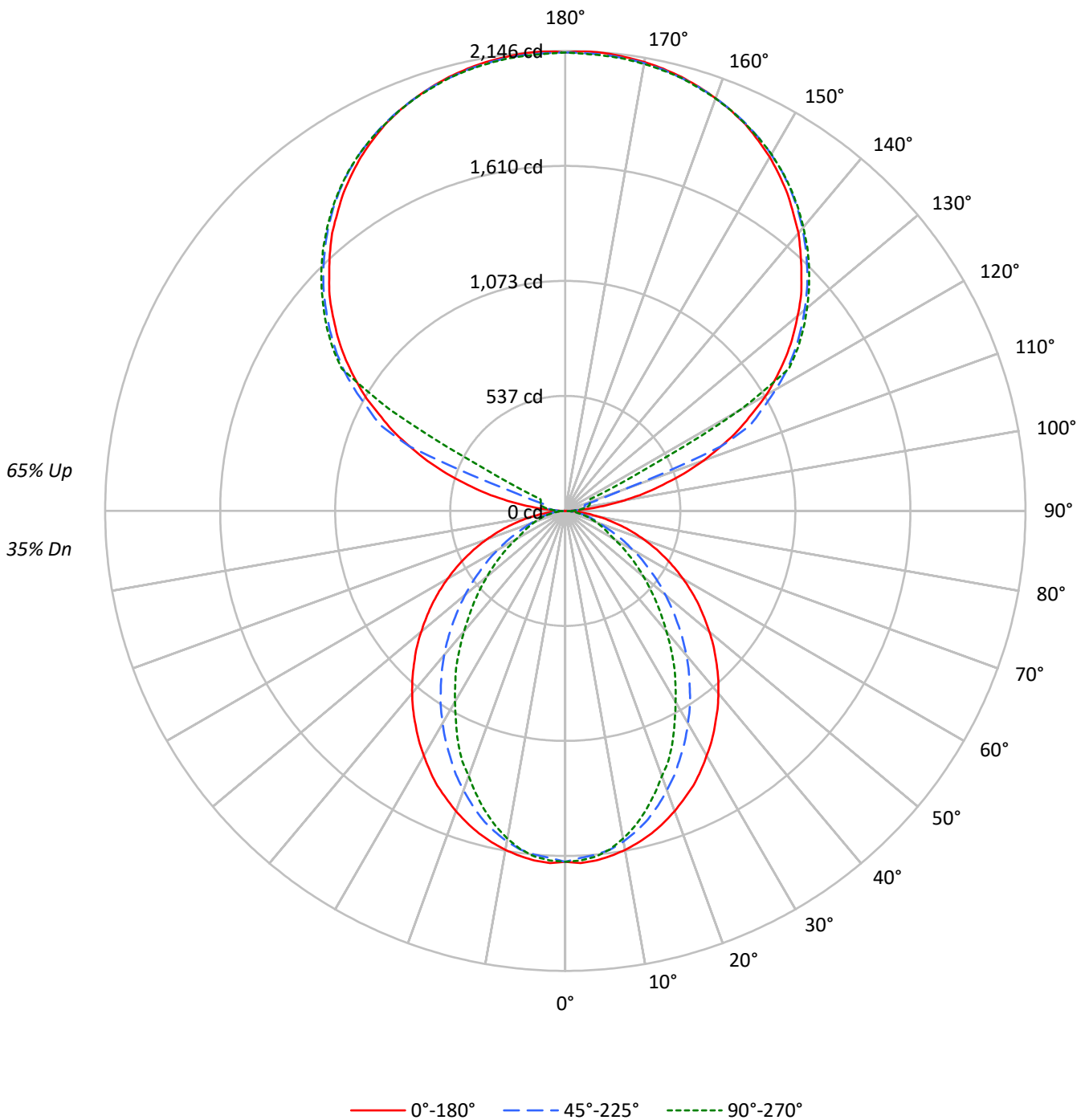
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9640.8 lumens
Efficiency: N/A
Efficacy: 95.4 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-Indirect

Input Watts (W): 101.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
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				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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42	35				35
1	95	91	87	84	86	82	79	76	66	64	62	51	50	49	38	37	36	30				30
2	87	80	74	69	78	72	67	63	58	55	52	46	43	41	34	32	31	26				26
3	79	70	63	58	71	64	58	53	52	47	44	41	38	35	30	28	27	22				22
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23	19				19
5	67	56	48	42	60	51	44	39	41	36	33	33	29	27	25	22	21	17				17
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18	15				15
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16	14				14
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15	12				12
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13	11				11
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12	10				10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1300	1300	1300
5°	1303	1280	1288
10°	1290	1255	1246
15°	1272	1213	1181
20°	1249	1156	1102
25°	1224	1092	1025
30°	1192	1026	927
35°	1161	956	842
40°	1128	882	744
45°	1091	801	655
50°	1052	720	568
55°	1012	632	485
60°	965	541	399
65°	911	448	359
70°	846	361	325
75°	765	318	295
80°	646	267	256
85°	450	178	192

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1135 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	1.6
10°-20°	421.2	4.4
20°-30°	591.3	6.1
30°-40°	644.6	6.7
40°-50°	592.4	6.1
50°-60°	465.3	4.8
60°-70°	302.9	3.1
70°-80°	155.9	1.6
80°-90°	43.6	0.5
90°-100°	70.5	0.7
100°-110°	262.9	2.7
110°-120°	697.3	7.2
120°-130°	1156.5	12.0
130°-140°	1228.4	12.7
140°-150°	1141.7	11.8
150°-160°	917.9	9.5
160°-170°	591.5	6.1
170°-180°	203.6	2.1
0°-30°	1165.9	12.1
0°-40°	1810.5	18.8
0°-60°	2868.2	29.8
0°-90°	3370.5	35.0
90°-120°	1030.7	10.7
90°-150°	4557.3	47.3
90°-180°	6270.0	65.0
0°-180°	9640.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1630	1610	1624	1619	155
15°	1557	1541	1490	1462	1448	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	996	896	741	636	600	769
55°	757	641	481	393	364	676
65°	511	391	258	208	203	507
75°	273	169	118	108	107	288
85°	64	33	28	28	28	73
90°	2	18	31	39	42	9
95°	100	49	60	68	66	119
105°	470	517	94	111	118	503
115°	890	916	955	238	127	876
125°	1258	1278	1308	1319	1323	1122
135°	1557	1582	1596	1611	1608	1203
145°	1806	1804	1831	1842	1834	1130
155°	1989	1975	1993	2003	1990	916
165°	2096	2086	2091	2102	2091	592
175°	2143	2133	2136	2146	2131	204
180°	2139	2139	2139	2139	2139	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1637.0	1637.0	1637.0	1637.0	1637.0
2.5°	1644.4	1637.0	1620.7	1635.6	1632.6
5°	1637.0	1629.7	1610.3	1623.7	1619.3
7.5°	1623.7	1614.9	1594.1	1600.0	1592.5
10°	1605.9	1595.5	1566.0	1561.5	1552.6
12.5°	1583.7	1570.4	1530.3	1521.5	1505.1
15°	1557.0	1540.7	1490.4	1462.3	1447.5
17.5°	1525.9	1502.2	1439.9	1407.4	1383.6
20°	1490.4	1460.7	1386.6	1349.7	1317.0
22.5°	1451.9	1417.8	1331.8	1281.5	1259.3
25°	1413.3	1365.9	1268.1	1207.4	1185.1
27.5°	1367.5	1317.0	1208.9	1139.2	1105.2
30°	1318.6	1262.2	1143.7	1068.2	1028.1
32.5°	1271.1	1202.9	1081.6	992.6	955.5
35°	1217.8	1142.2	1011.9	918.5	885.9
37.5°	1165.9	1084.4	946.7	844.4	807.5
40°	1111.1	1022.3	878.4	773.3	734.8
42.5°	1054.9	960.0	810.4	700.7	663.8
45°	995.6	896.3	740.8	635.5	599.9
47.5°	939.3	834.2	674.1	568.9	536.3
50°	877.1	771.9	608.9	506.6	475.6
52.5°	816.3	705.1	546.7	448.9	420.8
55°	757.0	641.4	481.4	392.6	364.5
57.5°	696.3	577.8	423.7	340.8	317.0
60°	634.1	515.6	362.9	287.5	263.7
62.5°	573.4	454.9	311.1	240.0	228.2
65°	511.1	391.1	257.8	207.5	203.0
67.5°	451.9	331.8	207.5	182.2	177.8
70°	389.7	274.1	171.8	157.0	151.1
72.5°	330.4	220.7	143.7	131.9	128.9
75°	272.6	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.4
80°	161.4	86.0	71.1	65.2	65.2
82.5°	112.6	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
90°	1.5	18.5	30.9	38.7	41.7
92.5°	38.7	32.6	37.2	40.2	41.7
95°	100.5	49.4	60.3	68.2	66.5
97.5°	181.0	54.2	78.8	83.7	85.1
100°	274.0	61.9	88.2	100.5	103.6
102.5°	376.0	373.0	91.3	108.2	113.0
105°	470.5	517.0	94.4	111.4	117.6
107.5°	580.4	618.9	97.6	114.5	120.7
110°	685.7	718.0	270.9	116.1	122.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	784.7	812.5	786.2	119.1	123.9
115°	889.9	916.2	954.9	238.4	127.0
117.5°	981.2	1012.1	1038.5	817.1	411.7
120°	1083.4	1106.5	1134.5	1153.0	944.0
122.5°	1169.9	1194.8	1225.8	1235.0	1236.7
125°	1258.1	1278.3	1307.7	1318.6	1323.2
127.5°	1338.6	1360.3	1383.7	1399.1	1400.6
130°	1414.5	1439.3	1456.3	1473.4	1471.9
132.5°	1491.9	1512.1	1529.1	1543.0	1541.5
135°	1557.0	1581.7	1595.5	1611.2	1608.0
137.5°	1625.0	1643.5	1659.1	1674.6	1670.0
140°	1691.5	1704.0	1720.9	1734.9	1727.1
142.5°	1747.4	1758.2	1778.2	1790.6	1782.8
145°	1806.2	1804.5	1830.8	1841.7	1833.9
147.5°	1857.1	1852.5	1878.7	1886.5	1880.4
150°	1906.7	1895.8	1920.6	1929.8	1922.1
152.5°	1948.4	1936.1	1959.2	1968.6	1957.8
155°	1988.7	1974.9	1993.4	2002.6	1990.4
157.5°	2021.2	2008.9	2022.8	2033.7	2021.2
160°	2049.1	2039.8	2049.1	2058.3	2047.5
162.5°	2073.8	2064.6	2072.3	2083.1	2069.2
165°	2095.5	2086.3	2090.9	2101.7	2090.9
167.5°	2112.5	2103.2	2107.9	2118.8	2104.8
170°	2126.5	2117.1	2120.3	2131.1	2117.1
172.5°	2135.7	2126.5	2129.6	2140.5	2126.5
175°	2143.4	2132.6	2135.7	2146.5	2131.1
177.5°	2146.5	2135.7	2137.3	2148.2	2134.2
180°	2138.8	2138.8	2138.8	2138.8	2138.8



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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	6.46	7.18	7.55	8.26	9.74	2.44	3.16	3.52	4.24	5.71
	3H	8.13	8.78	9.22	9.86	11.35	3.62	4.26	4.71	5.35	6.84
	4H	8.74	9.35	9.84	10.43	11.93	4.06	4.67	5.17	5.76	7.26
	6H	9.15	9.71	10.26	10.80	12.31	4.38	4.94	5.49	6.03	7.54
	8H	9.27	9.81	10.39	10.92	12.42	4.47	5.00	5.58	6.11	7.61
	12H	9.33	9.84	10.45	10.94	12.46	4.51	5.02	5.63	6.12	7.64
4H	2H	6.47	7.08	7.58	8.17	9.66	3.02	3.63	4.13	4.72	6.21
	3H	8.29	8.80	9.40	9.91	11.42	4.36	4.87	5.47	5.98	7.49
	4H	8.97	9.44	10.09	10.55	12.08	4.90	5.37	6.02	6.47	8.00
	6H	9.48	9.88	10.61	11.01	12.53	5.32	5.72	6.44	6.85	8.37
	8H	9.66	10.03	10.78	11.15	12.69	5.45	5.82	6.57	6.94	8.48
	12H	9.75	10.08	10.89	11.22	12.76	5.51	5.84	6.65	6.98	8.52
8H	4H	8.93	9.31	10.06	10.43	11.96	5.18	5.55	6.30	6.67	8.21
	6H	9.50	9.80	10.64	10.97	12.50	5.69	6.00	6.84	7.16	8.70
	8H	9.71	9.98	10.86	11.12	12.68	5.88	6.15	7.03	7.29	8.85
	12H	9.85	10.08	11.00	11.22	12.81	6.00	6.23	7.15	7.37	8.96
12H	4H	8.88	9.22	10.02	10.35	11.89	5.18	5.51	6.32	6.64	8.19
	6H	9.47	9.74	10.62	10.88	12.44	5.74	6.01	6.89	7.15	8.71
	8H	9.69	9.92	10.84	11.06	12.65	5.95	6.18	7.10	7.32	8.91