

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: P921253

Luminaire Tested: DFN2DIP-4P2F0-030D030US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921253
REPORT IS A COMBINATION OF REPORTS P900540 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D030US940-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

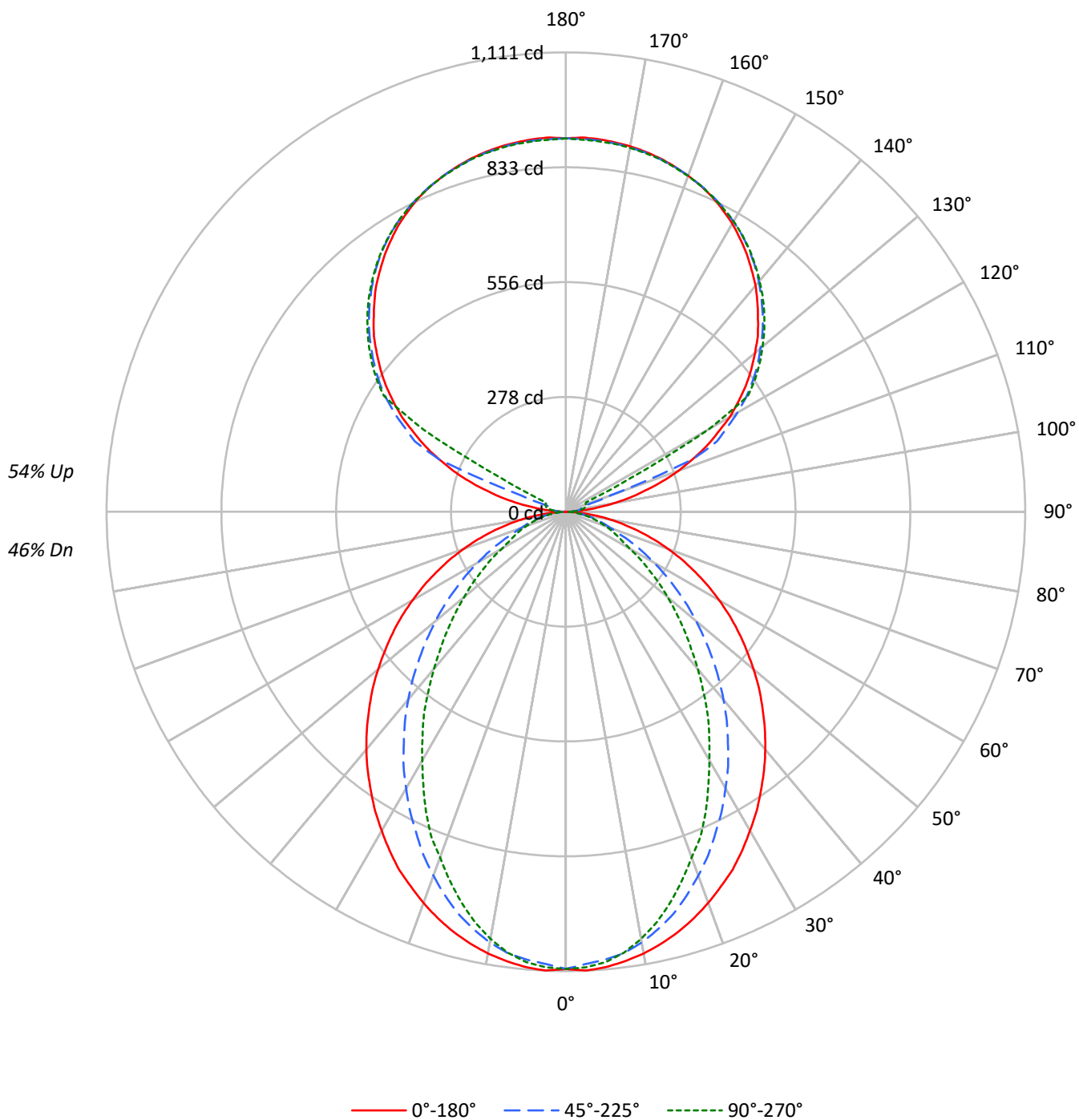
Lumens per Lamp: N/A
Luminaire Lumens: 4922.3 lumens
Efficiency: N/A
Efficacy: 96.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 51
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	106	106	106	106		98	98	98	98		81	81	81		66	66	66		53	53	53
1	97	93	90	86		89	86	83	80		72	70	68		59	58	56		47	46	45
2	89	82	76	71		82	76	70	66		63	60	57		52	50	48		42	40	39
3	81	72	65	60		75	67	61	56		56	52	48		47	43	41		38	35	34
4	75	64	57	51		68	60	53	48		50	45	41		42	38	35		34	31	29
5	69	58	50	44		63	53	46	41		45	40	36		38	34	31		31	28	26
6	63	52	44	38		58	48	41	36		41	36	32		34	30	27		28	25	23
7	59	47	39	34		54	44	37	32		37	32	28		31	27	24		26	23	21
8	55	43	35	30		50	40	33	28		34	29	25		29	25	22		24	21	19
9	51	39	32	27		47	36	30	25		31	26	22		27	23	20		22	19	17
10	48	36	29	24		44	33	27	23		29	24	20		25	21	18		20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2768	2768	2768
5°	2767	2718	2737
10°	2734	2657	2644
15°	2691	2563	2502
20°	2636	2435	2329
25°	2579	2293	2163
30°	2505	2149	1953
35°	2432	1994	1769
40°	2358	1834	1559
45°	2272	1659	1369
50°	2182	1482	1183
55°	2088	1293	1006
60°	1979	1098	824
65°	1854	900	736
70°	1701	715	659
75°	1509	618	591
80°	1235	499	499
85°	796	307	352

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2272 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	2.1
10°-20°	284.5	5.8
20°-30°	399.4	8.1
30°-40°	435.3	8.8
40°-50°	400.1	8.1
50°-60°	314.2	6.4
60°-70°	204.5	4.2
70°-80°	105.3	2.1
80°-90°	28.5	0.6
90°-100°	29.8	0.6
100°-110°	111.0	2.3
110°-120°	294.3	6.0
120°-130°	488.2	9.9
130°-140°	518.5	10.5
140°-150°	481.9	9.8
150°-160°	387.5	7.9
160°-170°	249.7	5.1
170°-180°	85.9	1.7
0°-30°	787.5	16.0
0°-40°	1222.8	24.8
0°-60°	1937.2	39.4
0°-90°	2275.4	46.2
90°-120°	435.1	8.8
90°-150°	1923.7	39.1
90°-180°	2647.0	53.8
0°-180°	4922.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1106	1106	1106	1106	1106	
5°	1106	1101	1088	1097	1094	105
15°	1052	1040	1007	988	978	296
25°	955	922	856	816	800	439
35°	822	771	683	620	598	515
45°	672	605	500	429	405	519
55°	511	433	325	265	246	457
65°	345	264	174	140	137	342
75°	184	114	80	73	72	195
85°	43	22	19	19	19	49
90°	1	8	13	16	18	5
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1105.6	1105.6	1105.6	1105.6	1105.6
2.5°	1110.6	1105.6	1094.6	1104.7	1102.7
5°	1105.6	1100.6	1087.6	1096.6	1093.6
7.5°	1096.6	1090.7	1076.7	1080.6	1075.6
10°	1084.6	1077.6	1057.7	1054.5	1048.7
12.5°	1069.6	1060.6	1033.6	1027.6	1016.5
15°	1051.6	1040.5	1006.6	987.6	977.6
17.5°	1030.5	1014.6	972.5	950.6	934.5
20°	1006.6	986.5	936.5	911.6	889.5
22.5°	980.6	957.5	899.5	865.5	850.5
25°	954.6	922.5	856.5	815.5	800.4
27.5°	923.5	889.5	816.5	769.5	746.4
30°	890.6	852.5	772.4	721.5	694.4
32.5°	858.4	812.4	730.5	670.4	645.3
35°	822.5	771.4	683.4	620.4	598.3
37.5°	787.5	732.4	639.4	570.2	545.4
40°	750.5	690.5	593.3	522.3	496.3
42.5°	712.4	648.5	547.3	473.2	448.3
45°	672.4	605.3	500.3	429.2	405.2
47.5°	634.4	563.4	455.3	384.1	362.2
50°	592.4	521.3	411.3	342.1	321.2
52.5°	551.3	476.3	369.3	303.2	284.2
55°	511.2	433.2	325.1	265.2	246.2
57.5°	470.3	390.2	286.2	230.2	214.1
60°	428.2	348.2	245.1	194.1	178.2
62.5°	387.3	307.2	210.1	162.1	154.2
65°	345.2	264.1	174.1	140.1	137.1
67.5°	305.2	224.1	140.1	123.1	120.0
70°	263.1	185.1	116.0	106.0	102.0
72.5°	223.1	149.0	97.0	89.1	87.0
75°	184.0	114.0	80.1	73.0	72.1
77.5°	145.1	81.0	63.0	59.0	57.0
80°	109.1	58.1	48.0	44.1	44.1
82.5°	76.0	39.1	33.0	31.0	31.0
85°	43.0	21.9	19.0	19.0	19.0
87.5°	16.1	7.9	7.9	7.0	7.0
90°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9

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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	10.19	10.99	11.18	11.99	13.32	6.15	6.95	7.14	7.95	9.28
	3H	11.84	12.55	12.85	13.57	14.91	7.31	8.03	8.32	9.04	10.39
	4H	12.43	13.11	13.45	14.12	15.48	7.75	8.42	8.77	9.44	10.80
	6H	12.83	13.46	13.86	14.47	15.84	8.05	8.67	9.08	9.69	11.06
	8H	12.95	13.54	13.98	14.58	15.94	8.13	8.72	9.16	9.76	11.12
	12H	13.00	13.56	14.04	14.59	15.98	8.16	8.73	9.20	9.75	11.14
4H	2H	10.20	10.87	11.22	11.89	13.24	6.73	7.41	7.75	8.42	9.78
	3H	12.00	12.56	13.03	13.60	14.97	8.05	8.61	9.08	9.66	11.03
	4H	12.67	13.18	13.71	14.22	15.61	8.58	9.09	9.62	10.13	11.52
	6H	13.16	13.60	14.21	14.66	16.05	8.98	9.42	10.03	10.48	11.86
	8H	13.32	13.74	14.37	14.79	16.19	9.09	9.50	10.14	10.55	11.96
	12H	13.40	13.78	14.47	14.84	16.25	9.14	9.52	10.21	10.58	11.99
8H	4H	12.63	13.04	13.68	14.09	15.49	8.84	9.26	9.89	10.31	11.71
	6H	13.17	13.51	14.24	14.60	16.00	9.33	9.67	10.41	10.77	12.17
	8H	13.37	13.67	14.45	14.75	16.17	9.51	9.81	10.59	10.88	12.30
	12H	13.49	13.75	14.58	14.83	16.29	9.61	9.87	10.69	10.94	12.40
12H	4H	12.58	12.95	13.65	14.02	15.42	8.84	9.22	9.91	10.28	11.69
	6H	13.14	13.44	14.22	14.52	15.94	9.38	9.68	10.46	10.75	12.17
	8H	13.35	13.61	14.43	14.68	16.14	9.57	9.83	10.65	10.90	12.36

END OF REPORT