

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: P909287

Luminaire Tested: DFN2DIP-SQ3F0-100D040US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909287
REPORT IS A COMBINATION OF REPORTS P901394 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D040US840-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

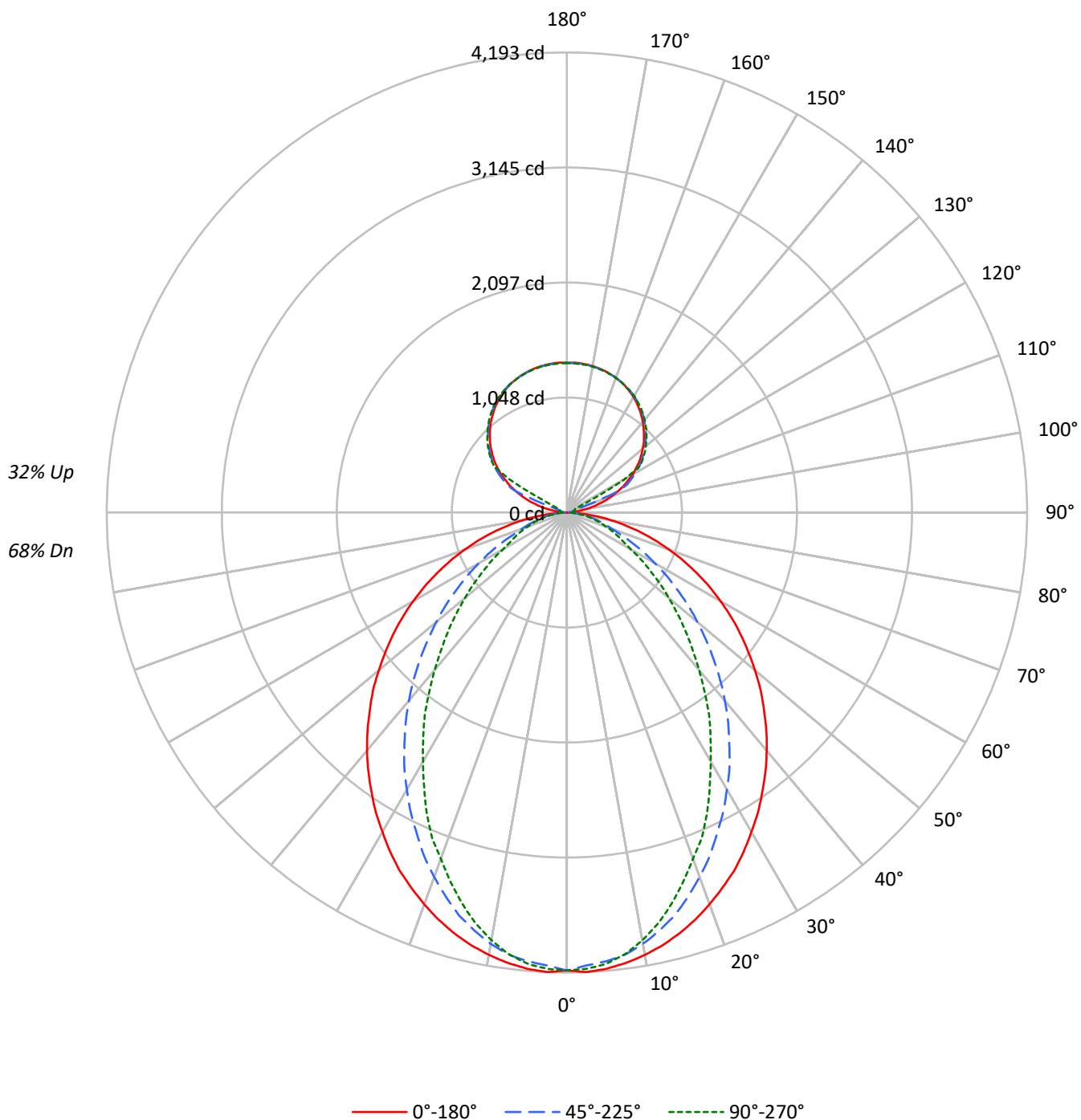
Lumens per Lamp: N/A
Luminaire Lumens: 12582.9 lumens
Efficiency: N/A
Efficacy: 97.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 128.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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			
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
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93	83	83	83	73	73	73	65	65	65
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	65	64	63	59	58	57
2	94	87	81	76	88	82	77	72	74	69	66	66	63	60	58	56	54	50	49	48
3	86	77	70	64	81	73	66	61	66	60	56	59	55	51	52	49	47	43	42	41
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41	38	37	36
5	73	62	53	48	69	59	51	46	53	47	42	48	43	39	43	39	36	33	32	31
6	68	56	47	42	64	53	46	40	48	42	38	43	39	35	39	35	32	30	29	28
7	63	50	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29	26	25	24
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26	24	23	22
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24	22	21	20
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22	20	19	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4782	4782	4782
5°	4787	4703	4735
10°	4736	4608	4579
15°	4668	4452	4340
20°	4579	4240	4046
25°	4487	4001	3763
30°	4366	3758	3404
35°	4246	3496	3089
40°	4124	3225	2728
45°	3983	2926	2400
50°	3837	2623	2081
55°	3684	2301	1774
60°	3506	1964	1459
65°	3302	1621	1311
70°	3054	1302	1184
75°	2742	1141	1074
80°	2291	948	926
85°	1554	617	687

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3983 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	391.2	3.1
10°-20°	1073.8	8.5
20°-30°	1507.6	12.0
30°-40°	1643.4	13.1
40°-50°	1510.5	12.0
50°-60°	1186.3	9.4
60°-70°	772.1	6.1
70°-80°	397.5	3.2
80°-90°	103.9	0.8
90°-100°	44.9	0.4
100°-110°	167.6	1.3
110°-120°	444.4	3.5
120°-130°	737.1	5.9
130°-140°	783.0	6.2
140°-150°	727.7	5.8
150°-160°	585.1	4.6
160°-170°	377.0	3.0
170°-180°	129.8	1.0
0°-30°	2972.6	23.6
0°-40°	4616.1	36.7
0°-60°	7312.8	58.1
0°-90°	8586.2	68.2
90°-120°	656.9	5.2
90°-150°	2904.8	23.1
90°-180°	3997.0	31.8
0°-180°	12582.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4174	4174	4174	4174	4174	
5°	4174	4155	4106	4140	4128	396
15°	3970	3928	3800	3728	3690	1119
25°	3604	3482	3233	3078	3022	1657
35°	3105	2912	2580	2342	2259	1943
45°	2538	2285	1889	1620	1530	1960
55°	1930	1636	1228	1001	929	1725
65°	1303	997	657	529	517	1292
75°	695	430	302	276	272	735
85°	162	83	72	72	72	186
90°	1	12	20	25	27	12
95°	64	32	38	43	42	76
105°	300	330	60	71	75	320
115°	567	584	609	152	81	558
125°	802	815	834	840	843	715
135°	992	1008	1017	1027	1025	767
145°	1151	1150	1167	1174	1169	720
155°	1268	1259	1271	1276	1269	584
165°	1336	1330	1333	1340	1333	377
175°	1366	1359	1361	1368	1358	130
180°	1363	1363	1363	1363	1363	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4173.8	4173.8	4173.8	4173.8	4173.8
2.5°	4192.6	4173.8	4132.1	4170.1	4162.6
5°	4173.8	4154.9	4105.6	4139.7	4128.4
7.5°	4139.7	4117.2	4064.3	4079.1	4060.4
10°	4094.4	4067.9	3992.6	3981.0	3958.6
12.5°	4037.9	4003.8	3901.6	3879.2	3837.5
15°	3969.8	3928.1	3799.8	3728.1	3690.5
17.5°	3890.4	3829.9	3671.3	3588.3	3527.8
20°	3799.8	3724.1	3535.3	3441.2	3357.8
22.5°	3701.7	3614.7	3395.5	3267.3	3210.8
25°	3603.5	3482.5	3233.2	3078.5	3021.6
27.5°	3486.5	3357.8	3082.1	2904.6	2817.6
30°	3361.8	3217.9	2915.8	2723.5	2621.3
32.5°	3240.9	3066.9	2757.5	2530.7	2436.1
35°	3104.9	2912.3	2580.0	2342.0	2258.6
37.5°	2972.7	2764.7	2413.7	2152.8	2058.6
40°	2832.9	2606.5	2239.8	1971.7	1873.5
42.5°	2689.4	2447.7	2066.3	1786.6	1692.3
45°	2538.3	2285.0	1888.8	1620.2	1529.6
47.5°	2394.9	2126.8	1718.8	1450.3	1367.4
50°	2236.1	1968.0	1552.5	1291.6	1212.6
52.5°	2081.0	1797.8	1393.8	1144.5	1072.8
55°	1930.0	1635.5	1227.5	1001.1	929.3
57.5°	1775.3	1473.1	1080.5	868.8	808.3
60°	1616.6	1314.4	925.3	733.0	672.5
62.5°	1461.9	1159.7	793.0	612.0	581.9
65°	1303.2	997.0	657.2	529.0	517.4
67.5°	1152.2	846.0	529.0	464.4	453.2
70°	993.4	698.9	438.0	400.3	385.2
72.5°	842.3	562.6	366.3	336.2	328.6
75°	694.9	430.4	302.2	275.7	272.1
77.5°	547.9	305.8	238.0	222.8	215.2
80°	411.5	219.2	181.2	166.3	166.3
82.5°	286.9	147.4	124.6	117.0	117.0
85°	162.3	82.9	71.7	71.7	71.7
87.5°	60.5	30.1	30.1	26.5	26.5
90°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.7	26.6
95°	64.0	31.5	38.4	43.4	42.4
97.5°	115.4	34.5	50.3	53.3	54.2
100°	174.6	39.5	56.2	64.0	66.0
102.5°	239.6	237.8	58.2	69.0	72.0
105°	299.8	329.5	60.2	71.0	74.9
107.5°	369.9	394.6	62.2	73.0	77.0
110°	437.1	457.7	172.7	74.0	77.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.9	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	662.0	520.8	262.4
120°	690.5	705.3	723.1	735.0	601.8
122.5°	745.7	761.5	781.3	787.2	788.2
125°	801.9	814.9	833.5	840.5	843.4
127.5°	853.2	867.1	881.9	891.8	892.7
130°	901.6	917.5	928.2	939.1	938.2
132.5°	950.9	963.8	974.6	983.5	982.6
135°	992.4	1008.2	1017.0	1026.9	1025.0
137.5°	1035.7	1047.5	1057.5	1067.3	1064.4
140°	1078.1	1086.1	1096.9	1105.8	1100.9
142.5°	1113.8	1120.6	1133.5	1141.2	1136.4
145°	1151.2	1150.2	1166.9	1173.9	1168.9
147.5°	1183.7	1180.7	1197.5	1202.4	1198.6
150°	1215.3	1208.4	1224.3	1230.1	1225.2
152.5°	1241.9	1234.1	1248.8	1254.8	1247.9
155°	1267.6	1258.8	1270.6	1276.5	1268.6
157.5°	1288.3	1280.4	1289.4	1296.3	1288.3
160°	1306.1	1300.1	1306.1	1311.9	1305.0
162.5°	1321.8	1316.0	1320.9	1327.8	1318.9
165°	1335.6	1329.8	1332.7	1339.6	1332.7
167.5°	1346.6	1340.5	1343.6	1350.5	1341.6
170°	1355.4	1349.5	1351.4	1358.4	1349.5
172.5°	1361.3	1355.4	1357.5	1364.3	1355.4
175°	1366.1	1359.3	1361.3	1368.2	1358.4
177.5°	1368.2	1361.3	1362.3	1369.3	1360.4
180°	1363.3	1363.3	1363.3	1363.3	1363.3

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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	14.10	15.11	14.90	15.92	16.90	10.07	11.07	10.86	11.88	12.87
	3H	15.79	16.69	16.59	17.51	18.52	11.26	12.16	12.06	12.98	13.99
	4H	16.40	17.25	17.23	18.08	19.11	11.71	12.56	12.54	13.39	14.42
	6H	16.83	17.61	17.66	18.45	19.49	12.04	12.82	12.87	13.65	14.69
	8H	16.96	17.70	17.80	18.55	19.60	12.13	12.87	12.97	13.73	14.77
	12H	17.03	17.73	17.87	18.58	19.65	12.18	12.88	13.02	13.73	14.80
4H	2H	14.14	14.99	14.97	15.82	16.84	10.68	11.53	11.51	12.35	13.38
	3H	15.98	16.69	16.82	17.54	18.59	12.04	12.74	12.87	13.60	14.64
	4H	16.68	17.32	17.53	18.17	19.25	12.59	13.23	13.44	14.08	15.16
	6H	17.20	17.75	18.06	18.63	19.71	13.01	13.56	13.88	14.44	15.52
	8H	17.37	17.89	18.24	18.76	19.85	13.14	13.65	14.01	14.53	15.62
	12H	17.47	17.94	18.36	18.83	19.93	13.21	13.67	14.09	14.57	15.66
8H	4H	16.66	17.17	17.53	18.05	19.14	12.88	13.39	13.75	14.27	15.36
	6H	17.22	17.65	18.12	18.57	19.65	13.39	13.82	14.29	14.74	15.83
	8H	17.44	17.81	18.34	18.73	19.83	13.58	13.96	14.49	14.87	15.97
	12H	17.58	17.91	18.49	18.82	19.97	13.70	14.03	14.61	14.94	16.10
12H	4H	16.62	17.08	17.50	17.97	19.07	12.89	13.35	13.78	14.25	15.34
	6H	17.20	17.58	18.11	18.49	19.59	13.44	13.82	14.35	14.73	15.84
	8H	17.42	17.76	18.33	18.66	19.82	13.65	13.99	14.56	14.89	16.05