

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: P905587

Luminaire Tested: DFN2DIP-PN2F0-020D040US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905587
REPORT IS A COMBINATION OF REPORTS P901002 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D040US835-RLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

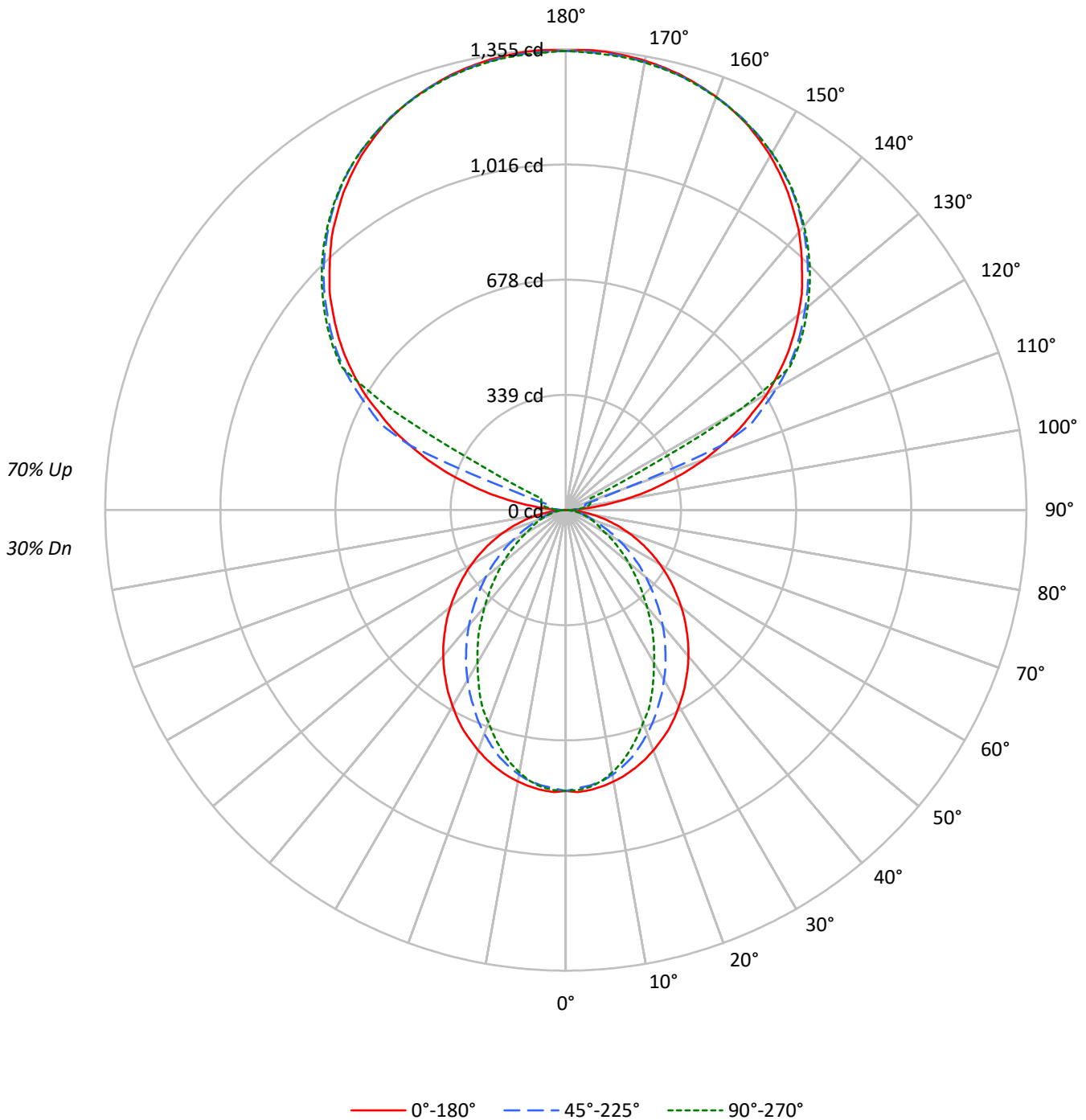
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5660.0 lumens
Efficiency: N/A
Efficacy: 119.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 47.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38	38	38	38	30
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32	34	33	32	26
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28	30	29	28	22
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24	27	25	24	19
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21	24	22	21	17
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18	22	20	18	15
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16	20	18	16	13
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15	18	16	15	12
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13	17	15	13	11
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12	16	13	12	10
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11	14	12	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1790	1790	1790
5°	1790	1758	1770
10°	1770	1720	1710
15°	1742	1659	1619
20°	1707	1577	1508
25°	1671	1486	1400
30°	1624	1393	1265
35°	1577	1294	1146
40°	1530	1191	1010
45°	1475	1077	887
50°	1418	963	767
55°	1358	842	652
60°	1289	715	534
65°	1209	587	478
70°	1112	468	429
75°	990	405	385
80°	814	329	325
85°	532	205	231

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1475 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.5	1.4
10°-20°	212.7	3.8
20°-30°	298.6	5.3
30°-40°	325.5	5.8
40°-50°	299.1	5.3
50°-60°	234.9	4.2
60°-70°	152.9	2.7
70°-80°	78.7	1.4
80°-90°	22.5	0.4
90°-100°	44.5	0.8
100°-110°	165.9	2.9
110°-120°	440.1	7.8
120°-130°	729.9	12.9
130°-140°	775.4	13.7
140°-150°	720.6	12.7
150°-160°	579.4	10.2
160°-170°	373.3	6.6
170°-180°	128.5	2.3
0°-30°	588.7	10.4
0°-40°	914.2	16.2
0°-60°	1448.3	25.6
0°-90°	1702.4	30.1
90°-120°	650.5	11.5
90°-150°	2876.4	50.8
90°-180°	3958.0	69.9
0°-180°	5660.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	827	827	827	827	827	
5°	827	823	813	820	818	78
15°	786	778	752	738	731	222
25°	714	690	640	610	598	328
35°	615	577	511	464	447	385
45°	503	452	374	321	303	388
55°	382	324	243	198	184	342
65°	258	198	130	105	102	256
75°	138	85	60	55	54	146
85°	32	16	14	14	14	37
90°	1	12	20	24	26	5
95°	63	31	38	43	42	75
105°	297	326	60	70	74	317
115°	562	578	603	150	80	553
125°	794	807	825	832	835	708
135°	983	998	1007	1017	1015	759
145°	1140	1139	1156	1162	1158	713
155°	1255	1246	1258	1264	1256	578
165°	1323	1317	1320	1326	1320	374
175°	1353	1346	1348	1355	1345	129
180°	1350	1350	1350	1350	1350	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	826.6	826.6	826.6	826.6	826.6
2.5°	830.3	826.6	818.3	825.9	824.4
5°	826.6	822.9	813.1	819.9	817.6
7.5°	819.9	815.4	804.9	807.9	804.1
10°	810.9	805.6	790.7	788.4	784.0
12.5°	799.7	792.9	772.7	768.3	760.0
15°	786.2	777.9	752.5	738.3	730.9
17.5°	770.5	758.5	727.1	710.6	698.7
20°	752.5	737.5	700.2	681.5	665.0
22.5°	733.1	715.9	672.5	647.1	635.9
25°	713.7	689.7	640.3	609.7	598.4
27.5°	690.5	665.0	610.4	575.2	558.0
30°	665.8	637.3	577.5	539.4	519.1
32.5°	641.8	607.4	546.1	501.2	482.5
35°	614.9	576.8	511.0	463.8	447.3
37.5°	588.7	547.5	478.0	426.4	407.7
40°	561.0	516.2	443.6	390.5	371.0
42.5°	532.6	484.8	409.2	353.8	335.2
45°	502.7	452.5	374.1	320.9	302.9
47.5°	474.3	421.2	340.4	287.2	270.8
50°	442.9	389.8	307.5	255.8	240.2
52.5°	412.1	356.0	276.0	226.7	212.5
55°	382.2	323.9	243.1	198.3	184.0
57.5°	351.6	291.7	214.0	172.1	160.1
60°	320.2	260.3	183.3	145.2	133.2
62.5°	289.5	229.7	157.1	121.2	115.2
65°	258.1	197.5	130.2	104.8	102.5
67.5°	228.2	167.5	104.8	92.0	89.8
70°	196.7	138.4	86.7	79.3	76.3
72.5°	166.8	111.4	72.5	66.6	65.1
75°	137.6	85.2	59.8	54.6	53.9
77.5°	108.5	60.6	47.1	44.1	42.6
80°	81.5	43.4	35.9	32.9	32.9
82.5°	56.8	29.2	24.7	23.2	23.2
85°	32.1	16.4	14.2	14.2	14.2
87.5°	12.0	6.0	6.0	5.2	5.2
90°	0.9	11.7	19.5	24.5	26.3
92.5°	24.5	20.5	23.4	25.4	26.3
95°	63.4	31.2	38.0	43.0	42.0
97.5°	114.3	34.2	49.8	52.8	53.7
100°	172.9	39.1	55.7	63.4	65.4
102.5°	237.3	235.5	57.6	68.3	71.3
105°	296.9	326.3	59.6	70.3	74.2
107.5°	366.3	390.7	61.6	72.3	76.2
110°	432.8	453.2	171.0	73.3	77.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	495.3	512.8	496.2	75.2	78.2
115°	561.6	578.2	602.7	150.4	80.2
117.5°	619.3	638.8	655.5	515.7	259.8
120°	683.8	698.4	716.0	727.8	595.9
122.5°	738.4	754.1	773.7	779.5	780.5
125°	794.1	806.9	825.4	832.3	835.2
127.5°	844.9	858.6	873.3	883.1	884.0
130°	892.8	908.5	919.1	929.9	929.0
132.5°	941.6	954.4	965.1	973.9	973.0
135°	982.7	998.4	1007.1	1016.9	1015.0
137.5°	1025.6	1037.3	1047.2	1056.9	1054.0
140°	1067.6	1075.5	1086.2	1095.0	1090.1
142.5°	1102.9	1109.7	1122.4	1130.1	1125.3
145°	1140.0	1139.0	1155.5	1162.4	1157.5
147.5°	1172.1	1169.2	1185.8	1190.7	1186.9
150°	1203.4	1196.6	1212.3	1218.1	1213.2
152.5°	1229.8	1222.0	1236.6	1242.5	1235.7
155°	1255.2	1246.5	1258.2	1264.0	1256.2
157.5°	1275.7	1267.9	1276.8	1283.6	1275.7
160°	1293.3	1287.4	1293.3	1299.1	1292.3
162.5°	1308.9	1303.1	1308.0	1314.8	1306.0
165°	1322.6	1316.8	1319.7	1326.5	1319.7
167.5°	1333.4	1327.4	1330.5	1337.3	1328.5
170°	1342.2	1336.3	1338.2	1345.1	1336.3
172.5°	1348.0	1342.2	1344.2	1351.0	1342.2
175°	1352.8	1346.0	1348.0	1354.8	1345.1
177.5°	1354.8	1348.0	1349.0	1355.9	1347.1
180°	1350.0	1350.0	1350.0	1350.0	1350.0



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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	6.83	7.52	7.95	8.63	10.16	2.80	3.49	3.92	4.60	6.13
	3H	8.48	9.10	9.60	10.21	11.76	3.96	4.58	5.09	5.70	7.24
	4H	9.07	9.65	10.20	10.77	12.32	4.39	4.98	5.53	6.10	7.65
	6H	9.46	10.00	10.61	11.12	12.69	4.69	5.23	5.84	6.35	7.92
	8H	9.58	10.09	10.72	11.22	12.78	4.77	5.28	5.92	6.42	7.98
	12H	9.63	10.11	10.78	11.24	12.82	4.80	5.29	5.95	6.42	8.00
4H	2H	6.83	7.41	7.97	8.53	10.08	3.37	3.95	4.51	5.07	6.62
	3H	8.62	9.11	9.77	10.25	11.82	4.69	5.17	5.83	6.32	7.88
	4H	9.29	9.74	10.44	10.87	12.46	5.21	5.66	6.36	6.79	8.38
	6H	9.78	10.16	10.94	11.32	12.89	5.61	5.99	6.76	7.14	8.72
	8H	9.94	10.30	11.10	11.44	13.04	5.72	6.08	6.88	7.23	8.82
	12H	10.02	10.34	11.19	11.50	13.10	5.77	6.10	6.94	7.25	8.85
8H	4H	9.25	9.60	10.40	10.75	12.34	5.47	5.83	6.63	6.97	8.57
	6H	9.78	10.08	10.96	11.27	12.86	5.96	6.26	7.14	7.44	9.03
	8H	9.99	10.24	11.17	11.41	13.02	6.14	6.39	7.32	7.56	9.17
	12H	10.10	10.33	11.29	11.49	13.14	6.24	6.46	7.42	7.63	9.27
12H	4H	9.19	9.51	10.36	10.67	12.27	5.47	5.79	6.64	6.95	8.55
	6H	9.76	10.01	10.94	11.18	12.79	6.00	6.26	7.18	7.43	9.04
	8H	9.96	10.18	11.14	11.35	12.99	6.19	6.42	7.38	7.58	9.23