

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: P919980

Luminaire Tested: DFN2DIP-SQ3F0-040D040US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919980
REPORT IS A COMBINATION OF REPORTS P899861 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D040US935-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

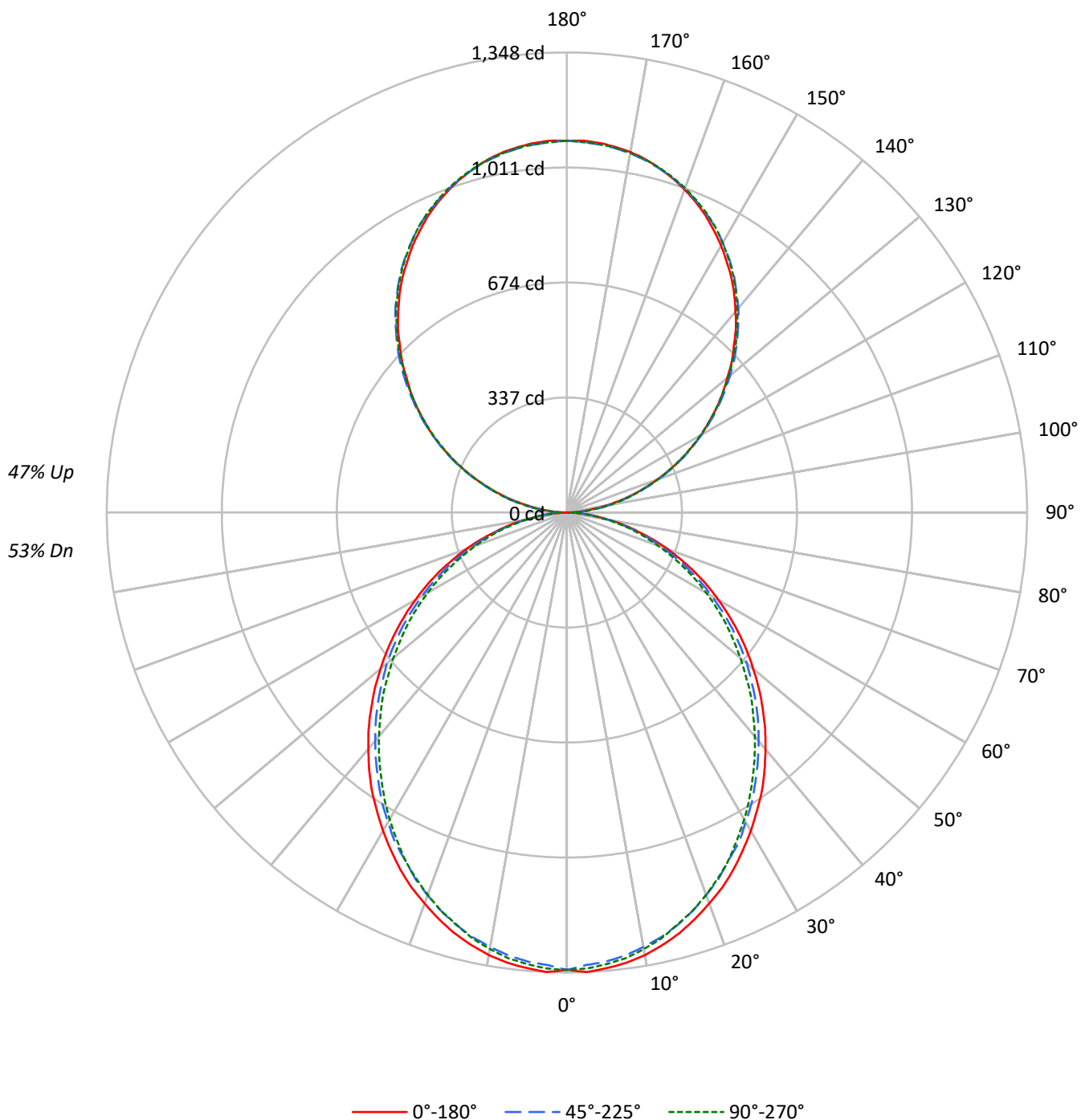
Lumens per Lamp: N/A
Luminaire Lumens: 6457.5 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 62.6
Input Voltage (V): 120
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

TEST NUMBER: P919980

CATALOG NUMBER: DFN2DIP-SQ3F0-040D040US935-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P919980

CATALOG NUMBER: DFN2DIP-SQ3F0-040D040US935-FLLFL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1535	1535	1535
5°	1537	1513	1524
10°	1524	1492	1503
15°	1500	1466	1470
20°	1469	1431	1437
25°	1438	1389	1398
30°	1399	1350	1349
35°	1362	1304	1297
40°	1317	1258	1248
45°	1272	1211	1197
50°	1223	1163	1139
55°	1171	1106	1085
60°	1112	1039	1023
65°	1048	970	950
70°	967	885	872
75°	854	783	798
80°	718	653	660
85°	506	433	432

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1272 cd/sqm

TEST NUMBER: P919980

CATALOG NUMBER: DFN2DIP-SQ3F0-040D040US935-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.1	2.0
10°-20°	354.9	5.5
20°-30°	521.5	8.1
30°-40°	605.7	9.4
40°-50°	605.0	9.4
50°-60°	527.5	8.2
60°-70°	389.9	6.0
70°-80°	220.6	3.4
80°-90°	61.3	0.9
90°-100°	67.4	1.0
100°-110°	214.2	3.3
110°-120°	366.5	5.7
120°-130°	482.0	7.5
130°-140°	541.0	8.4
140°-150°	530.5	8.2
150°-160°	445.0	6.9
160°-170°	295.1	4.6
170°-180°	103.2	1.6
0°-30°	1002.5	15.5
0°-40°	1608.3	24.9
0°-60°	2740.7	42.4
0°-90°	3412.6	52.8
90°-120°	648.0	10.0
90°-150°	2201.5	34.1
90°-180°	3045.0	47.2
0°-180°	6457.5	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	12	32	30	31	6
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	

TEST NUMBER: P919980

CATALOG NUMBER: DFN2DIP-SQ3F0-040D040US935-FLLFLL

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°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1



TEST NUMBER: P919980

CATALOG NUMBER: DFN2DIP-SQ3F0-040D040US935-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2

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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	8.99	9.87	9.92	10.82	12.05	8.54	9.43	9.47	10.38	11.61
	3H	10.64	11.44	11.59	12.40	13.65	10.15	10.95	11.10	11.91	13.16
	4H	11.23	11.98	12.19	12.95	14.21	10.74	11.49	11.69	12.45	13.71
	6H	11.63	12.32	12.60	13.29	14.57	11.13	11.82	12.10	12.79	14.07
	8H	11.73	12.39	12.71	13.38	14.65	11.23	11.89	12.21	12.88	14.15
	12H	11.78	12.41	12.76	13.39	14.68	11.27	11.90	12.25	12.88	14.18
4H	2H	9.45	10.20	10.41	11.16	12.43	9.09	9.84	10.05	10.81	12.07
	3H	11.31	11.94	12.28	12.93	14.21	10.90	11.53	11.87	12.52	13.80
	4H	12.02	12.60	13.00	13.58	14.88	11.60	12.17	12.58	13.16	14.46
	6H	12.53	13.03	13.53	14.04	15.34	12.10	12.60	13.10	13.61	14.90
	8H	12.68	13.14	13.68	14.15	15.46	12.24	12.71	13.24	13.71	15.02
	12H	12.75	13.17	13.77	14.19	15.51	12.30	12.72	13.32	13.74	15.06
8H	4H	12.22	12.68	13.21	13.68	14.99	11.84	12.30	12.83	13.30	14.62
	6H	12.84	13.22	13.86	14.27	15.58	12.46	12.84	13.48	13.89	15.20
	8H	13.06	13.40	14.09	14.43	15.76	12.67	13.00	13.70	14.04	15.37
	12H	13.19	13.49	14.22	14.51	15.89	12.78	13.07	13.81	14.10	15.47
12H	4H	12.20	12.62	13.22	13.64	14.96	11.83	12.25	12.85	13.27	14.59
	6H	12.87	13.21	13.90	14.24	15.57	12.50	12.84	13.53	13.87	15.20
	8H	13.11	13.41	14.14	14.43	15.81	12.73	13.03	13.76	14.05	15.43