

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: P920754

Luminaire Tested: DFN2DIP-TR3F0-040D030US935-FLLFLL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P920754  
REPORT IS A COMBINATION OF REPORTS P900273 AND P897195  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR3F0-040D030US935-FLLFLL  
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

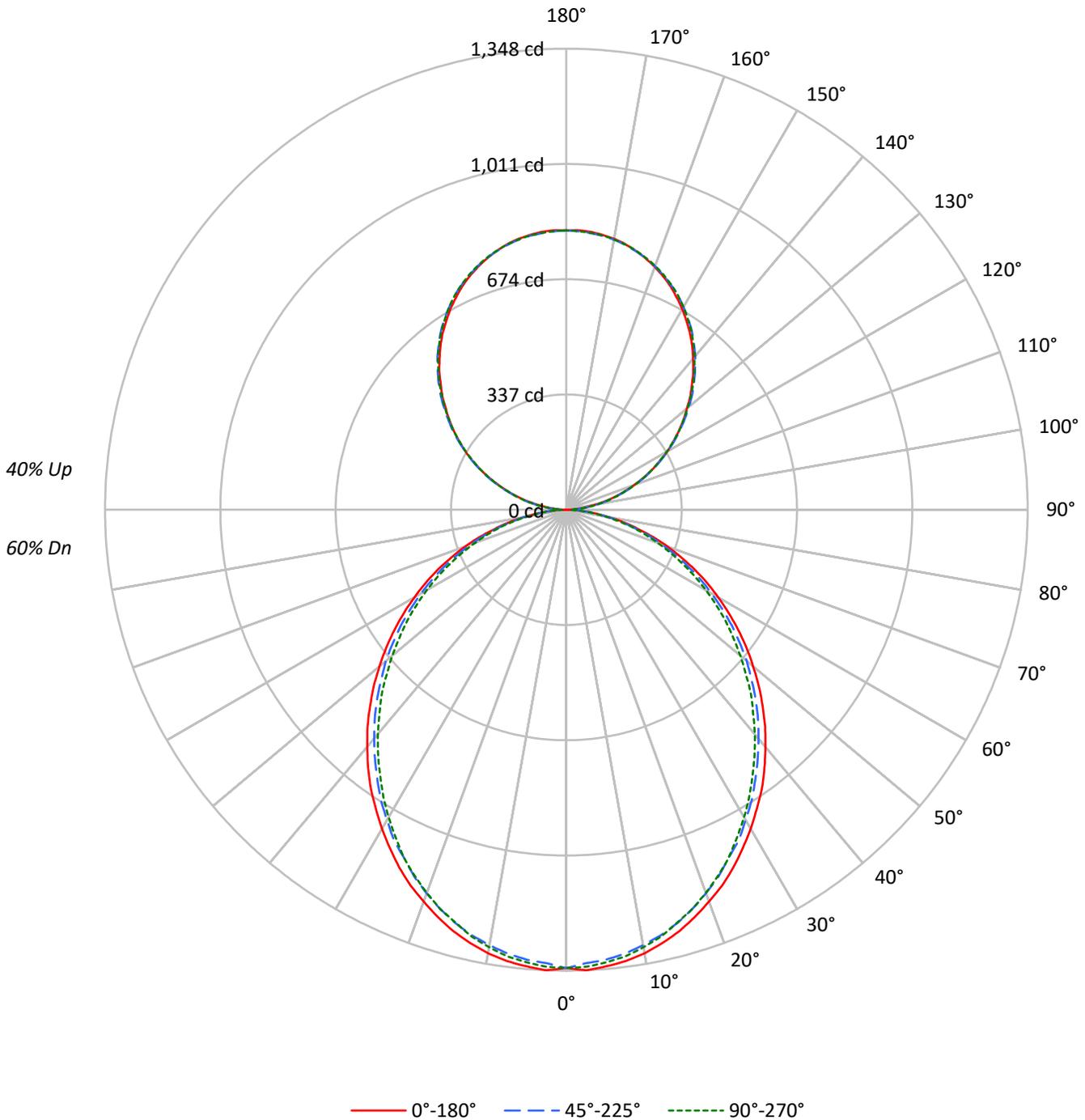
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5695.4 lumens  
Efficiency: N/A  
Efficacy: 98.7 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): 57.7  
Input Voltage (V): 120  
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

TEST NUMBER: P920754  
CATALOG NUMBER: DFN2DIP-TR3F0-040D030US935-FLLFLL

### 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	102	102	102	102	89	89	89	77	77	77	65	65	65	60			
1	100	96	92	88	93	89	86	83	78	75	73	67	66	64	58	56	55	50			
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	48	46	42			
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40	36			
4	76	65	57	51	71	61	54	48	54	48	43	47	42	39	40	37	34	31			
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30	27			
6	64	52	44	38	60	49	42	36	43	37	33	38	33	29	33	29	26	23			
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23	21			
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21	19			
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19	17			
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17	15			

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

	0°	45°	90°
0°	1670	1670	1670
5°	1672	1645	1657
10°	1657	1622	1633
15°	1632	1594	1597
20°	1598	1555	1560
25°	1564	1509	1517
30°	1522	1467	1464
35°	1482	1416	1407
40°	1434	1366	1353
45°	1384	1315	1297
50°	1331	1261	1233
55°	1275	1200	1173
60°	1212	1126	1106
65°	1142	1050	1026
70°	1054	957	939
75°	932	846	857
80°	784	704	705
85°	554	464	455

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1384 cd/sqm



TEST NUMBER: P920754

CATALOG NUMBER: DFN2DIP-TR3F0-040D030US935-FLLFLL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.1	2.2
10°-20°	354.9	6.2
20°-30°	521.5	9.2
30°-40°	605.7	10.6
40°-50°	605.0	10.6
50°-60°	527.5	9.3
60°-70°	389.9	6.8
70°-80°	220.6	3.9
80°-90°	60.5	1.1
90°-100°	50.6	0.9
100°-110°	160.6	2.8
110°-120°	274.9	4.8
120°-130°	361.5	6.3
130°-140°	405.7	7.1
140°-150°	397.9	7.0
150°-160°	333.8	5.9
160°-170°	221.3	3.9
170°-180°	77.4	1.4
0°-30°	1002.5	17.6
0°-40°	1608.3	28.2
0°-60°	2740.7	48.1
0°-90°	3411.8	59.9
90°-120°	486.0	8.5
90°-150°	1651.1	29.0
90°-180°	2284.0	40.1
0°-180°	5695.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1340	1335	1321	1331	1329	127
15°	1276	1268	1251	1256	1250	359
25°	1154	1144	1122	1125	1122	531
35°	996	983	963	955	948	622
45°	810	802	782	768	763	626
55°	614	606	590	575	568	548
65°	414	406	393	381	375	409
75°	216	214	207	200	202	231
85°	53	52	50	46	45	59
90°	1	9	24	23	23	5
95°	36	43	44	44	43	40
105°	148	150	152	153	153	156
115°	276	280	278	278	276	273
125°	401	407	405	403	402	358
135°	519	526	528	527	525	401
145°	630	635	639	640	637	394
155°	720	722	724	728	726	332
165°	784	783	783	788	784	221
175°	816	814	812	817	813	77
180°	817	817	817	817	817	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1340.1	1340.1	1340.1	1340.1	1340.1
2.5°	1347.9	1341.4	1327.2	1340.1	1337.6
5°	1340.1	1335.0	1320.8	1331.0	1328.6
7.5°	1331.0	1323.4	1309.1	1319.6	1317.0
10°	1317.0	1307.9	1292.5	1302.8	1298.9
12.5°	1297.5	1289.9	1274.4	1280.9	1278.2
15°	1275.7	1268.0	1251.2	1256.4	1250.0
17.5°	1248.6	1241.0	1224.2	1230.5	1224.2
20°	1218.9	1211.3	1193.3	1197.0	1192.1
22.5°	1189.4	1177.8	1161.0	1161.0	1158.4
25°	1154.5	1144.3	1122.4	1124.9	1122.4
27.5°	1115.9	1106.8	1090.2	1086.3	1079.9
30°	1077.3	1066.9	1047.7	1043.8	1038.6
32.5°	1036.0	1028.4	1007.7	1000.0	994.7
35°	996.1	983.3	962.6	954.8	948.4
37.5°	951.0	939.3	918.7	909.7	903.3
40°	904.7	894.2	873.6	862.1	857.0
42.5°	859.5	849.1	828.6	815.6	808.0
45°	810.5	801.6	782.1	768.1	762.8
47.5°	762.8	753.8	733.2	719.0	711.4
50°	712.6	706.1	688.1	670.0	663.6
52.5°	663.6	654.6	637.9	623.7	614.7
55°	613.5	605.6	590.2	574.7	568.3
57.5°	563.1	556.7	539.8	524.4	519.3
60°	512.8	507.7	489.7	475.5	471.7
62.5°	463.9	454.9	442.0	429.1	424.0
65°	413.7	405.9	393.0	381.4	375.1
67.5°	362.1	355.6	344.1	335.1	329.9
70°	314.4	309.3	297.6	288.6	283.5
72.5°	265.5	260.3	253.9	244.9	241.0
75°	216.5	214.0	207.4	199.8	202.3
77.5°	172.6	167.5	164.9	161.0	157.2
80°	128.9	127.5	124.9	121.1	118.6
82.5°	87.6	87.6	86.4	81.2	81.2
85°	52.8	51.6	50.3	46.3	45.1
87.5°	23.2	20.7	18.1	14.2	12.8
90°	0.8	8.9	24.1	22.6	23.4
92.5°	15.2	20.7	21.4	22.1	22.1
95°	36.0	42.9	44.1	44.1	42.9
97.5°	59.8	66.2	69.0	69.0	69.0
100°	87.4	93.1	95.1	95.1	94.4
102.5°	116.5	120.7	123.4	124.2	123.4
105°	148.3	150.2	151.7	152.9	152.9
107.5°	179.8	182.7	182.7	183.2	179.8
110°	210.3	214.3	214.3	214.3	212.3



TEST NUMBER: P920754

CATALOG NUMBER: DFN2DIP-TR3F0-040D030US935-FLLFLL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	243.3	247.5	246.8	244.8	243.3
115°	275.9	279.7	278.5	277.8	275.9
117.5°	308.1	313.5	310.0	308.1	306.1
120°	340.6	346.0	340.6	340.6	338.4
122.5°	370.1	377.0	373.6	371.6	370.1
125°	401.2	407.3	405.4	403.1	402.4
127.5°	431.4	439.1	436.4	433.4	431.4
130°	459.8	468.6	467.4	466.0	463.2
132.5°	491.5	498.4	498.9	495.5	493.5
135°	518.9	526.5	528.0	527.3	525.3
137.5°	549.4	555.6	556.8	556.4	553.4
140°	576.3	582.5	585.9	585.9	583.2
142.5°	603.9	610.0	612.0	612.8	610.0
145°	630.0	634.9	638.9	639.5	636.9
147.5°	653.4	659.5	662.5	663.7	661.0
150°	677.5	681.7	684.4	686.6	684.4
152.5°	699.0	703.1	706.5	709.3	706.5
155°	720.4	722.3	724.5	728.0	725.8
157.5°	738.8	740.3	741.6	746.5	743.0
160°	755.4	756.8	757.6	761.7	758.8
162.5°	770.6	770.6	771.4	776.0	772.6
165°	783.7	782.9	782.9	787.8	784.4
167.5°	795.5	793.2	793.2	798.1	794.7
170°	804.3	802.4	801.7	806.6	802.4
172.5°	810.5	808.6	807.8	812.7	808.6
175°	815.5	813.5	812.0	816.9	812.7
177.5°	818.1	816.1	814.7	818.9	814.7
180°	816.9	816.9	816.9	816.9	816.9



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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	9.87	10.83	10.73	11.71	12.84	9.44	10.40	10.31	11.29	12.41
	3H	11.53	12.39	12.41	13.28	14.43	11.06	11.92	11.94	12.82	13.96
	4H	12.11	12.92	13.01	13.83	14.99	11.64	12.46	12.54	13.36	14.52
	6H	12.51	13.26	13.42	14.17	15.34	12.04	12.79	12.95	13.70	14.87
	8H	12.61	13.33	13.53	14.25	15.43	12.14	12.86	13.06	13.79	14.96
	12H	12.66	13.34	13.58	14.26	15.46	12.19	12.87	13.11	13.79	14.99
4H	2H	10.34	11.15	11.24	12.05	13.21	9.99	10.81	10.89	11.71	12.87
	3H	12.20	12.88	13.11	13.81	14.99	11.81	12.49	12.72	13.43	14.60
	4H	12.91	13.53	13.83	14.46	15.66	12.51	13.13	13.43	14.06	15.26
	6H	13.42	13.96	14.36	14.91	16.11	13.02	13.55	13.96	14.51	15.71
	8H	13.57	14.07	14.51	15.02	16.23	13.16	13.66	14.10	14.61	15.83
	12H	13.64	14.09	14.60	15.06	16.28	13.23	13.68	14.19	14.65	15.86
8H	4H	13.11	13.61	14.05	14.56	15.77	12.76	13.26	13.69	14.20	15.42
	6H	13.74	14.15	14.70	15.14	16.35	13.38	13.79	14.34	14.78	15.99
	8H	13.95	14.32	14.93	15.30	16.53	13.59	13.95	14.56	14.93	16.16
	12H	14.08	14.40	15.06	15.38	16.65	13.70	14.03	14.68	15.00	16.28
12H	4H	13.10	13.55	14.06	14.52	15.74	12.75	13.20	13.71	14.17	15.39
	6H	13.77	14.13	14.74	15.11	16.34	13.42	13.78	14.39	14.76	15.99
	8H	14.00	14.33	14.98	15.30	16.58	13.65	13.97	14.63	14.95	16.23