

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: P907644

Luminaire Tested: DFN2DIP-4P3F0-020D050US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907644
REPORT IS A COMBINATION OF REPORTS P899060 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D050US840-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

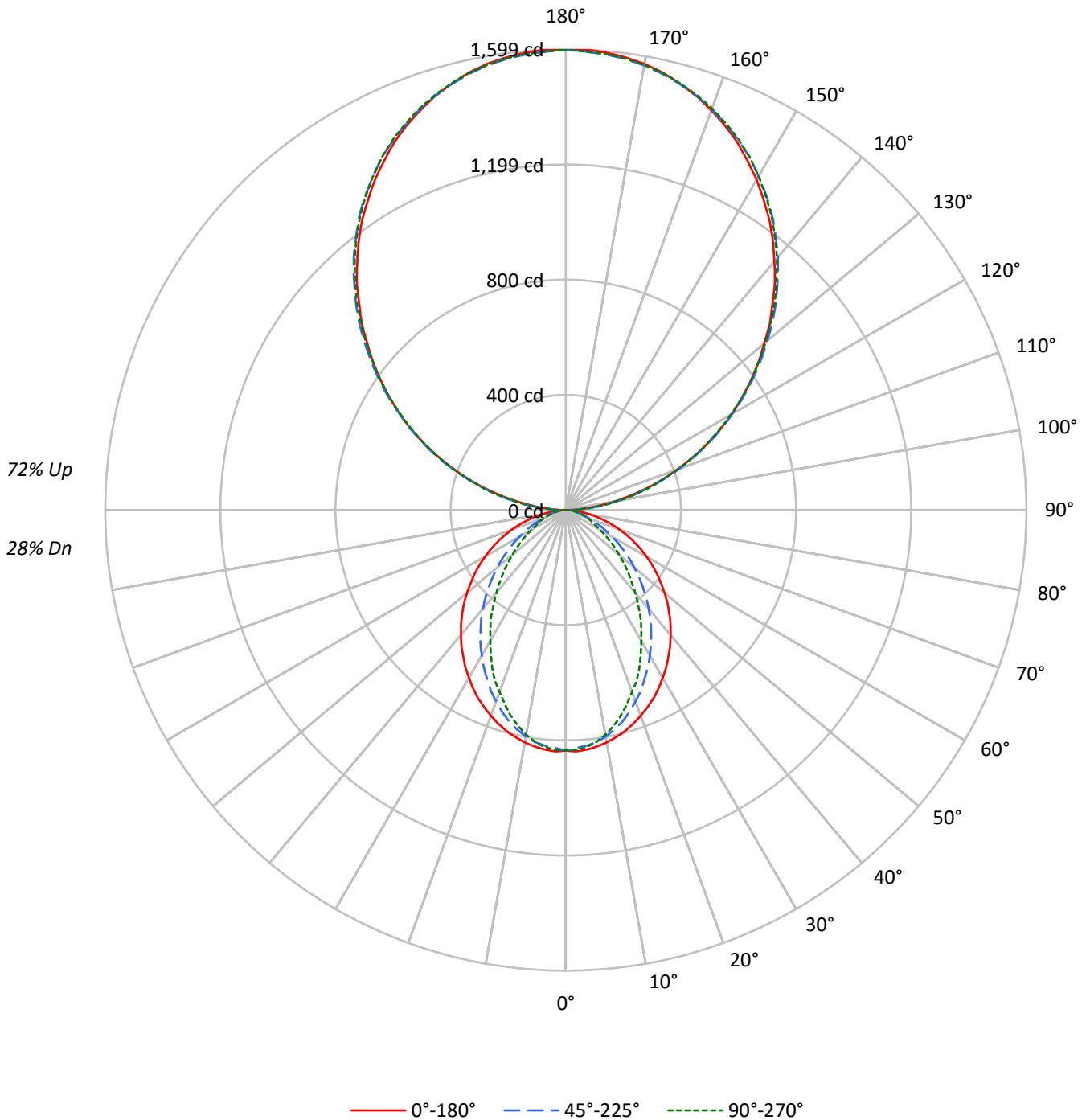
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6185.4 lumens
Efficiency: N/A
Efficacy: 115.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	36	36	36	28
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31	31	31	31	24
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26	26	26	26	20
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23	23	23	23	18
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20	20	20	20	15
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17	17	17	17	14
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15	15	15	15	12
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14	14	14	14	11
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12	12	12	12	10
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11	11	11	11	9
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10	10	10	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	951	951	951
5°	952	936	942
10°	942	917	911
15°	929	886	863
20°	911	843	805
25°	893	796	748
30°	868	748	677
35°	845	695	614
40°	820	642	543
45°	792	582	477
50°	763	522	414
55°	733	458	353
60°	698	391	290
65°	657	323	261
70°	607	259	236
75°	546	227	214
80°	456	189	184
85°	309	123	136

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1601 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.2	1.3
10°-20°	214.8	3.5
20°-30°	301.5	4.9
30°-40°	328.7	5.3
40°-50°	302.1	4.9
50°-60°	237.3	3.8
60°-70°	154.4	2.5
70°-80°	79.5	1.3
80°-90°	24.8	0.4
90°-100°	98.8	1.6
100°-110°	314.0	5.1
110°-120°	537.3	8.7
120°-130°	706.6	11.4
130°-140°	793.2	12.8
140°-150°	777.8	12.6
150°-160°	652.5	10.5
160°-170°	432.7	7.0
170°-180°	151.2	2.4
0°-30°	594.5	9.6
0°-40°	923.2	14.9
0°-60°	1462.6	23.6
0°-90°	1721.3	27.8
90°-120°	950.1	15.4
90°-150°	3227.7	52.2
90°-180°	4464.0	72.2
0°-180°	6185.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	835	835	835	835	835	
5°	835	831	821	828	826	79
15°	794	786	760	746	738	224
25°	721	696	647	616	604	331
35°	621	582	516	468	452	389
45°	508	457	378	324	306	392
55°	386	327	246	200	186	345
65°	261	199	132	106	104	258
75°	139	86	60	55	54	147
85°	32	17	14	14	14	37
90°	1	17	47	44	46	6
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°	834.8	834.8	834.8	834.8	834.8
2.5°	838.5	834.8	826.4	834.0	832.5
5°	834.8	831.0	821.1	828.0	825.7
7.5°	828.0	823.4	812.8	815.9	812.0
10°	818.9	813.5	798.5	796.2	791.7
12.5°	807.6	800.7	780.3	775.9	767.5
15°	794.0	785.6	759.9	745.6	738.1
17.5°	778.1	766.0	734.3	717.6	705.6
20°	759.9	744.8	707.1	688.2	671.6
22.5°	740.3	723.0	679.1	653.5	642.2
25°	720.7	696.5	646.6	615.7	604.3
27.5°	697.3	671.6	616.4	580.9	563.5
30°	672.4	643.6	583.2	544.7	524.2
32.5°	648.1	613.4	551.5	506.1	487.3
35°	621.0	582.5	516.0	468.4	451.7
37.5°	594.5	552.9	482.7	430.6	411.7
40°	566.5	521.3	448.0	394.4	374.7
42.5°	537.9	489.6	413.2	357.3	338.5
45°	507.7	457.0	377.8	324.1	305.9
47.5°	479.0	425.4	343.8	290.0	273.5
50°	447.3	393.6	310.5	258.3	242.6
52.5°	416.2	359.5	278.7	228.9	214.6
55°	386.0	327.1	245.5	200.3	185.8
57.5°	355.1	294.6	216.1	173.8	161.7
60°	323.4	262.9	185.1	146.6	134.5
62.5°	292.4	232.0	158.6	122.4	116.3
65°	260.6	199.4	131.5	105.8	103.5
67.5°	230.5	169.2	105.8	92.9	90.7
70°	198.6	139.8	87.6	80.1	77.1
72.5°	168.4	112.5	73.2	67.3	65.7
75°	139.0	86.0	60.4	55.1	54.4
77.5°	109.6	61.2	47.6	44.5	43.0
80°	82.3	43.8	36.3	33.2	33.2
82.5°	57.4	29.5	24.9	23.4	23.4
85°	32.4	16.6	14.3	14.3	14.3
87.5°	12.1	6.1	6.1	5.3	5.3
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	4.40	5.07	5.53	6.19	7.75	0.36	1.04	1.49	2.16	3.71
	3H	6.06	6.66	7.20	7.79	9.37	1.53	2.14	2.67	3.26	4.84
	4H	6.66	7.23	7.80	8.36	9.94	1.97	2.54	3.12	3.67	5.25
	6H	7.07	7.59	8.22	8.73	10.32	2.27	2.80	3.43	3.93	5.52
	8H	7.19	7.69	8.35	8.84	10.42	2.36	2.86	3.52	4.01	5.59
	12H	7.24	7.72	8.40	8.86	10.46	2.39	2.87	3.55	4.01	5.61
4H	2H	4.39	4.97	5.55	6.10	7.68	0.93	1.51	2.09	2.64	4.22
	3H	6.20	6.68	7.36	7.84	9.43	2.26	2.74	3.42	3.90	5.49
	4H	6.89	7.33	8.05	8.47	10.08	2.80	3.24	3.96	4.38	5.99
	6H	7.39	7.76	8.56	8.93	10.53	3.20	3.58	4.37	4.74	6.34
	8H	7.56	7.91	8.73	9.07	10.68	3.32	3.67	4.49	4.83	6.45
	12H	7.64	7.96	8.83	9.13	10.75	3.38	3.69	4.56	4.86	6.48
8H	4H	6.84	7.19	8.01	8.35	9.97	3.06	3.41	4.23	4.57	6.19
	6H	7.40	7.69	8.58	8.89	10.50	3.57	3.86	4.75	5.06	6.67
	8H	7.61	7.86	8.80	9.04	10.67	3.75	4.00	4.94	5.18	6.82
	12H	7.74	7.96	8.93	9.13	10.80	3.86	4.08	5.05	5.25	6.92
12H	4H	6.79	7.10	7.97	8.27	9.89	3.06	3.38	4.24	4.55	6.17
	6H	7.37	7.62	8.56	8.80	10.43	3.61	3.87	4.81	5.04	6.68
	8H	7.58	7.80	8.78	8.98	10.64	3.81	4.03	5.01	5.21	6.88