

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: P921785

Luminaire Tested: DFN2DIP-HX4F0-040D050US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921785
REPORT IS A COMBINATION OF REPORTS P899318 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D050US940-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

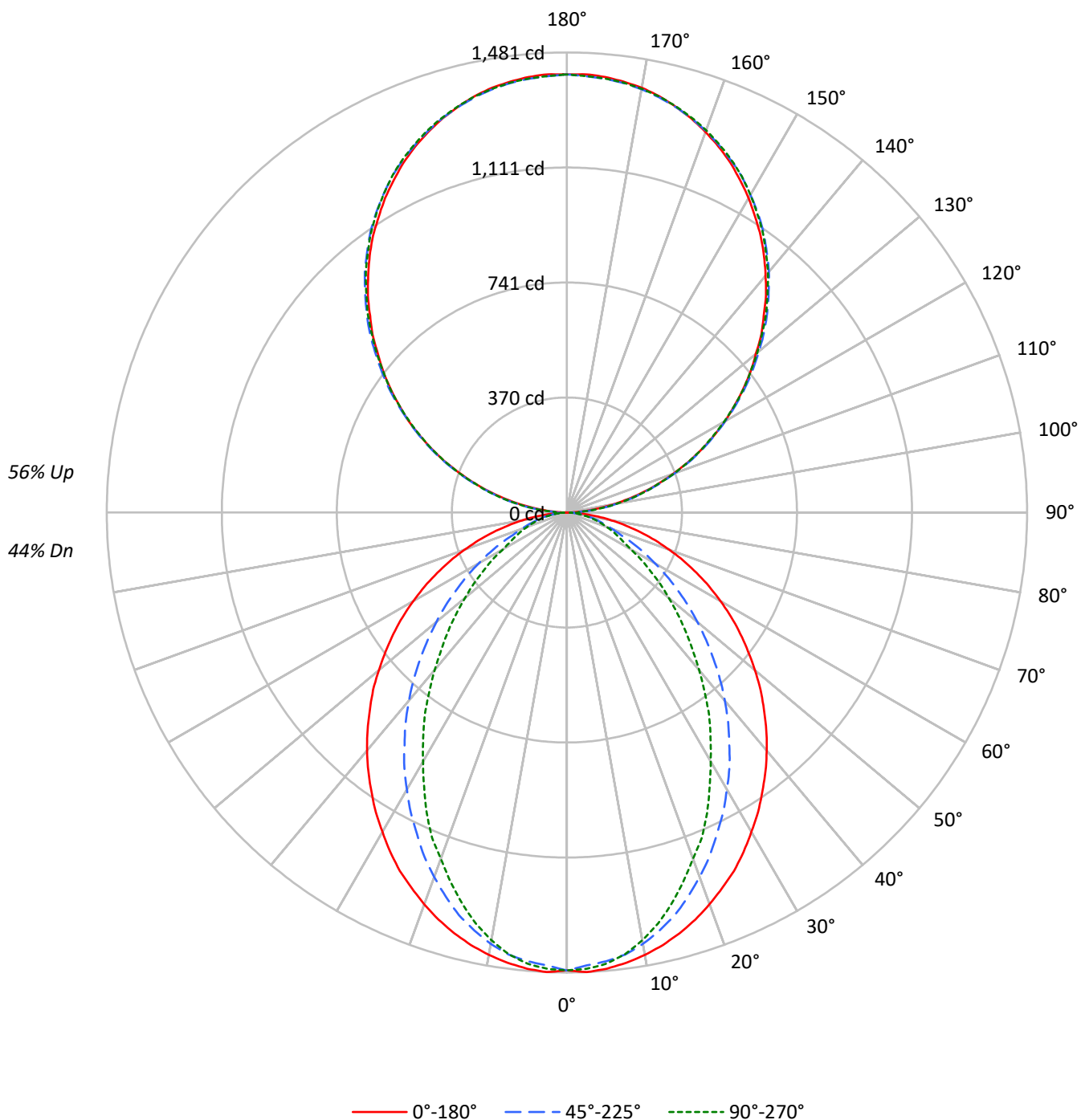
Lumens per Lamp: N/A
Luminaire Lumens: 6977.6 lumens
Efficiency: N/A
Efficacy: 112.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 61.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
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	97	97	97	97	80	80	80	64	64	64	50	50	50
1	97	93	89	86	88	85	82	79	70	68	66	57	56	54	45	44	43
2	88	81	75	71	81	75	70	65	62	59	55	51	48	46	40	38	37
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	32	30	28
5	68	57	49	43	62	53	46	41	44	39	35	37	33	30	29	27	25
6	63	51	43	38	57	47	41	35	40	35	31	33	29	26	27	24	22
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	25	22	20
8	54	42	35	30	50	39	32	28	33	28	24	28	24	21	23	20	18
9	50	39	31	26	46	36	29	25	31	25	22	26	22	19	21	18	16
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1096	1096	1096
5°	1098	1079	1086
10°	1087	1058	1050
15°	1072	1023	996
20°	1053	975	929
25°	1032	921	864
30°	1005	866	782
35°	979	806	710
40°	952	745	627
45°	920	676	553
50°	888	607	479
55°	854	534	409
60°	815	457	337
65°	769	378	303
70°	715	305	274
75°	646	269	250
80°	546	226	217
85°	382	151	163

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1064 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	2.0
10°-20°	379.3	5.4
20°-30°	532.5	7.6
30°-40°	580.5	8.3
40°-50°	533.5	7.6
50°-60°	419.0	6.0
60°-70°	272.7	3.9
70°-80°	140.4	2.0
80°-90°	39.8	0.6
90°-100°	87.3	1.3
100°-110°	277.2	4.0
110°-120°	474.5	6.8
120°-130°	624.0	8.9
130°-140°	700.4	10.0
140°-150°	686.8	9.8
150°-160°	576.1	8.3
160°-170°	382.1	5.5
170°-180°	133.5	1.9
0°-30°	1049.9	15.0
0°-40°	1630.4	23.4
0°-60°	2582.9	37.0
0°-90°	3035.8	43.5
90°-120°	838.9	12.0
90°-150°	2850.1	40.8
90°-180°	3942.0	56.5
0°-180°	6977.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1474	1474	1474	1474	1474	
5°	1474	1468	1450	1462	1458	140
15°	1402	1387	1342	1317	1304	395
25°	1273	1230	1142	1087	1067	585
35°	1097	1029	911	827	798	686
45°	896	807	667	572	540	692
55°	682	578	434	354	328	609
65°	460	352	232	187	183	456
75°	245	152	107	97	96	260
85°	57	29	25	25	25	66
90°	1	15	42	39	40	7
95°	62	74	76	76	74	69
105°	256	259	262	264	264	270
115°	476	483	481	480	476	471
125°	692	703	700	696	695	619
135°	896	909	911	910	907	692
145°	1087	1096	1103	1104	1099	679
155°	1243	1247	1251	1257	1253	572
165°	1353	1351	1351	1360	1354	382
175°	1408	1404	1402	1410	1403	134
180°	1410	1410	1410	1410	1410	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1474.2	1474.2	1474.2	1474.2	1474.2
2.5°	1480.9	1474.2	1459.5	1472.9	1470.2
5°	1474.2	1467.5	1450.1	1462.1	1458.2
7.5°	1462.1	1454.2	1435.6	1440.7	1434.1
10°	1446.2	1436.8	1410.2	1406.0	1398.2
12.5°	1426.2	1414.2	1378.0	1370.1	1355.4
15°	1402.1	1387.4	1342.1	1316.8	1303.5
17.5°	1374.1	1352.7	1296.6	1267.4	1246.0
20°	1342.1	1315.4	1248.7	1215.4	1186.0
22.5°	1307.4	1276.8	1199.3	1154.0	1134.1
25°	1272.7	1230.0	1141.9	1087.4	1067.2
27.5°	1231.5	1186.0	1088.6	1025.9	995.1
30°	1187.4	1136.6	1029.8	961.9	925.9
32.5°	1144.7	1083.2	973.9	893.9	860.4
35°	1096.7	1028.6	911.2	827.2	797.7
37.5°	1050.0	976.5	852.5	760.4	727.1
40°	1000.6	920.6	791.1	696.4	661.7
42.5°	949.8	864.5	729.8	631.0	597.7
45°	896.5	807.1	667.1	572.3	540.3
47.5°	845.9	751.2	607.1	512.3	483.0
50°	789.8	695.1	548.3	456.2	428.3
52.5°	735.0	635.0	492.3	404.2	378.9
55°	681.7	577.6	433.5	353.6	328.2
57.5°	627.1	520.3	381.6	306.8	285.5
60°	571.0	464.2	326.8	258.9	237.6
62.5°	516.4	409.7	280.1	216.2	205.5
65°	460.3	352.1	232.1	186.8	182.7
67.5°	407.0	298.8	186.8	164.1	160.1
70°	350.9	246.8	154.7	141.4	136.0
72.5°	297.6	198.8	129.4	118.8	116.1
75°	245.4	152.0	106.7	97.4	96.1
77.5°	193.5	108.0	84.1	78.7	76.0
80°	145.3	77.4	63.9	58.8	58.8
82.5°	101.4	52.1	44.1	41.3	41.3
85°	57.3	29.3	25.3	25.3	25.3
87.5°	21.4	10.6	10.6	9.4	9.4
90°	1.2	15.3	41.6	39.1	40.4
92.5°	26.4	35.7	37.0	38.3	38.3
95°	62.1	74.0	76.1	76.1	74.0
97.5°	103.3	114.3	119.0	119.0	119.0
100°	150.9	160.7	164.1	164.1	162.8
102.5°	201.1	208.3	212.9	214.3	212.9
105°	255.9	259.3	261.9	263.9	263.9
107.5°	310.3	315.4	315.4	316.3	310.3
110°	363.0	369.9	369.9	369.9	366.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	420.0	427.2	426.0	422.6	420.0
115°	476.1	483.0	480.8	479.6	476.1
117.5°	531.8	541.2	535.2	531.8	528.4
120°	587.9	597.3	587.9	587.9	584.1
122.5°	638.9	650.9	644.9	641.5	638.9
125°	692.5	703.1	699.7	695.9	694.6
127.5°	744.8	758.0	753.3	748.1	744.8
130°	793.7	809.0	806.8	804.3	799.6
132.5°	848.6	860.4	861.3	855.3	851.9
135°	895.7	908.8	911.4	910.2	906.8
137.5°	948.4	959.0	961.2	960.3	955.2
140°	994.7	1005.4	1011.3	1011.3	1006.7
142.5°	1042.3	1053.0	1056.4	1057.7	1053.0
145°	1087.4	1095.9	1102.7	1104.0	1099.3
147.5°	1127.8	1138.4	1143.5	1145.7	1140.9
150°	1169.5	1176.7	1181.3	1185.2	1181.3
152.5°	1206.5	1213.7	1219.6	1224.3	1219.6
155°	1243.4	1246.8	1250.6	1256.6	1252.8
157.5°	1275.3	1277.8	1280.0	1288.5	1282.5
160°	1303.8	1306.4	1307.6	1314.8	1309.7
162.5°	1330.2	1330.2	1331.4	1339.5	1333.6
165°	1352.7	1351.4	1351.4	1359.9	1354.0
167.5°	1373.1	1369.2	1369.2	1377.8	1371.8
170°	1388.4	1385.0	1383.8	1392.2	1385.0
172.5°	1399.0	1395.6	1394.4	1402.8	1395.6
175°	1407.6	1404.1	1401.6	1410.1	1402.8
177.5°	1412.2	1408.8	1406.2	1413.5	1406.2
180°	1410.1	1410.1	1410.1	1410.1	1410.1

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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	7.61	7.84	8.63	9.99	2.80	3.58	3.82	4.60	5.96
	3H	8.50	9.20	9.53	10.23	11.61	3.99	4.68	5.01	5.71	7.10
	4H	9.11	9.77	10.15	10.80	12.19	4.44	5.10	5.48	6.13	7.52
	6H	9.53	10.14	10.58	11.17	12.58	4.76	5.36	5.81	6.40	7.80
	8H	9.65	10.23	10.71	11.28	12.68	4.85	5.42	5.90	6.48	7.88
	12H	9.71	10.26	10.77	11.31	12.73	4.89	5.44	5.95	6.48	7.91
4H	2H	6.84	7.50	7.89	8.53	9.92	3.39	4.05	4.44	5.08	6.47
	3H	8.67	9.21	9.72	10.28	11.68	4.74	5.29	5.79	6.35	7.75
	4H	9.36	9.86	10.42	10.91	12.34	5.28	5.79	6.34	6.84	8.27
	6H	9.87	10.30	10.94	11.38	12.80	5.70	6.13	6.77	7.21	8.63
	8H	10.04	10.45	11.11	11.52	12.95	5.83	6.23	6.90	7.30	8.74
	12H	10.14	10.50	11.22	11.58	13.02	5.90	6.26	6.98	7.34	8.78
8H	4H	9.32	9.72	10.39	10.79	12.23	5.56	5.96	6.63	7.03	8.47
	6H	9.89	10.22	10.98	11.33	12.76	6.08	6.41	7.17	7.52	8.96
	8H	10.10	10.39	11.20	11.49	12.94	6.27	6.56	7.37	7.66	9.11
	12H	10.24	10.50	11.34	11.59	13.08	6.39	6.65	7.49	7.74	9.23
12H	4H	9.27	9.63	10.36	10.72	12.16	5.56	5.93	6.65	7.01	8.45
	6H	9.86	10.15	10.96	11.25	12.70	6.13	6.42	7.23	7.52	8.97
	8H	10.08	10.34	11.18	11.43	12.92	6.34	6.60	7.44	7.69	9.18

END OF REPORT