

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: P914388

Luminaire Tested: DFN2DIP-SQ2F0-030D050US927-FLLFLL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P914388  
REPORT IS A COMBINATION OF REPORTS P899795 AND P896659  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ2F0-030D050US927-FLLFLL  
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

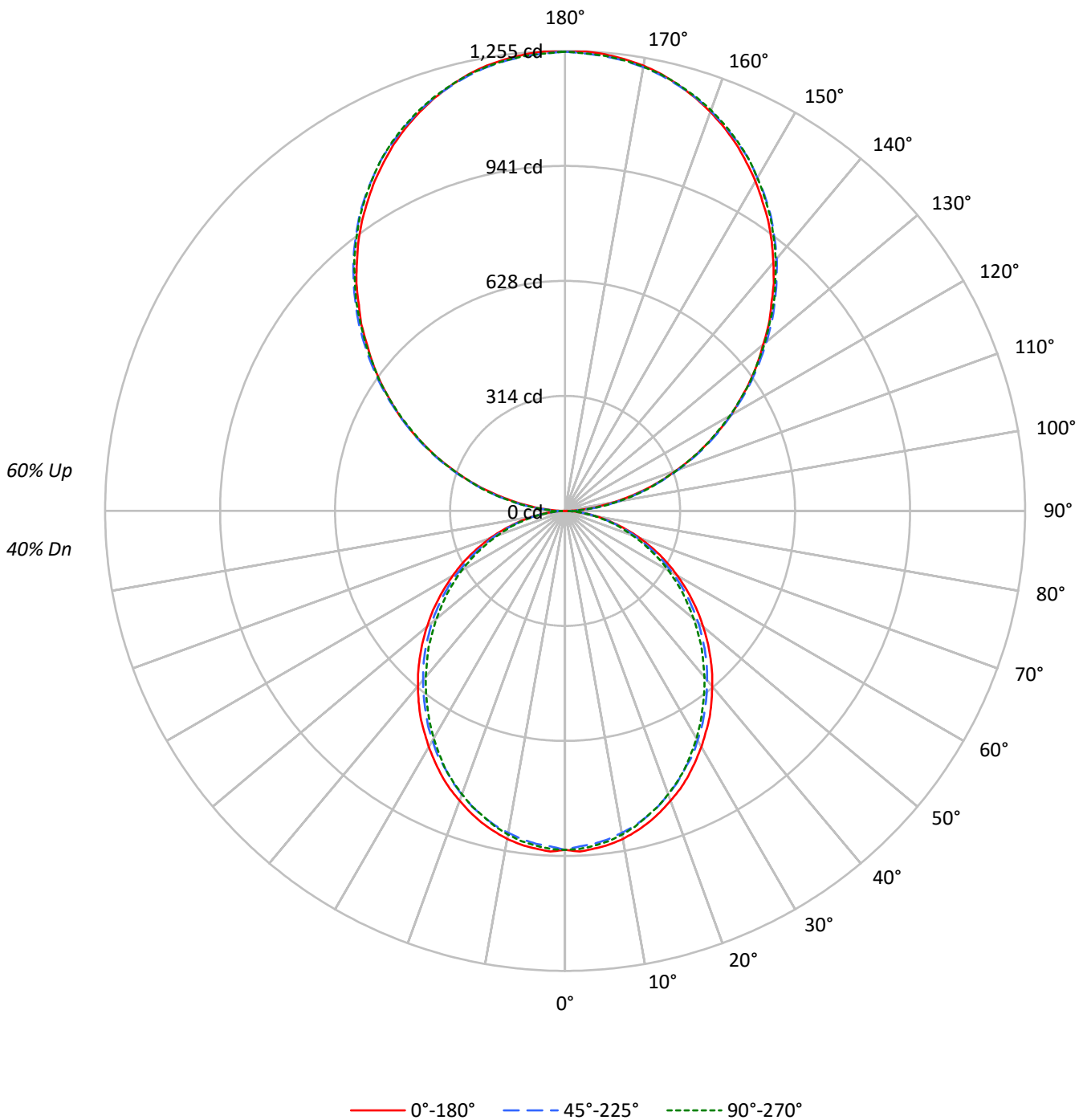
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5858.2 lumens  
Efficiency: N/A  
Efficacy: 96.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9963  
Total Harmonic Distortion (THDi): 0.065  
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	95	95	95	95	78	78	78	62	62	62	47	47	47	47	47	47	40
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	42	41	40	40	40	40	34
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33	33	33	33	28
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28	28	28	28	24
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	29	27	25	25	25	25	21
5	67	55	47	41	60	51	44	38	42	37	33	34	30	27	26	23	21	21	21	21	18
6	61	49	41	36	56	45	38	33	38	32	28	30	27	24	24	21	19	19	19	19	16
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17	17	17	17	14
8	52	40	33	28	48	37	30	26	31	26	22	25	21	18	20	17	15	15	15	15	13
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	16	14	14	14	14	11
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12	12	12	12	10

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

	0°	45°	90°
0°	2033	2033	2033
5°	2033	2001	2016
10°	2013	1969	1986
15°	1980	1932	1940
20°	1936	1883	1894
25°	1893	1825	1840
30°	1840	1770	1773
35°	1789	1707	1703
40°	1726	1642	1636
45°	1664	1577	1566
50°	1596	1509	1487
55°	1524	1431	1412
60°	1443	1338	1328
65°	1354	1241	1228
70°	1241	1123	1119
75°	1085	982	1016
80°	897	801	824
85°	606	506	517

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 1747 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.0	1.5
10°-20°	244.9	4.2
20°-30°	359.9	6.1
30°-40°	418.0	7.1
40°-50°	417.5	7.1
50°-60°	364.0	6.2
60°-70°	269.1	4.6
70°-80°	152.3	2.6
80°-90°	43.7	0.7
90°-100°	77.5	1.3
100°-110°	246.3	4.2
110°-120°	421.5	7.2
120°-130°	554.3	9.5
130°-140°	622.2	10.6
140°-150°	610.1	10.4
150°-160°	511.8	8.7
160°-170°	339.4	5.8
170°-180°	118.6	2.0
0°-30°	691.8	11.8
0°-40°	1109.8	18.9
0°-60°	1891.3	32.3
0°-90°	2356.3	40.2
90°-120°	745.3	12.7
90°-150°	2532.0	43.2
90°-180°	3502.0	59.8
0°-180°	5858.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	925	921	911	918	917	88
15°	880	875	863	867	862	248
25°	797	790	774	776	774	367
35°	687	678	664	659	654	429
45°	559	553	540	530	526	432
55°	423	418	407	397	392	378
65°	286	280	271	263	259	282
75°	149	148	143	138	140	159
85°	36	36	35	32	31	41
90°	1	14	37	35	36	6
95°	55	66	68	68	66	61
105°	227	230	233	234	234	240
115°	423	429	427	426	423	418
125°	615	625	622	618	617	550
135°	796	807	810	809	806	615
145°	966	974	980	981	977	604
155°	1105	1108	1111	1116	1113	508
165°	1202	1201	1201	1208	1203	339
175°	1250	1247	1245	1253	1246	119
180°	1253	1253	1253	1253	1253	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	924.7	924.7	924.7	924.7	924.7
2.5°	930.1	925.7	915.8	924.7	923.0
5°	924.7	921.2	911.4	918.5	916.8
7.5°	918.5	913.2	903.4	910.6	908.8
10°	908.8	902.5	891.9	899.0	896.4
12.5°	895.4	890.1	879.5	883.8	882.1
15°	880.3	875.0	863.4	867.0	862.5
17.5°	861.6	856.3	844.7	849.1	844.7
20°	841.1	835.8	823.4	826.0	822.5
22.5°	820.8	812.8	801.1	801.1	799.3
25°	796.7	789.6	774.5	776.3	774.5
27.5°	770.0	763.7	752.3	749.6	745.2
30°	743.4	736.3	722.9	720.3	716.7
32.5°	714.9	709.6	695.4	690.0	686.4
35°	687.4	678.5	664.2	658.9	654.4
37.5°	656.2	648.2	634.0	627.7	623.3
40°	624.2	617.1	602.8	594.9	591.4
42.5°	593.1	586.0	571.8	562.8	557.5
45°	559.4	553.1	539.7	530.0	526.4
47.5°	526.4	520.2	506.0	496.1	490.8
50°	491.7	487.3	474.8	462.4	458.0
52.5°	458.0	451.7	440.2	430.4	424.1
55°	423.3	418.0	407.3	396.6	392.2
57.5°	388.6	384.1	372.6	361.9	358.3
60°	353.9	350.4	337.9	328.1	325.5
62.5°	320.1	313.9	305.0	296.1	292.6
65°	285.5	280.1	271.2	263.2	258.8
67.5°	249.9	245.4	237.4	231.2	227.7
70°	217.0	213.4	205.4	199.2	195.7
72.5°	183.2	179.6	175.2	169.0	166.4
75°	149.3	147.7	143.1	137.8	139.7
77.5°	119.1	115.6	113.8	111.1	108.5
80°	89.0	88.0	86.2	83.6	81.8
82.5°	60.4	60.4	59.7	56.0	56.0
85°	36.4	35.6	34.7	32.0	31.1
87.5°	16.0	14.3	12.4	9.8	8.9
90°	1.1	13.6	37.0	34.8	35.9
92.5°	23.4	31.7	32.9	34.0	34.0
95°	55.1	65.8	67.6	67.6	65.8
97.5°	91.7	101.6	105.8	105.8	105.8
100°	134.0	142.8	145.8	145.8	144.7
102.5°	178.6	185.1	189.2	190.4	189.2
105°	227.4	230.4	232.7	234.5	234.5
107.5°	275.7	280.2	280.2	281.0	275.7
110°	322.5	328.6	328.6	328.6	325.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	373.1	379.5	378.4	375.4	373.1
115°	422.9	429.0	427.1	426.0	422.9
117.5°	472.5	480.8	475.5	472.5	469.4
120°	522.3	530.6	522.3	522.3	518.9
122.5°	567.6	578.2	572.9	569.9	567.6
125°	615.2	624.6	621.6	618.2	617.1
127.5°	661.6	673.4	669.2	664.6	661.6
130°	705.1	718.7	716.8	714.5	710.3
132.5°	753.8	764.4	765.2	759.9	756.8
135°	795.7	807.4	809.7	808.6	805.6
137.5°	842.6	852.0	853.9	853.1	848.6
140°	883.7	893.2	898.4	898.4	894.3
142.5°	926.0	935.5	938.5	939.6	935.5
145°	966.1	973.6	979.6	980.8	976.6
147.5°	1002.0	1011.4	1015.9	1017.8	1013.6
150°	1038.9	1045.4	1049.5	1052.9	1049.5
152.5°	1071.8	1078.2	1083.5	1087.7	1083.5
155°	1104.6	1107.6	1111.0	1116.3	1112.9
157.5°	1133.0	1135.2	1137.1	1144.7	1139.4
160°	1158.2	1160.5	1161.7	1168.1	1163.6
162.5°	1181.7	1181.7	1182.8	1190.0	1184.7
165°	1201.7	1200.6	1200.6	1208.2	1202.8
167.5°	1219.8	1216.4	1216.4	1224.0	1218.7
170°	1233.4	1230.4	1229.3	1236.8	1230.4
172.5°	1242.9	1239.8	1238.7	1246.3	1239.8
175°	1250.5	1247.4	1245.2	1252.7	1246.3
177.5°	1254.6	1251.6	1249.3	1255.7	1249.3
180°	1252.7	1252.7	1252.7	1252.7	1252.7



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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	8.64	9.42	9.68	10.47	11.87	8.20	8.98	9.24	10.02	11.43
	3H	10.28	10.98	11.32	12.03	13.45	9.79	10.49	10.84	11.54	12.96
	4H	10.85	11.51	11.91	12.57	14.00	10.36	11.02	11.41	12.07	13.50
	6H	11.23	11.84	12.30	12.90	14.34	10.73	11.34	11.80	12.40	13.84
	8H	11.32	11.90	12.40	12.98	14.42	10.82	11.40	11.90	12.48	13.92
	12H	11.36	11.91	12.44	12.98	14.44	10.85	11.41	11.93	12.47	13.94
4H	2H	9.08	9.75	10.15	10.80	12.23	8.73	9.39	9.79	10.44	11.88
	3H	10.92	11.47	11.99	12.55	14.00	10.51	11.06	11.58	12.15	13.59
	4H	11.61	12.12	12.69	13.19	14.66	11.19	11.70	12.27	12.77	14.24
	6H	12.11	12.54	13.19	13.64	15.10	11.67	12.11	12.76	13.21	14.66
	8H	12.24	12.65	13.33	13.74	15.21	11.81	12.21	12.90	13.30	14.78
	12H	12.30	12.67	13.41	13.77	15.25	11.86	12.22	12.96	13.33	14.81
8H	4H	11.79	12.20	12.88	13.29	14.76	11.42	11.82	12.50	12.91	14.38
	6H	12.40	12.73	13.51	13.86	15.33	12.01	12.35	13.12	13.48	14.95
	8H	12.60	12.90	13.72	14.01	15.50	12.21	12.51	13.33	13.62	15.11
	12H	12.72	12.98	13.84	14.08	15.61	12.31	12.57	13.43	13.67	15.20
12H	4H	11.77	12.14	12.88	13.24	14.72	11.40	11.77	12.51	12.87	14.35
	6H	12.42	12.72	13.54	13.83	15.32	12.05	12.34	13.16	13.45	14.95
	8H	12.64	12.90	13.76	14.01	15.54	12.26	12.52	13.38	13.63	15.16