

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: P907103

Luminaire Tested: DFN2DIP-TR3F0-030D060US835-RLONL

Issue Date: 11/21/2024

**Test Information**

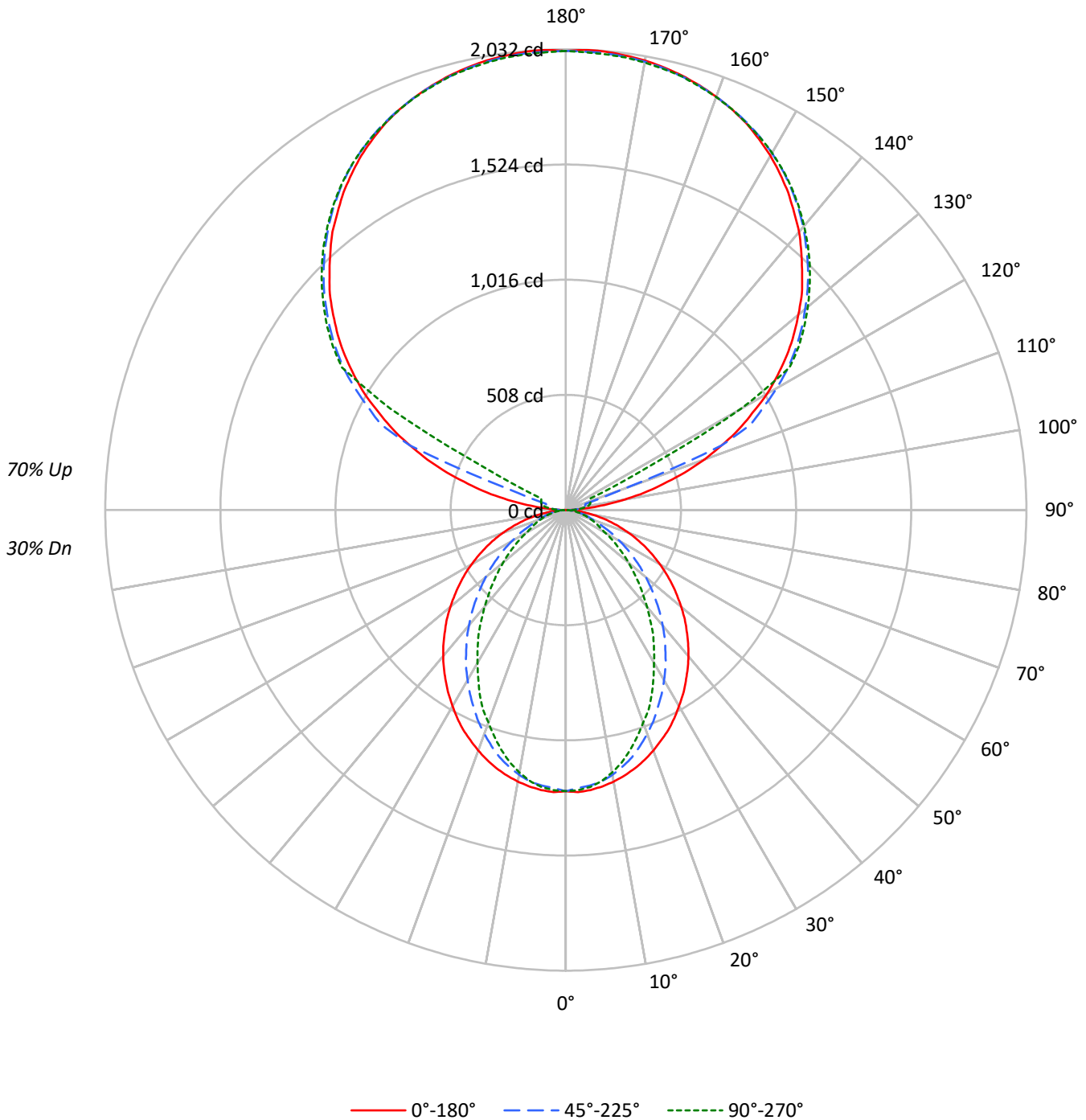
Test Method: LM-79-2019  
Report Number: P907103  
REPORT IS A COMBINATION OF REPORTS P901834 AND P898751  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR3F0-030D060US835-RLLONL  
Description: 3 foot, 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: 8490.0 lumens  
Efficiency: N/A  
Efficacy: 122.9 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-Indirect  
  
Input Watts (W): 69.1  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9968  
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38	38	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32	34	33	32	26
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28	30	29	28	22
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24	27	25	24	19
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21	24	22	21	17
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18	22	20	18	15
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16	20	18	16	13
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15	18	16	15	12
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13	17	15	13	11
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12	16	13	12	10
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11	14	12	11	9

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

	0°	45°	90°
0°	1545	1545	1545
5°	1547	1519	1529
10°	1530	1488	1478
15°	1509	1438	1401
20°	1480	1369	1305
25°	1450	1292	1213
30°	1411	1213	1097
35°	1373	1128	995
40°	1334	1040	878
45°	1288	943	773
50°	1241	845	669
55°	1192	741	570
60°	1135	632	468
65°	1069	522	420
70°	989	419	379
75°	889	366	342
80°	744	303	294
85°	506	196	215

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 1346 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.2	1.4
10°-20°	319.0	3.8
20°-30°	447.9	5.3
30°-40°	488.2	5.8
40°-50°	448.7	5.3
50°-60°	352.4	4.2
60°-70°	229.4	2.7
70°-80°	118.1	1.4
80°-90°	33.7	0.4
90°-100°	66.8	0.8
100°-110°	248.9	2.9
110°-120°	660.2	7.8
120°-130°	1094.9	12.9
130°-140°	1163.0	13.7
140°-150°	1080.9	12.7
150°-160°	869.0	10.2
160°-170°	560.0	6.6
170°-180°	192.7	2.3
0°-30°	883.1	10.4
0°-40°	1371.3	16.2
0°-60°	2172.4	25.6
0°-90°	2553.5	30.1
90°-120°	975.8	11.5
90°-150°	4314.7	50.8
90°-180°	5936.0	69.9
0°-180°	8490.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1240	1240	1240	1240	1240	
5°	1240	1234	1220	1230	1226	118
15°	1179	1167	1129	1108	1096	332
25°	1070	1034	960	914	898	492
35°	922	865	766	696	671	577
45°	754	679	561	481	454	582
55°	573	486	365	297	276	512
65°	387	296	195	157	154	384
75°	206	128	90	82	81	218
85°	48	25	21	21	21	55
90°	1	18	29	37	40	8
95°	95	47	57	65	63	113
105°	445	489	89	105	111	476
115°	842	867	904	226	120	829
125°	1191	1210	1238	1248	1253	1062
135°	1474	1498	1511	1525	1522	1139
145°	1710	1708	1733	1744	1736	1069
155°	1883	1870	1887	1896	1884	868
165°	1984	1975	1980	1990	1980	560
175°	2029	2019	2022	2032	2018	193
180°	2025	2025	2025	2025	2025	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1239.9	1239.9	1239.9	1239.9	1239.9
2.5°	1245.5	1239.9	1227.5	1238.8	1236.6
5°	1239.9	1234.3	1219.7	1229.8	1226.4
7.5°	1229.8	1223.1	1207.4	1211.8	1206.2
10°	1216.3	1208.5	1186.1	1182.6	1176.0
12.5°	1199.5	1189.4	1159.1	1152.4	1140.0
15°	1179.3	1166.9	1128.8	1107.5	1096.3
17.5°	1155.7	1137.8	1090.6	1066.0	1048.0
20°	1128.8	1106.3	1050.2	1022.3	997.5
22.5°	1099.7	1073.8	1008.7	970.6	953.8
25°	1070.5	1034.5	960.5	914.5	897.6
27.5°	1035.7	997.5	915.6	862.9	837.0
30°	998.7	956.0	866.2	809.1	778.7
32.5°	962.7	911.1	819.2	751.8	723.7
35°	922.4	865.1	766.4	695.7	671.0
37.5°	883.1	821.3	717.0	639.5	611.6
40°	841.6	774.3	665.4	585.7	556.6
42.5°	798.9	727.2	613.8	530.7	502.7
45°	754.1	678.8	561.1	481.3	454.4
47.5°	711.4	631.8	510.6	430.8	406.2
50°	664.3	584.6	461.2	383.7	360.2
52.5°	618.2	534.1	414.1	340.0	318.7
55°	573.3	485.8	364.6	297.4	276.1
57.5°	527.4	437.6	321.0	258.1	240.1
60°	480.2	390.5	274.9	217.7	199.8
62.5°	434.3	344.5	235.6	181.8	172.9
65°	387.1	296.2	195.2	157.1	153.7
67.5°	342.3	251.3	157.1	138.0	134.6
70°	295.1	207.6	130.1	118.9	114.4
72.5°	250.2	167.1	108.8	99.9	97.6
75°	206.4	127.9	89.8	81.9	80.8
77.5°	162.7	90.8	70.7	66.2	63.9
80°	122.3	65.1	53.8	49.4	49.4
82.5°	85.2	43.8	37.0	34.8	34.8
85°	48.2	24.6	21.3	21.3	21.3
87.5°	18.0	8.9	8.9	7.9	7.9
90°	1.4	17.6	29.2	36.7	39.5
92.5°	36.7	30.8	35.1	38.1	39.5
95°	95.2	46.8	57.1	64.6	63.0
97.5°	171.4	51.3	74.6	79.2	80.6
100°	259.4	58.6	83.5	95.2	98.1
102.5°	356.0	353.2	86.5	102.5	107.0
105°	445.4	489.4	89.4	105.4	111.4
107.5°	549.5	586.0	92.4	108.4	114.3
110°	649.2	679.8	256.5	110.0	115.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	742.9	769.2	744.3	112.7	117.3
115°	842.5	867.4	904.1	225.7	120.2
117.5°	928.9	958.2	983.2	773.6	389.7
120°	1025.7	1047.6	1074.1	1091.6	893.8
122.5°	1107.6	1131.1	1160.5	1169.2	1170.8
125°	1191.2	1210.3	1238.1	1248.4	1252.7
127.5°	1267.4	1287.9	1310.0	1324.6	1326.0
130°	1339.2	1362.7	1378.7	1394.9	1393.5
132.5°	1412.5	1431.6	1447.6	1460.8	1459.4
135°	1474.1	1497.6	1510.6	1525.4	1522.4
137.5°	1538.4	1556.0	1570.8	1585.4	1581.1
140°	1601.4	1613.3	1629.3	1642.5	1635.2
142.5°	1654.3	1664.6	1683.6	1695.2	1687.9
145°	1710.0	1708.4	1733.3	1743.6	1736.3
147.5°	1758.2	1753.8	1778.7	1786.0	1780.3
150°	1805.2	1794.9	1818.4	1827.1	1819.8
152.5°	1844.7	1833.0	1854.9	1863.8	1853.5
155°	1882.8	1869.7	1887.3	1896.0	1884.3
157.5°	1913.6	1901.9	1915.1	1925.4	1913.6
160°	1940.0	1931.1	1940.0	1948.7	1938.5
162.5°	1963.3	1954.6	1961.9	1972.2	1959.0
165°	1983.9	1975.2	1979.5	1989.8	1979.5
167.5°	2000.0	1991.2	1995.7	2006.0	1992.7
170°	2013.3	2004.4	2007.4	2017.6	2004.4
172.5°	2022.0	2013.3	2016.2	2026.5	2013.3
175°	2029.3	2019.0	2022.0	2032.2	2017.6
177.5°	2032.2	2022.0	2023.5	2033.8	2020.6
180°	2024.9	2024.9	2024.9	2024.9	2024.9



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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	6.39	7.08	7.50	8.18	9.71	2.36	3.05	3.48	4.16	5.69
	3H	8.04	8.66	9.17	9.78	11.32	3.53	4.15	4.66	5.27	6.82
	4H	8.64	9.22	9.77	10.34	11.89	3.97	4.56	5.11	5.68	7.23
	6H	9.05	9.58	10.19	10.70	12.27	4.28	4.82	5.43	5.94	7.51
	8H	9.16	9.68	10.31	10.81	12.37	4.37	4.88	5.51	6.01	7.57
	12H	9.22	9.70	10.37	10.83	12.41	4.40	4.89	5.55	6.02	7.60
4H	2H	6.38	6.97	7.53	8.09	9.64	2.93	3.52	4.08	4.64	6.19
	3H	8.19	8.68	9.34	9.82	11.39	4.27	4.75	5.41	5.90	7.46
	4H	8.87	9.32	10.02	10.45	12.04	4.80	5.25	5.95	6.38	7.97
	6H	9.37	9.75	10.52	10.91	12.48	5.21	5.59	6.36	6.75	8.32
	8H	9.54	9.89	10.69	11.04	12.63	5.33	5.69	6.49	6.83	8.43
	12H	9.62	9.94	10.79	11.10	12.70	5.39	5.71	6.56	6.87	8.47
8H	4H	8.83	9.18	9.98	10.33	11.92	5.07	5.42	6.22	6.57	8.16
	6H	9.38	9.67	10.55	10.86	12.45	5.57	5.87	6.75	7.06	8.64
	8H	9.59	9.84	10.77	11.01	12.62	5.76	6.02	6.94	7.18	8.79
	12H	9.71	9.94	10.90	11.10	12.75	5.87	6.09	7.05	7.26	8.90
12H	4H	8.77	9.10	9.94	10.25	11.85	5.06	5.39	6.23	6.55	8.14
	6H	9.35	9.61	10.53	10.78	12.38	5.62	5.88	6.80	7.04	8.65
	8H	9.56	9.78	10.74	10.95	12.59	5.82	6.04	7.00	7.21	8.85