

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: P902169

Luminaire Tested: DFN2DIP-4P2F0-040D030US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902169
REPORT IS A COMBINATION OF REPORTS P900542 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D030US830-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

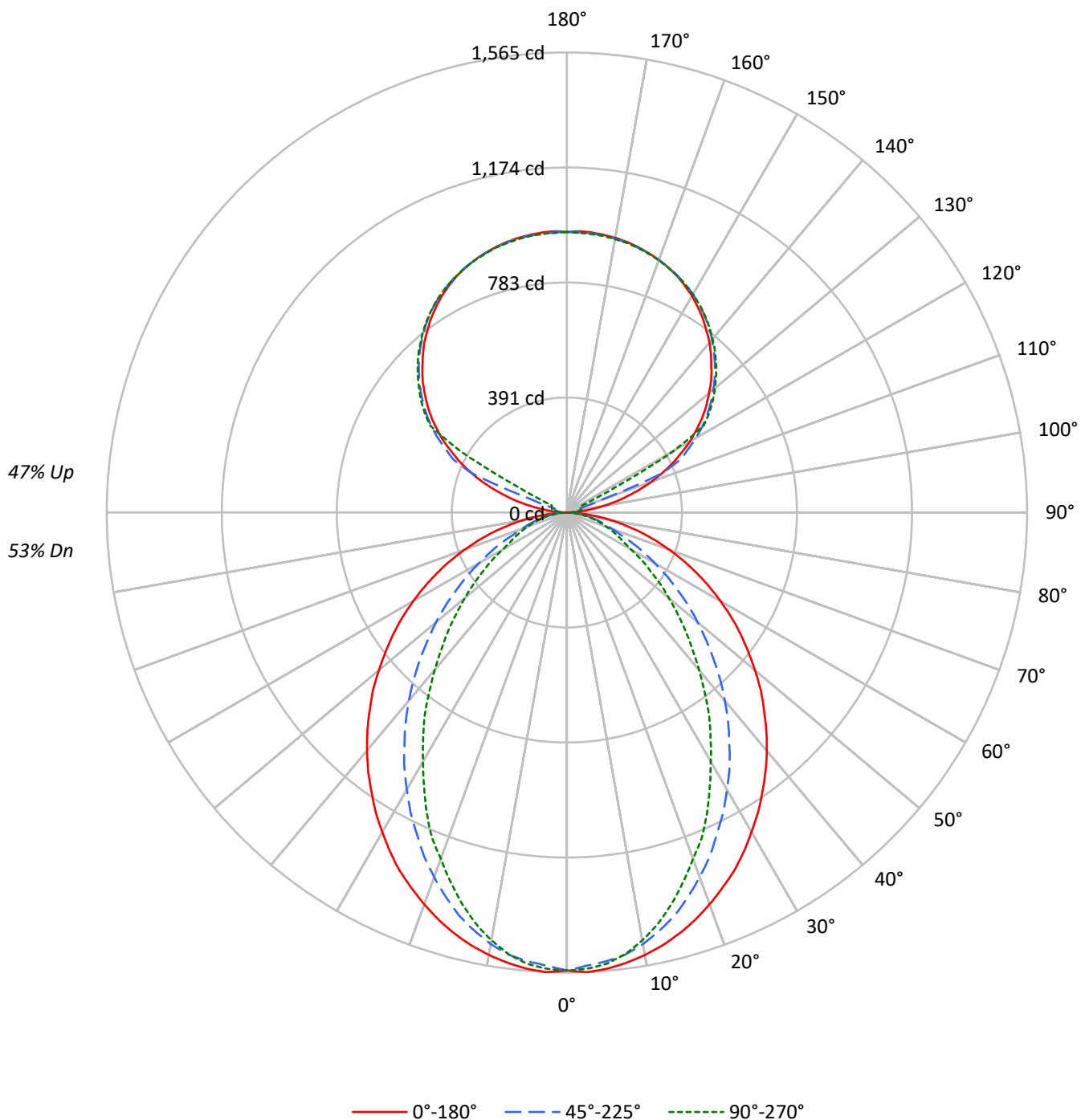
Lumens per Lamp: N/A
Luminaire Lumens: 6004.0 lumens
Efficiency: N/A
Efficacy: 94.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 63.8
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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51
2	91	83	78	73	84	78	73	68	67	63	60	57	54	52	47	45	44
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	42	40	38
4	76	66	58	52	70	61	55	49	53	48	44	45	42	38	38	35	33
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	28	26
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23
8	56	44	36	31	52	41	34	29	36	31	27	31	27	24	27	24	21
9	52	40	33	28	48	38	31	26	33	28	24	29	25	22	25	22	19
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3902	3902	3902
5°	3900	3830	3858
10°	3854	3745	3726
15°	3793	3611	3526
20°	3715	3432	3283
25°	3635	3232	3048
30°	3531	3028	2753
35°	3428	2810	2493
40°	3323	2585	2198
45°	3201	2337	1929
50°	3075	2088	1668
55°	2943	1823	1417
60°	2789	1547	1161
65°	2612	1268	1037
70°	2398	1008	929
75°	2127	870	833
80°	1739	703	703
85°	1122	433	496

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3201 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	2.4
10°-20°	400.9	6.7
20°-30°	562.8	9.4
30°-40°	613.5	10.2
40°-50°	563.9	9.4
50°-60°	442.9	7.4
60°-70°	288.3	4.8
70°-80°	148.4	2.5
80°-90°	39.6	0.7
90°-100°	31.5	0.5
100°-110°	117.3	2.0
110°-120°	311.1	5.2
120°-130°	516.0	8.6
130°-140°	548.1	9.1
140°-150°	509.4	8.5
150°-160°	409.6	6.8
160°-170°	263.9	4.4
170°-180°	90.8	1.5
0°-30°	1109.8	18.5
0°-40°	1723.3	28.7
0°-60°	2730.1	45.5
0°-90°	3206.3	53.4
90°-120°	459.9	7.7
90°-150°	2033.4	33.9
90°-180°	2798.0	46.6
0°-180°	6004.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1546	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	721	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
90°	1	8	14	17	19	6
95°	45	22	27	30	30	53
105°	210	231	42	50	52	224
115°	397	409	426	106	57	391
125°	561	570	584	588	590	501
135°	695	706	712	719	718	537
145°	806	805	817	822	818	504
155°	887	881	889	894	888	409
165°	935	931	933	938	933	264
175°	956	952	953	958	951	91
180°	954	954	954	954	954	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.2	1558.2	1558.2	1558.2	1558.2
2.5°	1565.3	1558.2	1542.7	1556.9	1554.0
5°	1558.2	1551.1	1532.8	1545.5	1541.3
7.5°	1545.5	1537.1	1517.4	1522.9	1515.9
10°	1528.6	1518.7	1490.5	1486.2	1477.9
12.5°	1507.5	1494.8	1456.6	1448.2	1432.7
15°	1482.1	1466.5	1418.6	1391.9	1377.8
17.5°	1452.5	1429.8	1370.6	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.7	1253.6
22.5°	1382.0	1349.5	1267.6	1219.7	1198.7
25°	1345.3	1300.1	1207.0	1149.3	1128.0
27.5°	1301.7	1253.6	1150.7	1084.4	1051.9
30°	1255.1	1201.4	1088.5	1016.7	978.6
32.5°	1209.9	1145.0	1029.4	944.8	909.5
35°	1159.2	1087.2	963.2	874.3	843.2
37.5°	1109.8	1032.2	901.1	803.7	768.5
40°	1057.6	973.1	836.2	736.1	699.5
42.5°	1004.0	913.8	771.4	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.6	482.2	452.7
52.5°	776.9	671.2	520.4	427.3	400.5
55°	720.6	610.6	458.3	373.7	346.9
57.5°	662.8	550.0	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.1	228.5	217.3
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
90°	0.7	8.3	13.8	17.3	18.6
92.5°	17.3	14.5	16.6	18.0	18.6
95°	44.9	22.1	26.9	30.4	29.7
97.5°	80.8	24.2	35.2	37.3	38.0
100°	122.2	27.6	39.4	44.9	46.3
102.5°	167.8	166.5	40.7	48.3	50.4
105°	209.9	230.6	42.1	49.7	52.5
107.5°	258.9	276.2	43.5	51.1	53.9
110°	305.9	320.4	120.8	51.8	54.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	350.2	362.5	350.8	53.2	55.2
115°	397.0	408.8	426.0	106.3	56.6
117.5°	437.8	451.6	463.4	364.6	183.7
120°	483.3	493.7	506.1	514.4	421.2
122.5°	522.0	533.1	547.0	551.0	551.8
125°	561.4	570.3	583.5	588.3	590.4
127.5°	597.3	606.9	617.4	624.2	624.9
130°	631.1	642.2	649.8	657.3	656.8
132.5°	665.6	674.7	682.2	688.4	687.8
135°	694.7	705.8	711.9	718.9	717.5
137.5°	725.0	733.3	740.3	747.2	745.1
140°	754.7	760.3	767.8	774.0	770.6
142.5°	779.7	784.5	793.4	798.9	795.5
145°	805.9	805.1	816.9	821.7	818.2
147.5°	828.6	826.5	838.3	841.7	839.0
150°	850.7	845.9	857.0	861.0	857.6
152.5°	869.3	863.8	874.2	878.4	873.5
155°	887.3	881.2	889.4	893.5	888.1
157.5°	901.8	896.4	902.6	907.4	901.8
160°	914.3	910.1	914.3	918.4	913.5
162.5°	925.3	921.1	924.6	929.4	923.2
165°	934.9	930.9	932.9	937.7	932.9
167.5°	942.5	938.4	940.5	945.4	939.1
170°	948.8	944.6	946.0	950.8	944.6
172.5°	952.9	948.8	950.2	955.0	948.8
175°	956.3	951.5	952.9	957.7	950.8
177.5°	957.7	952.9	953.7	958.5	952.3
180°	954.3	954.3	954.3	954.3	954.3

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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	12.06	12.91	12.99	13.86	15.09	8.01	8.87	8.95	9.82	11.05
	3H	13.71	14.48	14.66	15.44	16.68	9.19	9.95	10.13	10.91	12.16
	4H	14.31	15.03	15.27	15.99	17.25	9.62	10.35	10.58	11.31	12.57
	6H	14.71	15.38	15.68	16.35	17.61	9.93	10.59	10.90	11.56	12.83
	8H	14.83	15.46	15.81	16.45	17.71	10.01	10.64	10.99	11.63	12.89
	12H	14.88	15.49	15.86	16.46	17.75	10.04	10.65	11.03	11.62	12.91
4H	2H	12.07	12.80	13.04	13.76	15.02	8.60	9.33	9.57	10.29	11.55
	3H	13.88	14.48	14.85	15.47	16.74	9.93	10.53	10.91	11.52	12.79
	4H	14.55	15.10	15.54	16.09	17.38	10.46	11.01	11.45	12.00	13.29
	6H	15.05	15.52	16.04	16.53	17.82	10.86	11.33	11.86	12.34	13.63
	8H	15.21	15.65	16.21	16.65	17.96	10.98	11.42	11.97	12.42	13.73
	12H	15.29	15.69	16.31	16.71	18.02	11.03	11.43	12.05	12.45	13.76
8H	4H	14.52	14.96	15.52	15.96	17.27	10.73	11.17	11.73	12.17	13.48
	6H	15.06	15.42	16.08	16.47	17.77	11.22	11.59	12.24	12.63	13.93
	8H	15.26	15.58	16.29	16.61	17.94	11.40	11.72	12.43	12.75	14.07
	12H	15.38	15.67	16.42	16.69	18.06	11.50	11.78	12.53	12.81	14.17
12H	4H	14.47	14.87	15.49	15.88	17.20	10.73	11.13	11.75	12.15	13.46
	6H	15.03	15.35	16.06	16.38	17.71	11.26	11.59	12.30	12.62	13.94
	8H	15.24	15.52	16.27	16.54	17.91	11.46	11.74	12.49	12.76	14.13

END OF REPORT