

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: P925467

Luminaire Tested: DFN2DIP-SQ3F0-040D110US950-RLLONL

Issue Date: 11/21/2024

**Test Information**

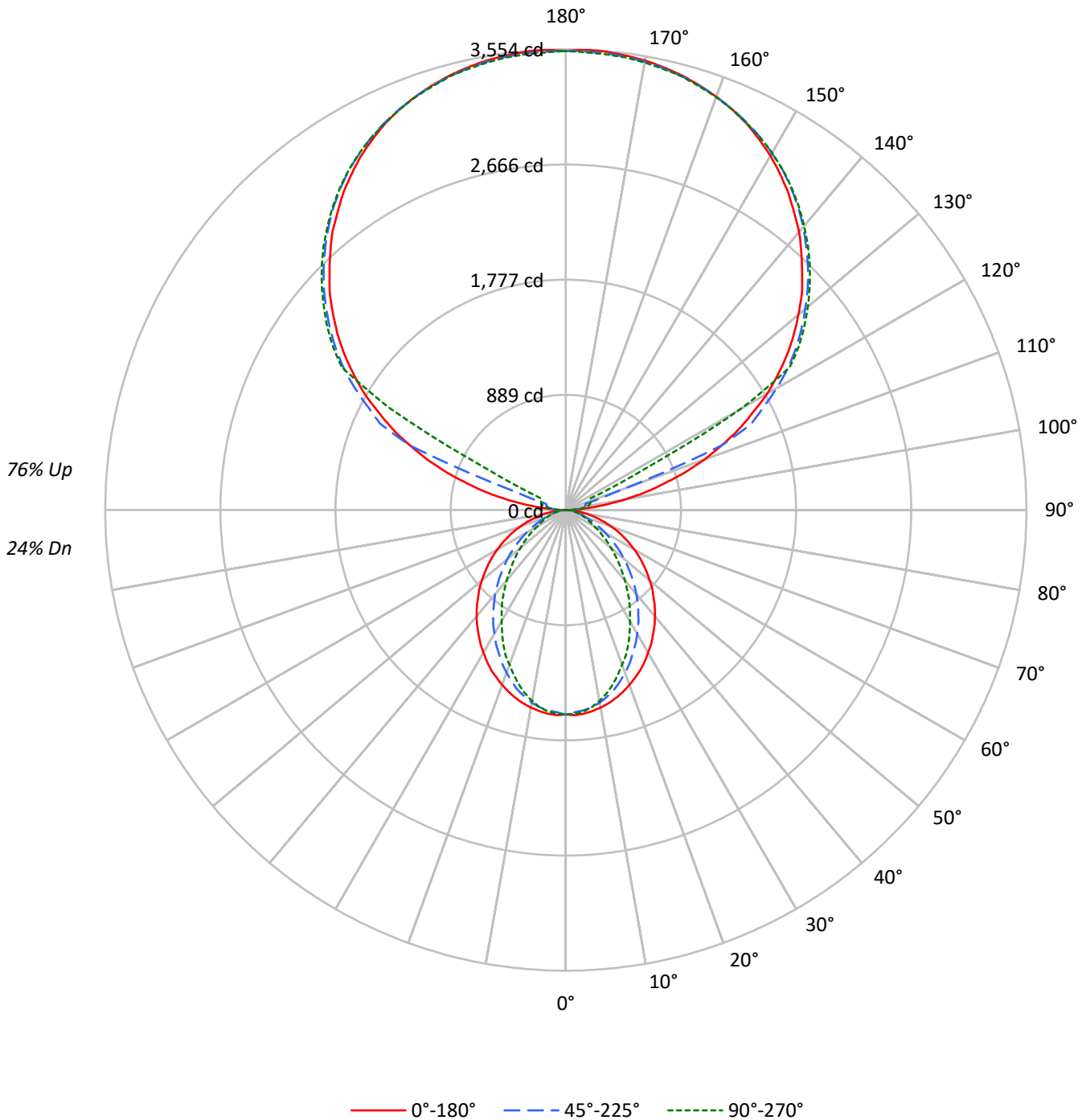
Test Method: LM-79-2019  
Report Number: P925467  
REPORT IS A COMBINATION OF REPORTS P901508 AND P898289  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ3F0-040D110US950-RLLONL  
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13632.7 lumens  
Efficiency: N/A  
Efficacy: 115.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 118.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9933  
Total Harmonic Distortion (THDi): 0.066  
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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32	24				24
1	92	88	84	81	82	78	75	73	60	58	57	44	43	42	29	28	27	21				21
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	25	24	23	18				18
3	77	68	61	56	68	61	55	50	47	43	40	34	32	30	23	21	20	15				15
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	20	19	18	13				13
5	64	53	46	40	57	48	41	37	37	33	29	28	25	22	19	17	15	12				12
6	59	48	40	35	53	43	36	32	34	29	26	25	22	20	17	15	14	10				10
7	55	43	36	30	49	39	32	28	30	26	22	23	20	17	15	14	12	9				9
8	51	39	32	27	45	35	29	24	28	23	20	21	18	15	14	12	11	8				8
9	47	36	28	24	42	32	26	22	25	21	18	19	16	14	13	11	10	8				8
10	44	32	26	21	39	29	23	19	23	19	16	18	15	12	12	10	9	7				7

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

	0°	45°	90°
0°	1807	1807	1807
5°	1809	1777	1789
10°	1790	1741	1730
15°	1764	1682	1640
20°	1730	1602	1529
25°	1696	1512	1422
30°	1650	1420	1286
35°	1605	1321	1167
40°	1559	1219	1031
45°	1505	1105	907
50°	1450	991	786
55°	1392	869	670
60°	1325	742	551
65°	1248	613	495
70°	1154	492	447
75°	1036	431	406
80°	866	358	350
85°	587	233	259

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 2427 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.8	1.1
10°-20°	405.8	3.0
20°-30°	569.7	4.2
30°-40°	621.0	4.6
40°-50°	570.8	4.2
50°-60°	448.2	3.3
60°-70°	291.8	2.1
70°-80°	150.2	1.1
80°-90°	44.6	0.3
90°-100°	116.8	0.9
100°-110°	435.4	3.2
110°-120°	1154.6	8.5
120°-130°	1915.0	14.0
130°-140°	2034.2	14.9
140°-150°	1890.5	13.9
150°-160°	1519.9	11.1
160°-170°	979.4	7.2
170°-180°	337.1	2.5
0°-30°	1123.3	8.2
0°-40°	1744.3	12.8
0°-60°	2763.3	20.3
0°-90°	3249.8	23.8
90°-120°	1706.7	12.5
90°-150°	7546.4	55.4
90°-180°	10383.0	76.2
0°-180°	13632.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	2	31	51	64	69	13
95°	166	82	100	113	110	197
105°	779	856	156	184	195	832
115°	1474	1517	1581	395	210	1451
125°	2083	2117	2166	2183	2191	1858
135°	2578	2619	2642	2668	2663	1992
145°	2991	2988	3032	3050	3037	1871
155°	3293	3270	3301	3316	3296	1517
165°	3470	3454	3462	3480	3462	980
175°	3549	3531	3536	3554	3529	338
180°	3542	3542	3542	3542	3542	



TEST NUMBER: P925467

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	2.5	30.7	51.1	64.2	69.1
92.5°	64.2	53.9	61.4	66.7	69.1
95°	166.5	81.9	99.8	112.9	110.2
97.5°	299.7	89.8	130.5	138.4	140.9
100°	453.7	102.6	146.1	166.5	171.6
102.5°	622.6	617.7	151.2	179.3	187.2
105°	779.0	856.0	156.5	184.4	194.8
107.5°	961.1	1024.9	161.6	189.6	200.0
110°	1135.4	1189.0	448.6	192.3	202.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1299.4	1345.3	1301.8	197.2	205.1
115°	1473.5	1517.0	1581.3	394.7	210.3
117.5°	1624.8	1675.9	1719.7	1353.0	681.6
120°	1793.9	1832.3	1878.5	1909.2	1563.2
122.5°	1937.3	1978.3	2029.7	2045.0	2047.8
125°	2083.3	2116.8	2165.5	2183.4	2191.1
127.5°	2216.6	2252.5	2291.1	2316.7	2319.2
130°	2342.3	2383.4	2411.3	2439.7	2437.3
132.5°	2470.4	2503.9	2531.9	2555.0	2552.6
135°	2578.2	2619.2	2642.0	2668.0	2662.7
137.5°	2690.8	2721.5	2747.3	2772.9	2765.3
140°	2800.9	2821.6	2849.6	2872.7	2859.9
142.5°	2893.4	2911.3	2944.5	2964.9	2952.2
145°	2990.8	2988.0	3031.5	3049.6	3036.8
147.5°	3075.1	3067.5	3111.0	3123.8	3113.8
150°	3157.3	3139.3	3180.3	3195.6	3182.8
152.5°	3226.3	3205.9	3244.3	3259.8	3241.9
155°	3293.0	3270.1	3300.8	3316.1	3295.7
157.5°	3346.8	3326.4	3349.6	3367.5	3346.8
160°	3393.1	3377.5	3393.1	3408.3	3390.3
162.5°	3433.8	3418.7	3431.4	3449.4	3426.3
165°	3469.8	3454.5	3462.2	3480.1	3462.2
167.5°	3498.0	3482.6	3490.5	3508.4	3485.3
170°	3521.2	3505.7	3510.8	3528.8	3505.7
172.5°	3536.4	3521.2	3526.4	3544.3	3521.2
175°	3549.2	3531.2	3536.4	3554.4	3528.8
177.5°	3554.4	3536.4	3539.1	3557.1	3534.0
180°	3541.6	3541.6	3541.6	3541.6	3541.6



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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	6.01	6.66	7.17	7.80	9.41	1.97	2.62	3.13	3.76	5.37
	3H	7.67	8.25	8.83	9.40	11.02	3.14	3.72	4.30	4.87	6.49
	4H	8.26	8.82	9.44	9.97	11.59	3.57	4.13	4.75	5.28	6.90
	6H	8.67	9.18	9.85	10.34	11.97	3.88	4.39	5.06	5.54	7.18
	8H	8.79	9.28	9.98	10.45	12.07	3.96	4.45	5.15	5.62	7.24
	12H	8.85	9.31	10.03	10.47	12.12	4.00	4.46	5.18	5.62	7.27
4H	2H	6.00	6.56	7.18	7.71	9.33	2.54	3.09	3.72	4.24	5.87
	3H	7.81	8.27	9.00	9.45	11.08	3.87	4.33	5.05	5.50	7.14
	4H	8.49	8.92	9.68	10.08	11.73	4.40	4.83	5.59	5.99	7.64
	6H	8.99	9.36	10.18	10.54	12.18	4.80	5.17	6.00	6.35	8.00
	8H	9.16	9.50	10.35	10.68	12.34	4.93	5.27	6.12	6.44	8.10
	12H	9.25	9.55	10.45	10.74	12.41	4.98	5.29	6.18	6.48	8.14
8H	4H	8.44	8.78	9.63	9.96	11.62	4.67	5.01	5.86	6.18	7.84
	6H	9.00	9.28	10.21	10.50	12.15	5.17	5.45	6.38	6.67	8.32
	8H	9.21	9.45	10.42	10.65	12.33	5.36	5.60	6.57	6.79	8.47
	12H	9.34	9.55	10.56	10.75	12.45	5.46	5.67	6.68	6.87	8.58
12H	4H	8.39	8.70	9.59	9.88	11.55	4.66	4.97	5.87	6.16	7.82
	6H	8.97	9.22	10.19	10.41	12.09	5.22	5.46	6.43	6.66	8.33
	8H	9.18	9.40	10.40	10.59	12.30	5.41	5.63	6.63	6.82	8.53