

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: P908958

Luminaire Tested: DFN2DIP-SQ2F0-040D050US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908958
REPORT IS A COMBINATION OF REPORTS P899798 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D050US840-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

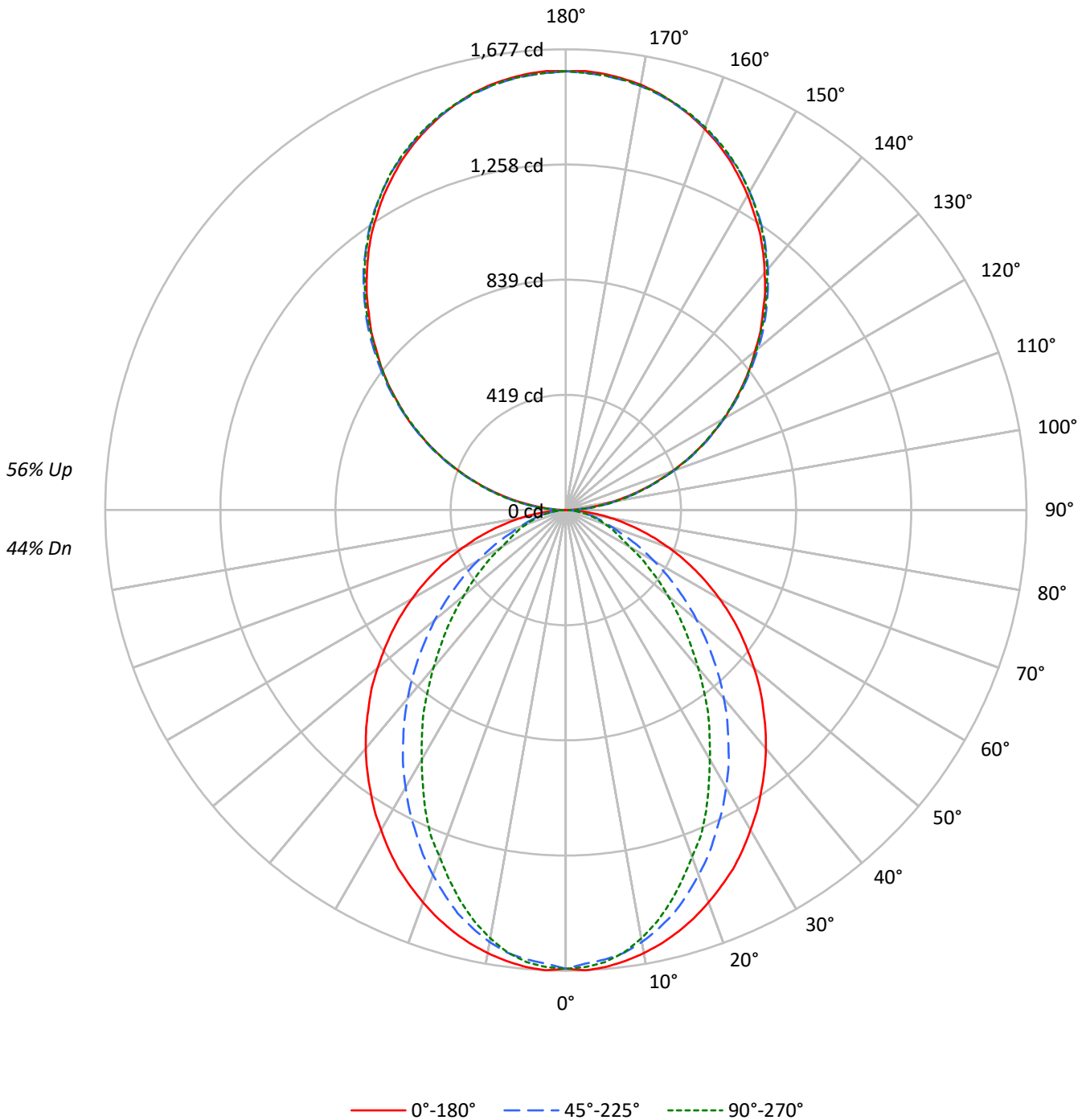
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7902.2 lumens
Efficiency: N/A
Efficacy: 111.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 71.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908958
CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US840-RLFL

Luminous Intensity Polar Plot





TEST NUMBER: P908958

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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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44				44
1	97	93	89	86	88	85	82	79	70	68	66	57	56	54	45	44	43	37				37
2	88	81	75	71	81	75	70	65	62	59	55	51	48	46	40	38	37	32				32
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32	28				28
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	32	30	28	24				24
5	68	57	49	43	62	53	46	41	44	39	35	37	33	30	29	27	25	21				21
6	63	51	43	38	57	47	41	35	40	35	31	33	29	26	27	24	22	19				19
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	25	22	20	17				17
8	54	42	35	30	50	39	32	28	33	28	24	28	24	21	23	20	18	15				15
9	50	39	31	26	46	36	29	25	31	25	22	26	22	19	21	18	16	14				14
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	19	17	15	13				13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3671	3671	3671
5°	3671	3605	3631
10°	3628	3526	3508
15°	3572	3402	3320
20°	3499	3234	3092
25°	3425	3047	2872
30°	3327	2856	2595
35°	3232	2652	2351
40°	3134	2441	2073
45°	3021	2208	1821
50°	2903	1974	1574
55°	2780	1725	1339
60°	2637	1465	1097
65°	2473	1203	981
70°	2273	958	881
75°	2020	829	792
80°	1659	673	671
85°	1080	418	477

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3021 cd/sqm



TEST NUMBER: P908958

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	2.0
10°-20°	429.5	5.4
20°-30°	603.0	7.6
30°-40°	657.4	8.3
40°-50°	604.2	7.6
50°-60°	474.5	6.0
60°-70°	308.9	3.9
70°-80°	159.0	2.0
80°-90°	45.1	0.6
90°-100°	98.8	1.3
100°-110°	314.0	4.0
110°-120°	537.3	6.8
120°-130°	706.6	8.9
130°-140°	793.2	10.0
140°-150°	777.8	9.8
150°-160°	652.5	8.3
160°-170°	432.7	5.5
170°-180°	151.2	1.9
0°-30°	1189.0	15.0
0°-40°	1846.4	23.4
0°-60°	2925.1	37.0
0°-90°	3438.1	43.5
90°-120°	950.1	12.0
90°-150°	3227.7	40.8
90°-180°	4464.0	56.5
0°-180°	7902.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1670	1670	1670	1670	1670	
5°	1670	1662	1642	1656	1651	158
15°	1588	1571	1520	1491	1476	447
25°	1441	1393	1293	1231	1209	663
35°	1242	1165	1032	937	903	777
45°	1015	914	756	648	612	784
55°	772	654	491	400	372	690
65°	521	399	263	212	207	517
75°	278	172	121	110	109	294
85°	65	33	29	29	29	75
90°	1	17	47	44	46	8
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	



TEST NUMBER: P908958

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US840-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1669.5	1669.5	1669.5	1669.5	1669.5
2.5°	1677.1	1669.5	1652.8	1668.1	1665.0
5°	1669.5	1661.9	1642.2	1655.9	1651.4
7.5°	1655.9	1646.9	1625.8	1631.6	1624.2
10°	1637.8	1627.2	1597.0	1592.4	1583.5
12.5°	1615.2	1601.5	1560.6	1551.7	1535.0
15°	1587.9	1571.2	1519.9	1491.3	1476.2
17.5°	1556.2	1532.0	1468.4	1435.3	1411.1
20°	1519.9	1489.7	1414.1	1376.4	1343.1
22.5°	1480.7	1445.9	1358.2	1306.9	1284.3
25°	1441.4	1393.0	1293.2	1231.4	1208.6
27.5°	1394.6	1343.1	1232.8	1161.9	1127.0
30°	1344.7	1287.2	1166.3	1089.3	1048.5
32.5°	1296.4	1226.8	1103.0	1012.3	974.4
35°	1242.0	1164.9	1032.0	936.8	903.4
37.5°	1189.1	1105.9	965.4	861.1	823.4
40°	1133.2	1042.6	896.0	788.7	749.4
42.5°	1075.7	979.1	826.5	714.6	676.9
45°	1015.3	914.0	755.5	648.1	611.9
47.5°	958.0	850.7	687.5	580.2	546.9
50°	894.4	787.2	621.0	516.6	485.0
52.5°	832.4	719.1	557.5	457.8	429.1
55°	772.0	654.2	491.0	400.4	371.7
57.5°	710.1	589.3	432.1	347.5	323.4
60°	646.6	525.7	370.1	293.2	269.0
62.5°	584.8	463.9	317.2	244.8	232.8
65°	521.3	398.8	262.9	211.6	206.9
67.5°	460.9	338.4	211.6	185.8	181.3
70°	397.4	279.5	175.2	160.2	154.0
72.5°	337.0	225.1	146.5	134.5	131.5
75°	277.9	172.2	120.9	110.3	108.9
77.5°	219.1	122.3	95.2	89.2	86.0
80°	164.6	87.7	72.4	66.6	66.6
82.5°	114.8	59.0	49.9	46.8	46.8
85°	64.9	33.2	28.7	28.7	28.7
87.5°	24.2	12.0	12.0	10.6	10.6
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0



TEST NUMBER: P908958

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US840-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9



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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	10.91	11.69	11.93	12.71	14.08	6.87	7.65	7.89	8.67	10.04
	3H	12.56	13.26	13.59	14.29	15.68	8.04	8.74	9.07	9.77	11.15
	4H	13.16	13.82	14.20	14.85	16.24	8.47	9.13	9.51	10.17	11.56
	6H	13.56	14.17	14.61	15.21	16.61	8.78	9.38	9.83	10.42	11.82
	8H	13.68	14.26	14.73	15.31	16.71	8.86	9.43	9.91	10.49	11.89
	12H	13.73	14.28	14.79	15.33	16.75	8.89	9.44	9.95	10.49	11.91
4H	2H	10.92	11.58	11.96	12.61	14.00	7.45	8.11	8.50	9.14	10.53
	3H	12.72	13.27	13.77	14.33	15.73	8.77	9.32	9.83	10.38	11.79
	4H	13.39	13.90	14.45	14.95	16.38	9.31	9.81	10.37	10.86	12.29
	6H	13.89	14.32	14.96	15.40	16.82	9.70	10.13	10.77	11.21	12.63
	8H	14.05	14.45	15.12	15.52	16.96	9.82	10.22	10.89	11.29	12.73
	12H	14.13	14.50	15.22	15.58	17.02	9.87	10.24	10.96	11.32	12.76
8H	4H	13.35	13.76	14.42	14.83	16.26	9.57	9.97	10.64	11.04	12.48
	6H	13.90	14.23	14.99	15.34	16.77	10.06	10.39	11.15	11.50	12.94
	8H	14.10	14.39	15.20	15.49	16.94	10.24	10.53	11.34	11.62	13.08
	12H	14.22	14.48	15.33	15.57	17.06	10.34	10.60	11.44	11.69	13.18
12H	4H	13.30	13.67	14.39	14.75	16.19	9.57	9.93	10.66	11.02	12.46
	6H	13.87	14.16	14.97	15.26	16.71	10.11	10.40	11.21	11.49	12.94
	8H	14.07	14.33	15.18	15.42	16.91	10.30	10.55	11.40	11.64	13.14