

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: P907126

Luminaire Tested: DFN2DIP-TR3F0-040D060US835-FLLFLL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P907126  
REPORT IS A COMBINATION OF REPORTS P900315 AND P897195  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR3F0-040D060US835-FLLFLL  
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

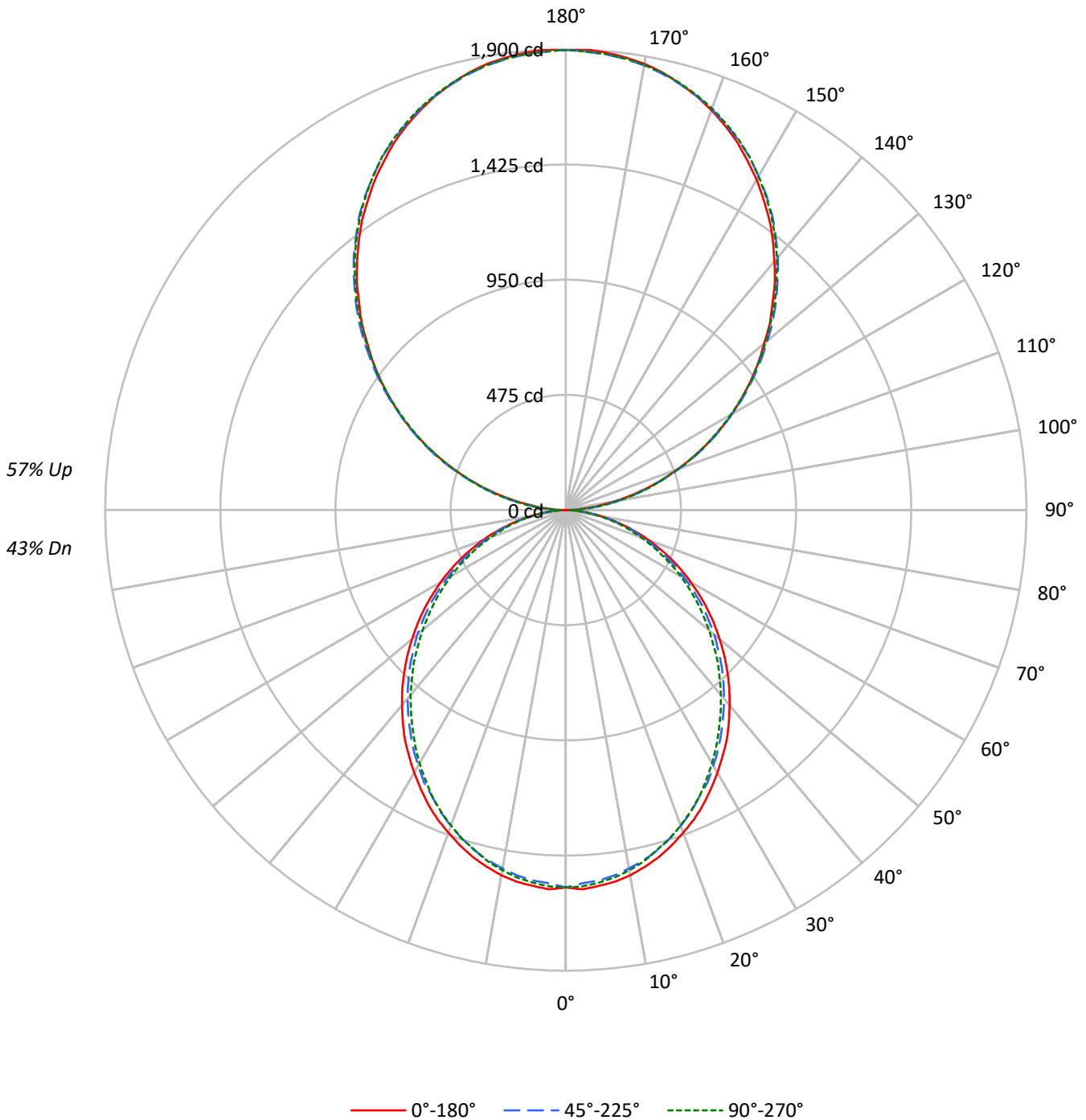
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9270.0 lumens  
Efficiency: N/A  
Efficacy: 115.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 80.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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				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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49	49	49	49	43
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42	44	43	42	36
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35	38	37	35	30
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30	34	32	30	26
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26	30	28	26	22
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22	27	25	22	19
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20	25	22	20	17
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18	23	20	18	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16	21	18	16	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	19	16	14	12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13	18	15	13	11

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1939	1939	1939
5°	1941	1911	1924
10°	1925	1883	1897
15°	1895	1851	1855
20°	1856	1806	1812
25°	1817	1753	1762
30°	1768	1703	1700
35°	1722	1645	1634
40°	1665	1586	1571
45°	1608	1527	1506
50°	1546	1465	1432
55°	1481	1393	1363
60°	1407	1308	1284
65°	1327	1220	1191
70°	1224	1112	1090
75°	1082	983	996
80°	911	818	818
85°	644	538	528

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 1851 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.5	1.6
10°-20°	412.2	4.4
20°-30°	605.7	6.5
30°-40°	703.5	7.6
40°-50°	702.6	7.6
50°-60°	612.7	6.6
60°-70°	452.9	4.9
70°-80°	256.2	2.8
80°-90°	73.0	0.8
90°-100°	117.4	1.3
100°-110°	373.1	4.0
110°-120°	638.5	6.9
120°-130°	839.7	9.1
130°-140°	942.5	10.2
140°-150°	924.2	10.0
150°-160°	775.3	8.4
160°-170°	514.2	5.5
170°-180°	179.7	1.9
0°-30°	1164.4	12.6
0°-40°	1867.9	20.1
0°-60°	3183.2	34.3
0°-90°	3965.4	42.8
90°-120°	1129.0	12.2
90°-150°	3835.4	41.4
90°-180°	5305.0	57.2
0°-180°	9270.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1556	1556	1556	1556	1556	
5°	1556	1550	1534	1546	1543	148
15°	1482	1473	1453	1459	1452	417
25°	1341	1329	1304	1306	1304	617
35°	1157	1142	1118	1109	1102	722
45°	941	931	908	892	886	727
55°	712	703	686	668	660	637
65°	480	471	456	443	436	475
75°	251	248	241	232	235	268
85°	61	60	58	54	52	68
90°	2	21	56	53	54	9
95°	84	100	102	102	100	93
105°	344	349	352	355	355	363
115°	641	650	647	645	641	634
125°	932	946	942	936	935	833
135°	1205	1223	1226	1225	1220	932
145°	1463	1475	1484	1486	1479	914
155°	1673	1678	1683	1691	1686	770
165°	1820	1819	1819	1830	1822	514
175°	1894	1890	1886	1898	1888	180
180°	1898	1898	1898	1898	1898	



TEST NUMBER: P907126

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1556.4	1556.4	1556.4	1556.4	1556.4
2.5°	1565.5	1558.0	1541.5	1556.4	1553.6
5°	1556.4	1550.5	1534.0	1545.9	1543.1
7.5°	1545.9	1537.0	1520.5	1532.6	1529.6
10°	1529.6	1519.1	1501.2	1513.1	1508.6
12.5°	1507.0	1498.1	1480.2	1487.7	1484.6
15°	1481.6	1472.7	1453.2	1459.2	1451.8
17.5°	1450.2	1441.3	1421.8	1429.2	1421.8
20°	1415.7	1406.8	1385.9	1390.3	1384.5
22.5°	1381.4	1367.9	1348.4	1348.4	1345.4
25°	1340.9	1329.0	1303.6	1306.5	1303.6
27.5°	1296.0	1285.5	1266.2	1261.7	1254.3
30°	1251.2	1239.2	1216.8	1212.3	1206.3
32.5°	1203.3	1194.4	1170.4	1161.4	1155.3
35°	1156.9	1142.0	1118.0	1109.0	1101.5
37.5°	1104.5	1091.0	1067.0	1056.6	1049.1
40°	1050.7	1038.6	1014.6	1001.3	995.3
42.5°	998.3	986.2	962.4	947.3	938.4
45°	941.4	931.0	908.4	892.1	886.0
47.5°	886.0	875.5	851.6	835.1	826.2
50°	827.6	820.1	799.2	778.2	770.7
52.5°	770.7	760.3	740.9	724.4	713.9
55°	712.5	703.4	685.5	667.5	660.1
57.5°	654.0	646.6	627.0	609.1	603.1
60°	595.6	589.7	568.8	552.3	547.8
62.5°	538.8	528.3	513.4	498.4	492.4
65°	480.5	471.4	456.5	443.0	435.6
67.5°	420.6	413.0	399.7	389.2	383.2
70°	365.2	359.2	345.7	335.2	329.3
72.5°	308.4	302.3	294.9	284.4	279.9
75°	251.4	248.5	240.9	232.0	235.0
77.5°	200.5	194.5	191.5	187.0	182.6
80°	149.7	148.1	145.1	140.7	137.7
82.5°	101.8	101.8	100.4	94.3	94.3
85°	61.3	59.9	58.4	53.8	52.4
87.5°	27.0	24.0	21.0	16.5	14.9
90°	1.7	20.6	56.1	52.6	54.3
92.5°	35.5	48.1	49.8	51.5	51.5
95°	83.5	99.5	102.4	102.4	99.5
97.5°	139.0	153.9	160.2	160.2	160.2
100°	203.1	216.2	220.8	220.8	219.1
102.5°	270.6	280.3	286.6	288.3	286.6
105°	344.4	349.0	352.4	355.3	355.3
107.5°	417.6	424.5	424.5	425.6	417.6
110°	488.6	497.7	497.7	497.7	493.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	565.2	574.9	573.2	568.6	565.2
115°	640.7	649.9	647.0	645.3	640.7
117.5°	715.7	728.3	720.2	715.7	711.1
120°	791.2	803.8	791.2	791.2	786.0
122.5°	859.8	875.8	867.8	863.3	859.8
125°	931.9	946.2	941.6	936.5	934.8
127.5°	1002.3	1020.0	1013.7	1006.9	1002.3
130°	1068.1	1088.7	1085.8	1082.4	1076.1
132.5°	1141.9	1157.9	1159.0	1151.0	1146.4
135°	1205.4	1223.1	1226.5	1224.8	1220.2
137.5°	1276.3	1290.6	1293.5	1292.3	1285.5
140°	1338.7	1353.0	1361.0	1361.0	1354.7
142.5°	1402.7	1417.0	1421.6	1423.3	1417.0
145°	1463.4	1474.8	1484.0	1485.7	1479.4
147.5°	1517.7	1532.0	1538.9	1541.7	1535.4
150°	1573.8	1583.5	1589.8	1594.9	1589.8
152.5°	1623.5	1633.3	1641.3	1647.6	1641.3
155°	1673.3	1677.9	1683.0	1691.1	1685.9
157.5°	1716.2	1719.7	1722.5	1734.0	1726.0
160°	1754.6	1758.0	1759.7	1769.4	1762.6
162.5°	1790.0	1790.0	1791.7	1802.6	1794.6
165°	1820.3	1818.6	1818.6	1830.1	1822.1
167.5°	1847.8	1842.7	1842.7	1854.1	1846.1
170°	1868.4	1863.8	1862.1	1873.5	1863.8
172.5°	1882.7	1878.1	1876.4	1887.8	1878.1
175°	1894.1	1889.6	1886.1	1897.6	1887.8
177.5°	1900.4	1895.9	1892.4	1902.1	1892.4
180°	1897.6	1897.6	1897.6	1897.6	1897.6



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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	8.81	9.61	9.83	10.64	12.01	8.38	9.18	9.40	10.21	11.58
	3H	10.46	11.18	11.49	12.21	13.60	9.99	10.71	11.02	11.74	13.13
	4H	11.04	11.72	12.08	12.75	14.15	10.57	11.25	11.61	12.29	13.69
	6H	11.43	12.05	12.48	13.09	14.50	10.96	11.58	12.01	12.63	14.04
	8H	11.53	12.12	12.58	13.18	14.59	11.06	11.65	12.11	12.71	14.12
	12H	11.57	12.14	12.63	13.19	14.62	11.10	11.66	12.15	12.71	14.14
4H	2H	9.26	9.94	10.31	10.98	12.38	8.92	9.60	9.97	10.64	12.04
	3H	11.11	11.68	12.17	12.75	14.16	10.72	11.29	11.78	12.36	13.77
	4H	11.82	12.34	12.88	13.39	14.83	11.42	11.94	12.48	12.99	14.43
	6H	12.32	12.77	13.39	13.85	15.27	11.92	12.36	12.99	13.44	14.87
	8H	12.46	12.88	13.53	13.95	15.40	12.06	12.48	13.13	13.55	14.99
	12H	12.53	12.91	13.62	13.99	15.44	12.11	12.49	13.20	13.58	15.03
8H	4H	12.01	12.42	13.08	13.49	14.94	11.65	12.07	12.72	13.14	14.58
	6H	12.62	12.97	13.72	14.08	15.52	12.26	12.61	13.36	13.72	15.16
	8H	12.84	13.14	13.94	14.24	15.70	12.47	12.78	13.57	13.87	15.33
	12H	12.96	13.23	14.06	14.32	15.82	12.58	12.85	13.68	13.94	15.44
12H	4H	11.99	12.36	13.08	13.45	14.90	11.64	12.02	12.73	13.10	14.55
	6H	12.65	12.95	13.75	14.05	15.51	12.30	12.61	13.40	13.70	15.16
	8H	12.88	13.15	13.99	14.24	15.74	12.53	12.80	13.63	13.89	15.39