

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: P908980

Luminaire Tested: DFN2DIP-SQ2F0-050D050US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908980
REPORT IS A COMBINATION OF REPORTS P899799 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D050US840-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

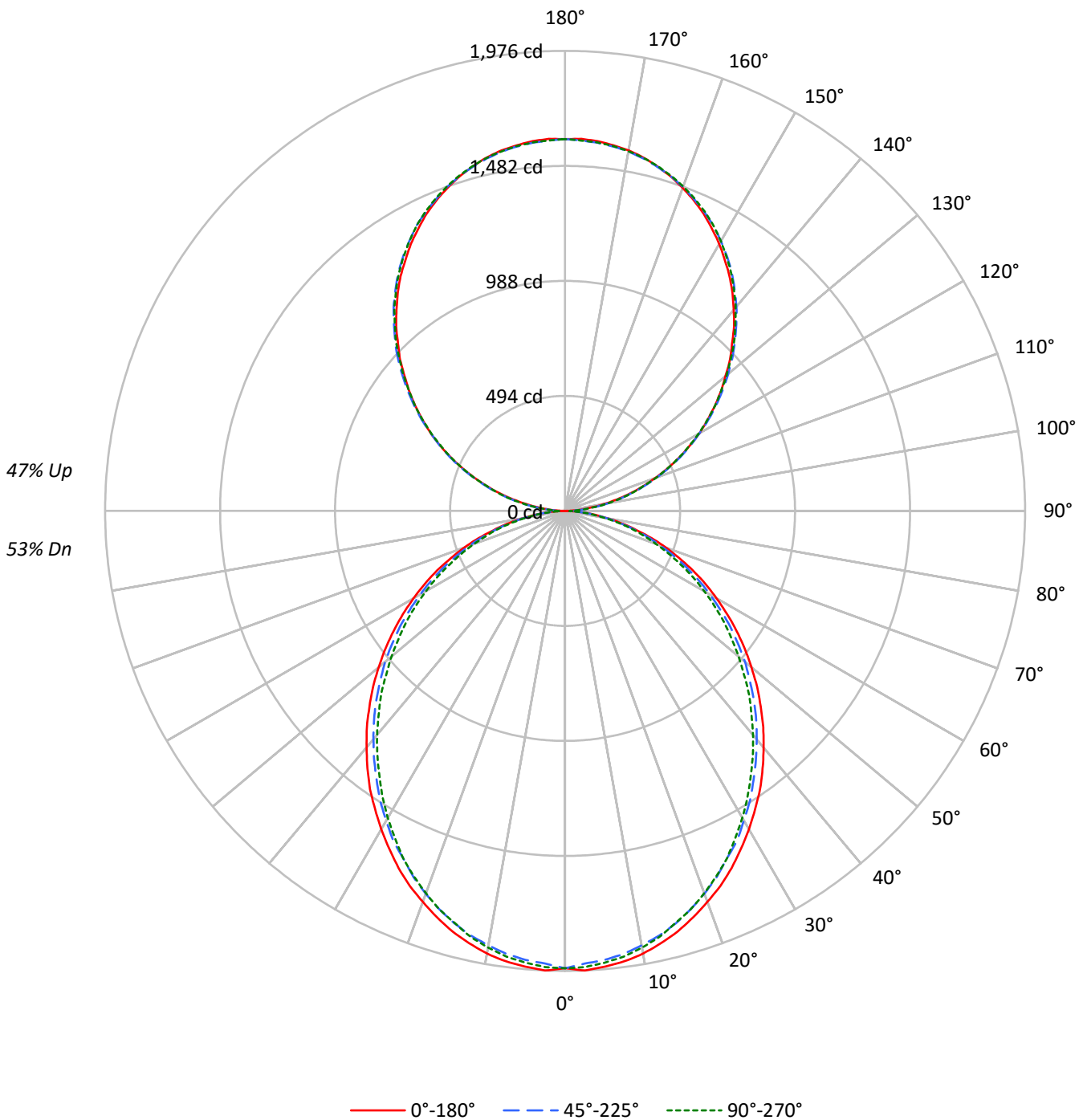
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9467.5 lumens
Efficiency: N/A
Efficacy: 115.9 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): 81.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	0
RCR																					
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	59	59	59	53
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	52	51	50	45
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42	46	44	42	37
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36	41	38	36	32
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31	36	33	31	27
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27	33	29	27	24
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24	30	26	24	21
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21	27	24	21	18
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19	25	21	19	16
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17	23	20	17	15
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15	21	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4320	4320	4320
5°	4320	4250	4283
10°	4277	4184	4219
15°	4207	4106	4122
20°	4114	4001	4023
25°	4022	3877	3910
30°	3908	3761	3768
35°	3800	3626	3618
40°	3668	3489	3475
45°	3536	3352	3327
50°	3391	3207	3158
55°	3239	3040	3001
60°	3066	2843	2821
65°	2877	2637	2608
70°	2636	2387	2378
75°	2307	2086	2157
80°	1905	1703	1752
85°	1288	1074	1100

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3536 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	2.0
10°-20°	520.3	5.5
20°-30°	764.6	8.1
30°-40°	888.1	9.4
40°-50°	887.0	9.4
50°-60°	773.4	8.2
60°-70°	571.7	6.0
70°-80°	323.5	3.4
80°-90°	89.9	0.9
90°-100°	98.8	1.0
100°-110°	314.0	3.3
110°-120°	537.3	5.7
120°-130°	706.6	7.5
130°-140°	793.2	8.4
140°-150°	777.8	8.2
150°-160°	652.5	6.9
160°-170°	432.7	4.6
170°-180°	151.2	1.6
0°-30°	1469.8	15.5
0°-40°	2357.9	24.9
0°-60°	4018.3	42.4
0°-90°	5003.4	52.8
90°-120°	950.1	10.0
90°-150°	3227.7	34.1
90°-180°	4464.0	47.2
0°-180°	9467.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	1	17	47	44	46	9
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	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
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



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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	12.50	13.39	13.43	14.34	15.57	12.05	12.94	12.99	13.89	15.12
	3H	14.14	14.94	15.09	15.90	17.15	13.65	14.45	14.60	15.41	16.66
	4H	14.72	15.47	15.68	16.44	17.70	14.22	14.98	15.18	15.94	17.20
	6H	15.10	15.80	16.07	16.77	18.04	14.60	15.30	15.57	16.27	17.54
	8H	15.20	15.86	16.18	16.85	18.12	14.70	15.36	15.68	16.35	17.62
	12H	15.24	15.87	16.23	16.85	18.15	14.74	15.37	15.72	16.35	17.64
4H	2H	12.95	13.71	13.92	14.67	15.93	12.60	13.35	13.56	14.31	15.58
	3H	14.80	15.43	15.77	16.42	17.70	14.39	15.02	15.36	16.01	17.29
	4H	15.50	16.07	16.48	17.06	18.36	15.07	15.65	16.06	16.64	17.94
	6H	16.00	16.49	16.99	17.50	18.80	15.56	16.06	16.56	17.07	18.37
	8H	16.14	16.60	17.13	17.60	18.92	15.70	16.16	16.70	17.17	18.48
	12H	16.20	16.62	17.22	17.64	18.96	15.75	16.17	16.77	17.19	18.51
8H	4H	15.68	16.15	16.68	17.15	18.46	15.31	15.77	16.30	16.77	18.09
	6H	16.29	16.68	17.31	17.72	19.03	15.91	16.29	16.93	17.34	18.65
	8H	16.50	16.84	17.53	17.87	19.20	16.11	16.45	17.14	17.48	18.81
	12H	16.62	16.92	17.65	17.94	19.32	16.21	16.51	17.24	17.53	18.91
12H	4H	15.67	16.09	16.68	17.11	18.43	15.30	15.72	16.31	16.74	18.06
	6H	16.32	16.66	17.35	17.69	19.02	15.95	16.28	16.97	17.31	18.64
	8H	16.55	16.84	17.58	17.87	19.24	16.17	16.46	17.20	17.49	18.86