

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: P921720

Luminaire Tested: DFN2DIP-HX3F0-070D050US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921720
REPORT IS A COMBINATION OF REPORTS P899238 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D050US940-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

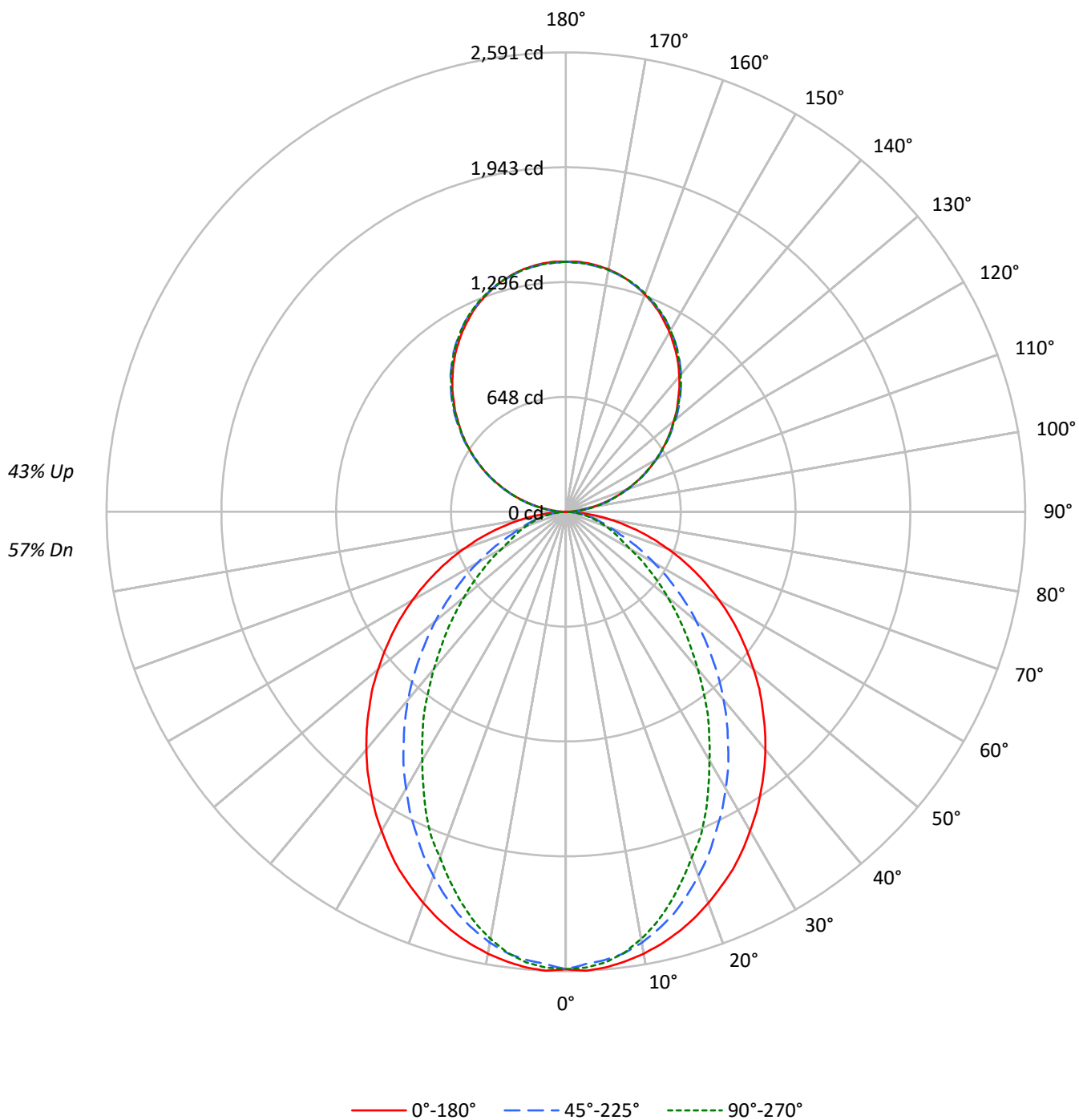
Lumens per Lamp: N/A
Luminaire Lumens: 9251.5 lumens
Efficiency: N/A
Efficacy: 87.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.8
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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63
1	100	96	92	89	93	89	86	83	78	75	73	67	65	63	56	55	54
2	92	84	78	73	85	79	74	69	69	65	61	59	56	54	50	48	47
3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	42	40
4	77	66	59	53	72	62	56	50	55	49	45	47	43	40	41	38	35
5	71	60	52	46	66	56	49	44	49	44	39	43	39	35	37	34	31
6	66	54	46	40	61	51	43	38	45	39	35	39	34	31	34	30	28
7	61	49	41	35	57	46	39	34	41	35	31	36	31	28	31	27	25
8	57	44	37	32	53	42	35	30	37	32	28	33	28	25	29	25	22
9	53	41	33	28	49	38	32	27	34	29	25	30	26	23	26	23	20
10	49	37	30	26	46	35	29	25	32	26	23	28	24	21	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2988	2988	2988
5°	2992	2939	2958
10°	2961	2879	2860
15°	2919	2782	2710
20°	2863	2649	2526
25°	2807	2500	2348
30°	2731	2347	2124
35°	2657	2184	1927
40°	2582	2015	1701
45°	2494	1827	1496
50°	2403	1638	1296
55°	2308	1437	1104
60°	2199	1226	907
65°	2072	1013	815
70°	1919	813	735
75°	1726	712	665
80°	1447	591	571
85°	988	384	420

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2494 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	2.6
10°-20°	663.7	7.2
20°-30°	931.9	10.1
30°-40°	1015.8	11.0
40°-50°	933.6	10.1
50°-60°	733.2	7.9
60°-70°	477.3	5.2
70°-80°	245.7	2.7
80°-90°	66.7	0.7
90°-100°	87.3	0.9
100°-110°	277.2	3.0
110°-120°	474.5	5.1
120°-130°	624.0	6.7
130°-140°	700.4	7.6
140°-150°	686.8	7.4
150°-160°	576.1	6.2
160°-170°	382.1	4.1
170°-180°	133.5	1.4
0°-30°	1837.4	19.9
0°-40°	2853.2	30.8
0°-60°	4520.0	48.9
0°-90°	5309.6	57.4
90°-120°	838.9	9.1
90°-150°	2850.1	30.8
90°-180°	3942.0	42.6
0°-180°	9251.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	1	15	42	39	40	9
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°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
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	11.57	12.46	12.47	13.38	14.54	7.55	8.44	8.44	9.35	10.52
	3H	13.24	14.04	14.15	14.97	16.16	8.73	9.53	9.64	10.46	11.65
	4H	13.85	14.61	14.78	15.53	16.73	9.18	9.94	10.11	10.87	12.07
	6H	14.27	14.96	15.21	15.90	17.11	9.51	10.20	10.44	11.13	12.35
	8H	14.39	15.05	15.34	16.01	17.22	9.60	10.26	10.54	11.21	12.42
	12H	14.45	15.08	15.40	16.03	17.26	9.64	10.27	10.59	11.21	12.45
4H	2H	11.59	12.35	12.53	13.28	14.48	8.14	8.90	9.08	9.83	11.03
	3H	13.42	14.05	14.36	15.01	16.22	9.50	10.12	10.44	11.08	12.29
	4H	14.11	14.68	15.06	15.63	16.87	10.04	10.61	10.99	11.57	12.81
	6H	14.62	15.11	15.58	16.09	17.33	10.46	10.95	11.42	11.93	13.17
	8H	14.79	15.25	15.76	16.22	17.47	10.59	11.05	11.55	12.02	13.27
	12H	14.89	15.30	15.87	16.29	17.54	10.65	11.07	11.64	12.05	13.31
8H	4H	14.08	14.54	15.05	15.51	16.76	10.32	10.78	11.29	11.75	13.00
	6H	14.64	15.02	15.63	16.03	17.28	10.84	11.22	11.83	12.23	13.48
	8H	14.85	15.19	15.85	16.19	17.46	11.02	11.36	12.02	12.36	13.63
	12H	14.99	15.28	15.99	16.28	17.59	11.14	11.44	12.14	12.43	13.75
12H	4H	14.04	14.45	15.02	15.44	16.69	10.33	10.74	11.31	11.73	12.99
	6H	14.62	14.95	15.62	15.95	17.22	10.88	11.22	11.88	12.22	13.49
	8H	14.83	15.13	15.84	16.12	17.44	11.09	11.39	12.10	12.38	13.70