

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: P921292

Luminaire Tested: DFN2DIP-4P3F0-030D020US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921292
REPORT IS A COMBINATION OF REPORTS P899032 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D020US940-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

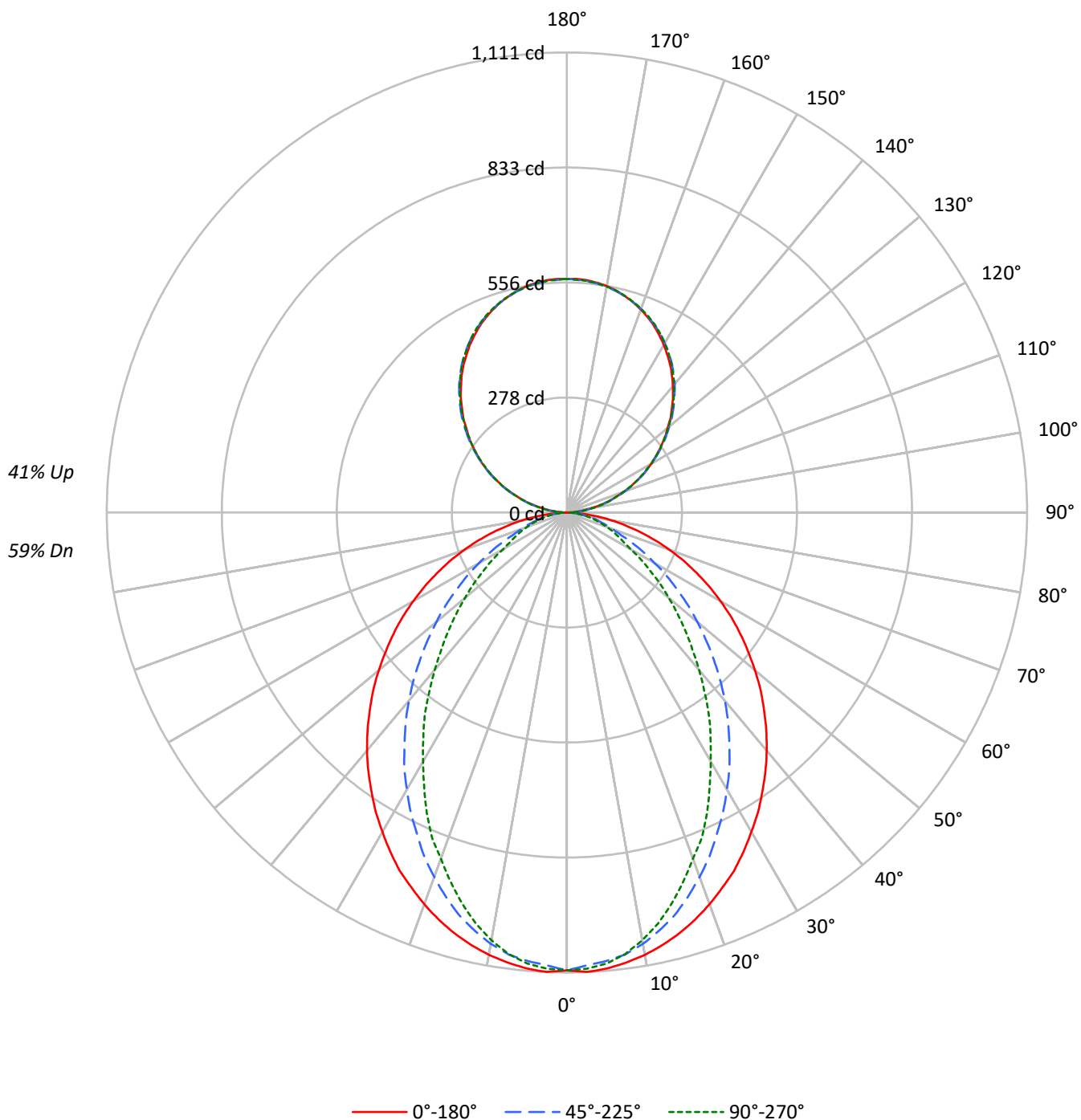
Lumens per Lamp: N/A
Luminaire Lumens: 3852.2 lumens
Efficiency: N/A
Efficacy: 93.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 41.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1260	1260	1260
5°	1261	1239	1247
10°	1248	1214	1207
15°	1230	1173	1143
20°	1206	1117	1066
25°	1182	1054	991
30°	1150	990	897
35°	1119	921	814
40°	1087	850	719
45°	1050	771	632
50°	1011	691	548
55°	971	606	467
60°	924	517	384
65°	870	427	346
70°	805	343	312
75°	722	301	283
80°	604	250	244
85°	410	163	181

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1050 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	2.7
10°-20°	284.5	7.4
20°-30°	399.4	10.4
30°-40°	435.3	11.3
40°-50°	400.1	10.4
50°-60°	314.2	8.2
60°-70°	204.5	5.3
70°-80°	105.3	2.7
80°-90°	28.5	0.7
90°-100°	34.9	0.9
100°-110°	110.9	2.9
110°-120°	189.8	4.9
120°-130°	249.6	6.5
130°-140°	280.2	7.3
140°-150°	274.7	7.1
150°-160°	230.4	6.0
160°-170°	152.8	4.0
170°-180°	53.4	1.4
0°-30°	787.5	20.4
0°-40°	1222.8	31.7
0°-60°	1937.2	50.3
0°-90°	2275.5	59.1
90°-120°	335.6	8.7
90°-150°	1140.0	29.6
90°-180°	1577.0	40.9
0°-180°	3852.2	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°	0	6	17	16	16	4
95°	25	30	30	30	30	28
105°	102	104	105	106	106	108
115°	190	193	192	192	190	188
125°	277	281	280	278	278	248
135°	358	364	364	364	363	277
145°	435	438	441	442	440	272
155°	497	499	500	503	501	229
165°	541	541	541	544	542	153
175°	563	562	561	564	561	53
180°	564	564	564	564	564	

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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°	0.5	6.2	16.7	15.6	16.1
92.5°	10.5	14.3	14.8	15.3	15.3
95°	24.8	29.6	30.4	30.4	29.6
97.5°	41.3	45.7	47.6	47.6	47.6
100°	60.4	64.3	65.6	65.6	65.1
102.5°	80.4	83.3	85.2	85.7	85.2
105°	102.4	103.7	104.8	105.6	105.6
107.5°	124.1	126.2	126.2	126.5	124.1
110°	145.3	147.9	147.9	147.9	146.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	168.0	170.9	170.4	169.0	168.0
115°	190.5	193.1	192.3	191.8	190.5
117.5°	212.8	216.5	214.1	212.8	211.3
120°	235.1	238.9	235.1	235.1	233.6
122.5°	255.6	260.3	258.0	256.6	255.6
125°	277.0	281.2	279.9	278.4	277.9
127.5°	297.9	303.2	301.3	299.3	297.9
130°	317.4	323.6	322.7	321.7	319.9
132.5°	339.4	344.2	344.5	342.1	340.7
135°	358.3	363.6	364.5	364.1	362.7
137.5°	379.3	383.6	384.5	384.1	382.1
140°	397.9	402.2	404.6	404.6	402.7
142.5°	417.0	421.2	422.6	423.0	421.2
145°	435.0	438.4	441.1	441.6	439.7
147.5°	451.1	455.4	457.4	458.2	456.4
150°	467.8	470.6	472.5	474.0	472.5
152.5°	482.6	485.4	487.9	489.7	487.9
155°	497.4	498.7	500.2	502.7	501.1
157.5°	510.1	511.1	512.0	515.4	513.0
160°	521.6	522.5	523.1	525.9	523.9
162.5°	532.1	532.1	532.5	535.8	533.4
165°	541.1	540.6	540.6	543.9	541.6
167.5°	549.2	547.7	547.7	551.1	548.8
170°	555.4	554.0	553.5	556.9	554.0
172.5°	559.6	558.2	557.8	561.2	558.2
175°	563.0	561.7	560.6	564.0	561.2
177.5°	564.9	563.6	562.5	565.3	562.5
180°	564.0	564.0	564.0	564.0	564.0

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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	8.72	9.63	9.60	10.53	11.67	4.68	5.59	5.57	6.49	7.63
	3H	10.40	11.22	11.30	12.12	13.29	5.87	6.69	6.77	7.59	8.76
	4H	11.01	11.78	11.92	12.69	13.87	6.32	7.09	7.23	8.00	9.18
	6H	11.43	12.14	12.35	13.06	14.25	6.64	7.35	7.56	8.27	9.45
	8H	11.56	12.23	12.49	13.17	14.35	6.73	7.40	7.66	8.34	9.53
	12H	11.62	12.26	12.56	13.19	14.40	6.77	7.41	7.71	8.34	9.55
4H	2H	8.75	9.52	9.66	10.43	11.60	5.29	6.06	6.20	6.97	8.14
	3H	10.58	11.22	11.51	12.16	13.35	6.64	7.27	7.56	8.22	9.41
	4H	11.27	11.85	12.21	12.79	14.01	7.18	7.76	8.12	8.70	9.92
	6H	11.79	12.29	12.74	13.25	14.46	7.60	8.10	8.55	9.06	10.28
	8H	11.96	12.43	12.91	13.38	14.61	7.73	8.19	8.68	9.15	10.38
	12H	12.06	12.48	13.03	13.45	14.68	7.79	8.21	8.76	9.19	10.42
8H	4H	11.24	11.71	12.19	12.67	13.90	7.46	7.93	8.42	8.89	10.12
	6H	11.81	12.19	12.78	13.19	14.42	7.98	8.36	8.96	9.36	10.59
	8H	12.02	12.36	13.01	13.35	14.59	8.16	8.51	9.15	9.49	10.74
	12H	12.16	12.46	13.15	13.44	14.73	8.28	8.58	9.27	9.56	10.86
12H	4H	11.20	11.62	12.17	12.59	13.83	7.47	7.89	8.44	8.87	10.10
	6H	11.78	12.12	12.77	13.11	14.36	8.03	8.37	9.01	9.36	10.60
	8H	12.00	12.30	12.99	13.28	14.58	8.24	8.54	9.22	9.52	10.81