

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: P924041

Luminaire Tested: DFN2DIP-4P3F0-040D020US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924041
REPORT IS A COMBINATION OF REPORTS P900554 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D020US950-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

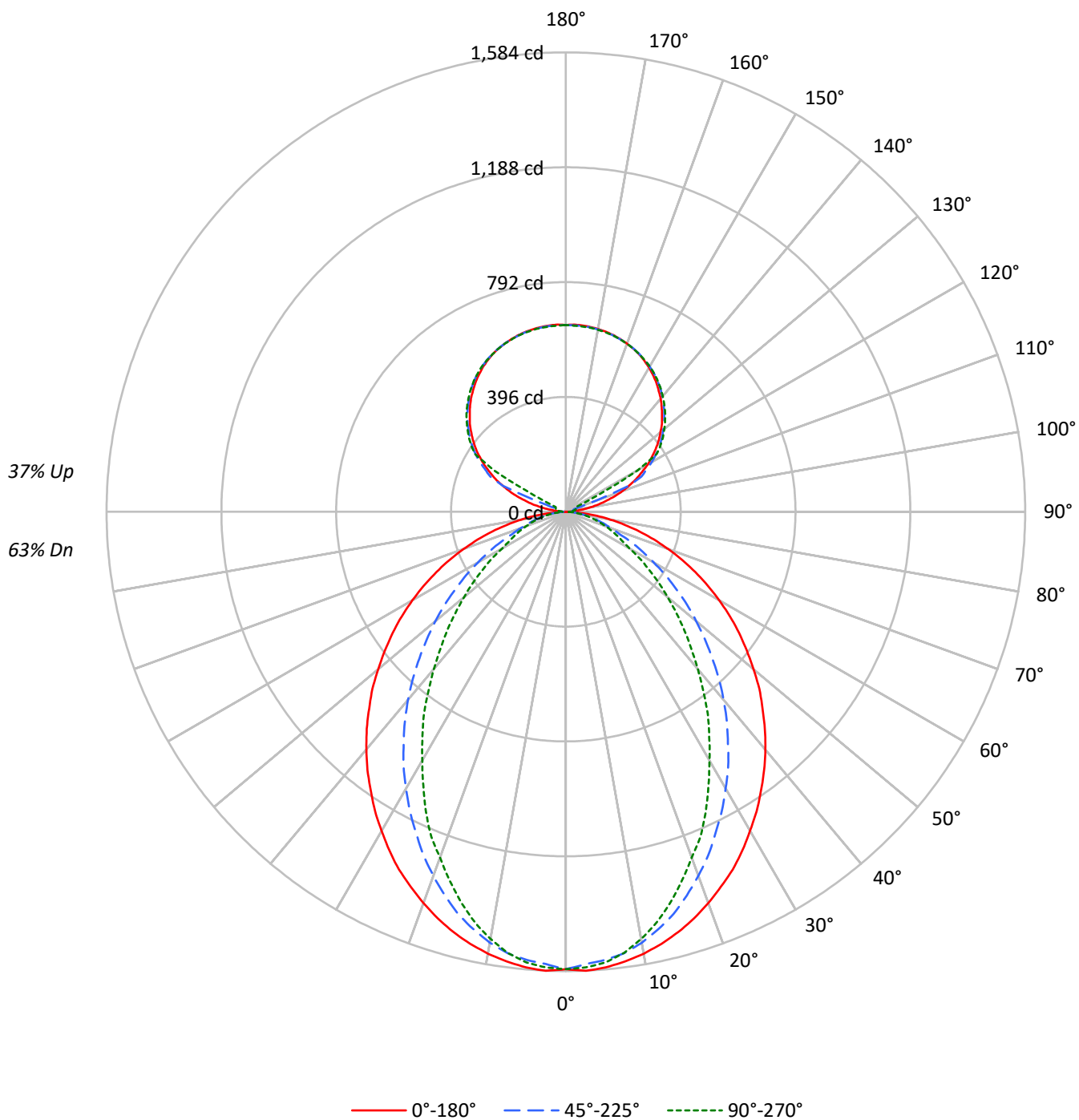
Lumens per Lamp: N/A
Luminaire Lumens: 5132.5 lumens
Efficiency: N/A
Efficacy: 96.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 53
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	53	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1797	1797	1797
5°	1799	1768	1780
10°	1780	1732	1721
15°	1755	1673	1631
20°	1721	1593	1521
25°	1686	1504	1414
30°	1641	1412	1279
35°	1596	1314	1161
40°	1550	1212	1025
45°	1497	1100	902
50°	1442	986	782
55°	1385	865	667
60°	1318	738	548
65°	1241	609	493
70°	1148	490	445
75°	1031	429	404
80°	862	356	348
85°	584	232	258

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1497 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	2.9
10°-20°	405.8	7.9
20°-30°	569.7	11.1
30°-40°	621.0	12.1
40°-50°	570.8	11.1
50°-60°	448.2	8.7
60°-70°	291.8	5.7
70°-80°	150.2	2.9
80°-90°	39.5	0.8
90°-100°	21.2	0.4
100°-110°	79.1	1.5
110°-120°	209.9	4.1
120°-130°	348.2	6.8
130°-140°	369.8	7.2
140°-150°	343.7	6.7
150°-160°	276.4	5.4
160°-170°	178.1	3.5
170°-180°	61.3	1.2
0°-30°	1123.3	21.9
0°-40°	1744.3	34.0
0°-60°	2763.3	53.8
0°-90°	3244.7	63.2
90°-120°	310.3	6.0
90°-150°	1372.0	26.7
90°-180°	1888.0	36.8
0°-180°	5132.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	0	6	9	12	13	5
95°	30	15	18	20	20	36
105°	142	156	28	34	35	151
115°	268	276	288	72	38	264
125°	379	385	394	397	398	338
135°	469	476	480	485	484	362
145°	544	543	551	554	552	340
155°	599	594	600	603	599	276
165°	631	628	629	633	629	178
175°	645	642	643	646	642	61
180°	644	644	644	644	644	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	0.5	5.6	9.3	11.6	12.6
92.5°	11.6	9.8	11.2	12.1	12.6
95°	30.2	14.9	18.1	20.5	20.0
97.5°	54.5	16.3	23.8	25.2	25.7
100°	82.5	18.6	26.5	30.2	31.2
102.5°	113.2	112.3	27.5	32.6	34.1
105°	141.7	155.6	28.4	33.5	35.4
107.5°	174.8	186.3	29.4	34.4	36.3
110°	206.4	216.2	81.6	35.0	36.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	236.2	244.6	236.7	35.9	37.3
115°	267.9	275.8	287.5	71.7	38.3
117.5°	295.4	304.7	312.6	246.0	123.9
120°	326.2	333.1	341.5	347.2	284.2
122.5°	352.2	359.7	369.0	371.8	372.3
125°	378.8	384.8	393.7	397.0	398.4
127.5°	403.1	409.6	416.6	421.2	421.7
130°	425.9	433.3	438.5	443.6	443.1
132.5°	449.1	455.2	460.3	464.5	464.1
135°	468.8	476.2	480.3	485.1	484.2
137.5°	489.2	494.8	499.5	504.2	502.8
140°	509.2	513.1	518.1	522.3	520.0
142.5°	526.0	529.4	535.4	539.1	536.7
145°	543.8	543.3	551.2	554.5	552.2
147.5°	559.1	557.7	565.6	567.9	566.1
150°	574.0	570.8	578.2	581.0	578.7
152.5°	586.6	582.9	589.9	592.7	589.4
155°	598.7	594.5	600.2	602.9	599.2
157.5°	608.6	604.8	609.0	612.3	608.6
160°	617.0	614.1	617.0	619.7	616.5
162.5°	624.3	621.5	623.9	627.2	623.0
165°	630.9	628.1	629.4	632.8	629.4
167.5°	636.0	633.2	634.6	637.9	633.6
170°	640.2	637.4	638.3	641.6	637.4
172.5°	643.0	640.2	641.2	644.4	640.2
175°	645.3	642.0	643.0	646.2	641.6
177.5°	646.2	643.0	643.5	646.7	642.5
180°	643.9	643.9	643.9	643.9	643.9

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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	10.30	11.25	11.15	12.11	13.19	6.26	7.21	7.11	8.07	9.15
	3H	11.99	12.84	12.84	13.71	14.80	7.45	8.31	8.31	9.17	10.27
	4H	12.60	13.40	13.47	14.27	15.38	7.91	8.71	8.78	9.58	10.69
	6H	13.02	13.76	13.90	14.64	15.76	8.23	8.97	9.11	9.85	10.97
	8H	13.15	13.85	14.04	14.75	15.87	8.32	9.02	9.21	9.92	11.04
	12H	13.21	13.88	14.11	14.78	15.92	8.36	9.03	9.26	9.93	11.07
4H	2H	10.33	11.14	11.21	12.01	13.12	6.87	7.67	7.75	8.55	9.66
	3H	12.17	12.84	13.06	13.74	14.87	8.23	8.89	9.11	9.80	10.92
	4H	12.86	13.47	13.76	14.37	15.52	8.77	9.38	9.67	10.28	11.43
	6H	13.38	13.90	14.29	14.83	15.98	9.19	9.71	10.11	10.64	11.80
	8H	13.55	14.04	14.47	14.96	16.13	9.32	9.81	10.24	10.73	11.90
	12H	13.65	14.09	14.59	15.03	16.20	9.39	9.82	10.32	10.77	11.94
8H	4H	12.84	13.33	13.75	14.25	15.41	9.06	9.55	9.97	10.47	11.63
	6H	13.40	13.81	14.34	14.77	15.94	9.57	9.98	10.52	10.94	12.11
	8H	13.62	13.97	14.57	14.93	16.11	9.76	10.12	10.71	11.07	12.26
	12H	13.76	14.07	14.71	15.02	16.25	9.88	10.19	10.83	11.14	12.37
12H	4H	12.79	13.23	13.73	14.17	15.35	9.07	9.51	10.00	10.45	11.62
	6H	13.38	13.73	14.33	14.69	15.87	9.62	9.98	10.57	10.93	12.12
	8H	13.60	13.91	14.55	14.86	16.10	9.83	10.15	10.79	11.09	12.33

END OF REPORT