

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: P907620

Luminaire Tested: DFN2DIP-4P2F0-040D020US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907620
REPORT IS A COMBINATION OF REPORTS P899016 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D020US840-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

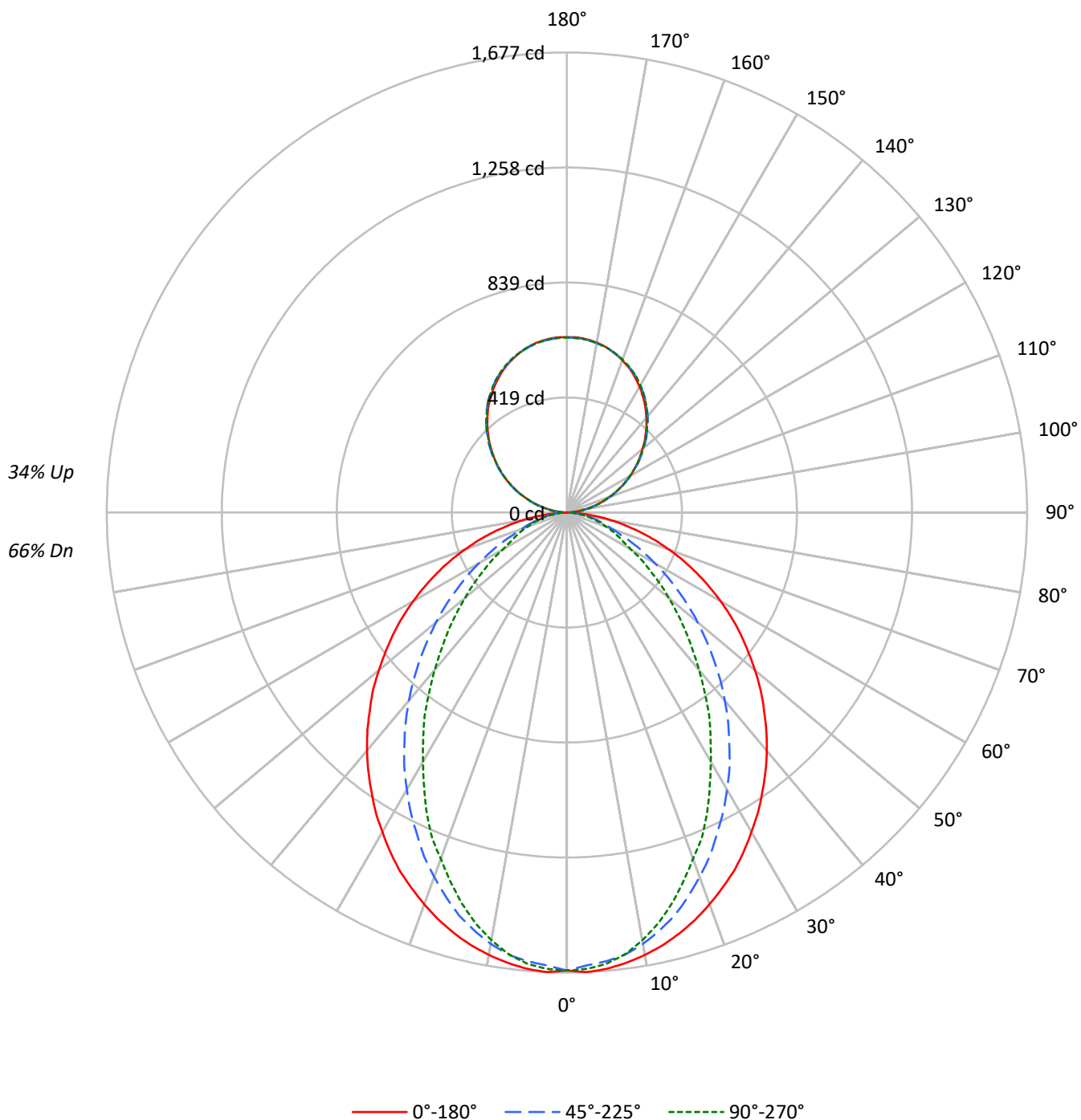
Lumens per Lamp: N/A
Luminaire Lumens: 5221.0 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 56.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4180	4180	4180
5°	4179	4103	4133
10°	4129	4012	3992
15°	4064	3869	3778
20°	3980	3677	3517
25°	3895	3463	3266
30°	3783	3244	2949
35°	3673	3011	2671
40°	3560	2770	2354
45°	3430	2505	2067
50°	3295	2237	1787
55°	3153	1953	1518
60°	2988	1658	1243
65°	2799	1359	1111
70°	2569	1080	996
75°	2278	932	893
80°	1864	753	754
85°	1202	463	532

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3430 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	3.0
10°-20°	429.5	8.2
20°-30°	603.0	11.6
30°-40°	657.4	12.6
40°-50°	604.2	11.6
50°-60°	474.5	9.1
60°-70°	308.9	5.9
70°-80°	159.0	3.0
80°-90°	42.4	0.8
90°-100°	39.5	0.8
100°-110°	125.6	2.4
110°-120°	214.9	4.1
120°-130°	282.7	5.4
130°-140°	317.3	6.1
140°-150°	311.1	6.0
150°-160°	261.0	5.0
160°-170°	173.1	3.3
170°-180°	60.5	1.2
0°-30°	1189.0	22.8
0°-40°	1846.4	35.4
0°-60°	2925.1	56.0
0°-90°	3435.4	65.8
90°-120°	380.0	7.3
90°-150°	1291.1	24.7
90°-180°	1786.0	34.2
0°-180°	5221.0	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	7	19	18	18	5
95°	28	34	34	34	34	31
105°	116	117	119	120	120	122
115°	216	219	218	217	216	213
125°	314	318	317	315	315	280
135°	406	412	413	412	411	314
145°	493	496	500	500	498	308
155°	563	565	566	569	568	259
165°	613	612	612	616	613	173
175°	638	636	635	639	636	61
180°	639	639	639	639	639	

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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°	0.6	7.0	18.9	17.7	18.3
92.5°	11.9	16.2	16.8	17.4	17.4
95°	28.1	33.5	34.4	34.4	33.5
97.5°	46.8	51.8	53.9	53.9	53.9
100°	68.4	72.8	74.3	74.3	73.7
102.5°	91.1	94.3	96.4	97.0	96.4
105°	115.9	117.4	118.7	119.6	119.6
107.5°	140.6	142.9	142.9	143.3	140.6
110°	164.5	167.5	167.5	167.5	166.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	190.3	193.5	193.0	191.4	190.3
115°	215.7	218.7	217.8	217.2	215.7
117.5°	241.0	245.2	242.5	241.0	239.3
120°	266.3	270.5	266.3	266.3	264.6
122.5°	289.4	294.8	292.2	290.6	289.4
125°	313.7	318.5	317.0	315.3	314.7
127.5°	337.4	343.4	341.2	338.9	337.4
130°	359.5	366.5	365.5	364.4	362.2
132.5°	384.4	389.8	390.1	387.5	385.9
135°	405.8	411.7	412.8	412.3	410.7
137.5°	429.6	434.4	435.5	435.1	432.7
140°	450.6	455.4	458.2	458.2	456.1
142.5°	472.2	477.0	478.6	479.1	477.0
145°	492.6	496.4	499.6	500.1	498.0
147.5°	510.9	515.7	518.1	519.0	516.8
150°	529.8	533.0	535.1	536.8	535.1
152.5°	546.5	549.8	552.5	554.6	552.5
155°	563.3	564.8	566.5	569.3	567.5
157.5°	577.7	578.9	579.9	583.7	581.0
160°	590.7	591.8	592.4	595.6	593.3
162.5°	602.6	602.6	603.1	606.8	604.1
165°	612.8	612.2	612.2	616.0	613.4
167.5°	622.0	620.3	620.3	624.1	621.5
170°	628.9	627.4	626.8	630.7	627.4
172.5°	633.8	632.2	631.7	635.5	632.2
175°	637.6	636.1	634.9	638.7	635.5
177.5°	639.7	638.2	637.0	640.3	637.0
180°	638.7	638.7	638.7	638.7	638.7

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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	13.34	14.32	14.16	15.15	16.18	9.30	10.28	10.12	11.11	12.14
	3H	15.01	15.88	15.84	16.73	17.78	10.48	11.36	11.31	12.20	13.26
	4H	15.61	16.43	16.45	17.28	18.35	10.92	11.75	11.77	12.60	13.67
	6H	16.02	16.78	16.88	17.64	18.72	11.24	12.00	12.09	12.85	13.93
	8H	16.14	16.86	17.01	17.74	18.82	11.32	12.04	12.19	12.92	14.00
	12H	16.20	16.89	17.07	17.75	18.86	11.36	12.05	12.23	12.92	14.02
4H	2H	13.37	14.20	14.22	15.05	16.12	9.90	10.73	10.75	11.58	12.65
	3H	15.19	15.87	16.05	16.76	17.84	11.24	11.93	12.11	12.81	13.90
	4H	15.87	16.49	16.74	17.37	18.48	11.78	12.40	12.65	13.28	14.39
	6H	16.37	16.91	17.26	17.81	18.93	12.19	12.72	13.07	13.63	14.74
	8H	16.54	17.04	17.43	17.94	19.06	12.30	12.81	13.20	13.71	14.83
	12H	16.63	17.08	17.54	17.99	19.13	12.36	12.82	13.28	13.73	14.87
8H	4H	15.84	16.34	16.74	17.24	18.37	12.06	12.56	12.95	13.46	14.58
	6H	16.39	16.80	17.31	17.74	18.87	12.55	12.97	13.47	13.91	15.03
	8H	16.59	16.96	17.52	17.89	19.04	12.73	13.10	13.66	14.03	15.17
	12H	16.72	17.04	17.65	17.97	19.16	12.84	13.16	13.77	14.09	15.28
12H	4H	15.80	16.25	16.71	17.17	18.30	12.06	12.52	12.98	13.43	14.57
	6H	16.36	16.73	17.29	17.66	18.81	12.60	12.96	13.53	13.90	15.04
	8H	16.57	16.90	17.50	17.82	19.02	12.80	13.12	13.73	14.04	15.24