

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
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Spectrum Lighting Photometric Lab

Luminaire

HMI1313 60L 40K DS10X SM BZ
Nom. 12" x 12" x 5" H, HMI1313, Square Canopy Light

Test Number

s17030051b-01 (scaled to 4K)

Test Date

2017-03-19

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	52 W
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Lumen Output

Output Lumens	6016
Efficacy	115.69 lm/W

Luminous Dimensions

0° - 180° Size	1.03
90° - 270° Size	1.03
Height	0.42

Spacing Criterion

Two luminaires, plane 0°	1.4
Two luminaires, plane 90°	1.37
Four luminaires	1.69

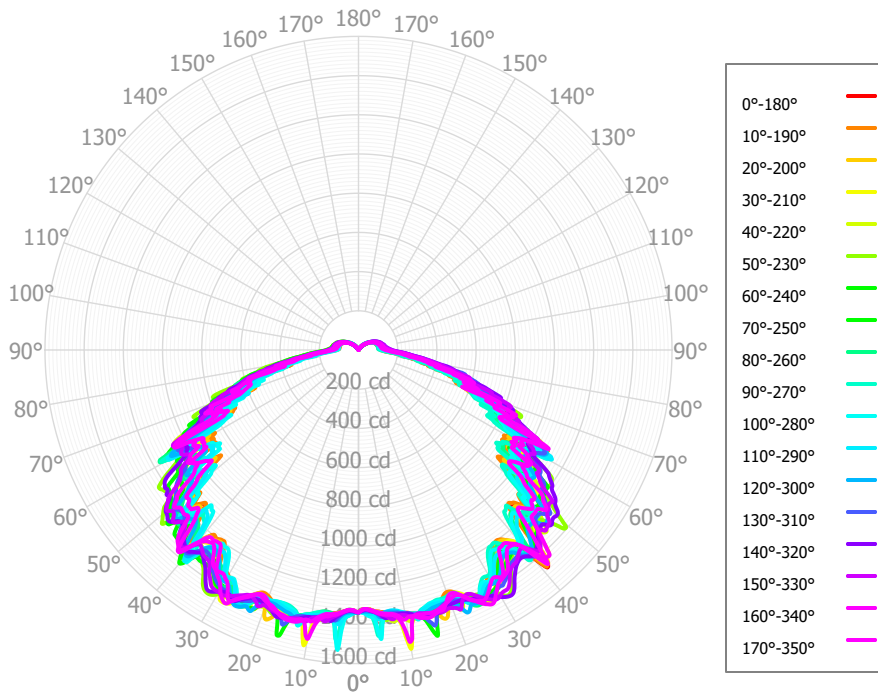
Full Beam Angle

0° - 180°	129°
90° - 270°	132°

IES File Header Contents

Keyword	Value
TEST	s17030051b-01 (scaled to 4K)
TESTLAB	LTL
MANUFAC	Spectrum Lighting
TESTDATE	2017-03-19
ISSUEDATE	2017-03-19
LUMCAT	HMI1313 60L 40K DS10X SM BZ
LUMINAIRE	Nom. 12" x 12" x 5" H, HMI1313, Square Canopy Light
OTHER	Polycarbonate Refractive lens
OTHER	Beam Angle: xx.x
LAMP	45W 4000K
LAMPCAT	N/A
OTHER	Total Luminaire Watts is approximate
OTHER	N/A
OTHER	This report generated by Spectrum Lighting
_CRI	N/A
_CCTMULT	5000K x 1.0
_LAMPMULT	N/A

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	130.44	2.17%	90.00° - 100.00°	135.18	2.25%
10.00° - 20.00°	393.27	6.54%	100.00° - 110.00°	116.58	1.94%
20.00° - 30.00°	645.21	10.73%	100.00° - 120.00°	208.55	3.47%
30.00° - 40.00°	824.21	13.70%	120.00° - 130.00°	59.98	1.00%
40.00° - 50.00°	965.93	16.06%	130.00° - 140.00°	31.35	0.52%
50.00° - 60.00°	936.79	15.57%	140.00° - 150.00°	10.98	0.18%
60.00° - 70.00°	850.95	14.14%	150.00° - 160.00°	1.45	0.02%
70.00° - 80.00°	568.52	9.45%	160.00° - 170.00°	0.40	0.01%
80.00° - 90.00°	252.55	4.20%	170.00° - 180.00°	0.13	0.00%
0.00° - 90.00°	5567.88	92.55%	0.00° - 180.00°	6015.90	100.00%

Candela Disi

	0.00°	10.00°	20.00°	30.00°	40.00°	50.00°	60.00°	70.00°	80.00°	90.00°	100.00°	110.00°	120.00°	130.00°	140.00°	150.00°	160.00°	170.00°	18
0.00°	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	1338.42	13
0.50°	1329.83	1330.31	1330.31	1330.77	1332.30	1332.60	1334.12	1335.71	1337.22	1338.61	1339.05	1339.12	1339.39	1338.23	1337.77	1336.96	1336.12	1336.08	13
1.00°	1324.03	1323.89	1324.07	1324.48	1325.39	1326.09	1328.40	1332.24	1336.29	1340.34	1341.97	1341.17	1339.00	1335.31	1333.46	1332.17	1330.25	1329.48	13
1.50°	1322.65	1322.45	1322.44	1322.94	1323.18	1323.86	1326.54	1331.44	1338.03	1344.84	1347.95	1345.07	1339.43	1334.08	1331.09	1329.69	1328.65	1328.12	13
2.00°	1324.18	1323.72	1324.39	1325.01	1324.57	1326.33	1328.24	1332.57	1340.95	1351.00	1355.10	1349.02	1340.80	1334.06	1331.49	1329.36	1327.93	1327.87	13
2.50°	1325.93	1325.82	1326.51	1326.92	1327.56	1330.26	1333.28	1336.52	1344.03	1355.95	1362.36	1352.99	1343.20	1337.14	1333.74	1331.40	1330.20	1330.49	13
3.00°	1331.49	1330.35	1329.98	1330.57	1331.75	1334.69	1337.44	1340.96	1348.66	1367.90	1378.68	1361.67	1347.30	1341.51	1338.79	1337.44	1335.22	1334.84	13
3.50°	1336.62	1335.43	1335.20	1336.04	1337.42	1338.82	1342.32	1348.13	1359.24	1406.90	1435.34	1381.26	1356.49	1348.44	1344.82	1344.00	1340.60	1339.07	13
4.00°	1338.84	1338.36	1338.83	1341.23	1343.90	1345.88	1350.17	1360.92	1376.62	1462.96	1535.00	1405.54	1369.05	1359.18	1354.49	1349.92	1345.79	1344.12	13
4.50°	1339.78	1340.22	1341.81	1346.08	1350.59	1355.19	1363.08	1375.43	1373.17	1426.61	1481.16	1396.95	1383.07	1373.74	1362.24	1356.32	1351.77	1348.58	13
5.00°	1342.96	1343.64	1345.71	1351.57	1356.37	1367.29	1375.46	1366.80	1354.65	1375.38	1398.90	1368.80	1371.61	1386.57	1372.36	1363.07	1356.64	1350.35	13
5.50°	1344.07	1345.27	1347.82	1355.56	1364.84	1380.40	1373.05	1356.05	1349.73	1364.41	1378.88	1358.66	1360.32	1376.21	1386.27	1369.09	1359.27	1353.51	13
6.00°	1344.79	1345.51	1349.35	1358.84	1371.63	1385.77	1366.32	1354.88	1350.28	1361.72	1375.27	1356.89	1359.45	1366.48	1390.84	1376.76	1363.36	1355.88	13
6.50°	1345.93	1344.85	1351.21	1362.80	1380.84	1379.81	1365.72	1357.81	1353.75	1360.91	1374.49	1358.46	1363.07	1368.30	1381.66	1388.21	1368.49	1356.19	13
7.00°	1348.45	1345.06	1351.94	1366.51	1392.33	1373.96	1367.94	1361.51	1357.70	1358.88	1371.69	1360.20	1367.25	1372.64	1376.87	1395.45	1371.60	1357.50	13
7.50°	1351.32	1348.92	1355.16	1369.81	1397.26	1373.02	1371.43	1365.93	1359.00	1359.72	1368.84	1361.63	1371.01	1375.80	1377.53	1392.21	1375.12	1363.07	13
8.00°	1356.08	1354.37	1360.61	1377.41	1392.77	1373.91	1374.49	1369.02	1360.83	1361.68	1370.52	1364.37	1373.16	1378.82	1380.05	1384.36	1383.23	1369.59	13
8.50°	1363.82	1362.36	1369.56	1392.12	1386.20	1376.08	1377.51	1371.82	1362.80	1362.89	1372.16	1366.95	1375.73	1380.03	1382.40	1380.83	1396.49	1377.48	13
9.00°	1372.65	1370.24	1381.31	1425.16	1384.54	1378.62	1378.52	1374.01	1365.11	1364.10	1375.62	1369.13	1378.13	1381.98	1382.40	1382.49	1417.75	1389.26	13
9.50°	1370.26	1368.20	1387.20	1498.90	1387.40	1381.17	1379.67	1375.23	1366.10	1365.32	1377.59	1371.01	1380.24	1384.29	1383.95	1385.48	1457.01	1401.21	13
10.00°	1364.87	1362.91	1382.73	1549.04	1395.40	1383.72	1380.60	1378.40	1367.02	1366.53	1380.12	1371.98	1383.00	1386.83	1386.04	1391.71	1497.15	1406.64	13
10.50°	1365.88	1363.36	1379.46	1500.79	1405.35	1385.12	1382.44	1380.70	1370.17	1367.74	1381.98	1375.54	1385.30	1387.15	1385.64	1401.82	1481.30	1402.46	13
11.00°	1371.38	1367.49	1380.32	1429.54	1409.64	1388.76	1384.05	1383.45	1371.61	1369.93	1385.36	1377.93	1386.52	1387.82	1388.54	1410.98	1433.18	1401.38	13
11.50°	1376.59	1370.31	1383.40	1402.79	1404.55	1393.56	1385.14	1386.90	1375.02	1374.61	1399.95	1380.46	1387.68	1387.41	1392.69	1412.17	1408.35	1406.04	13
12.00°	1380.84	1373.31	1387.74	1398.52	1396.84	1399.65	1388.28	1388.13	1382.00	1383.61	1429.90	1387.32	1389.51	1388.52	1397.80	1407.43	1405.10	1412.76	13
12.50°	1383.91	1376.55	1393.06	1398.96	1393.33	1404.19	1391.76	1390.29	1390.92	1386.08	1440.39	1394.50	1394.58	1390.92	1405.42	1404.28	1409.11	1419.30	13
13.00°	1386.55	1378.23	1397.89	1400.79	1393.65	1403.07	1397.56	1395.04	1392.72	1374.32	1413.21	1395.46	1400.50	1394.37	1412.75	1406.01	1412.82	1423.47	14
13.50°	1388.91	1380.63	1401.71	1402.33	1395.38	1398.95	1404.12	1401.78	1382.93	1364.02	1379.92	1382.57	1403.05	1401.72	1416.43	1408.64	1414.82	1425.26	13
14.00°	1390.35	1382.52	1403.67	1403.72	1395.71	1396.96	1422.91	1405.08	1376.81	1359.70	1370.07	1378.74	1399.07	1413.42	1417.83	1409.88	1415.80	1425.52	13
14.50°	1390.16	1383.26	1405.99	1404.02	1396.38	1396.85	1456.35	1396.91	1374.02	1357.51	1365.56	1376.30	1390.96	1426.18	1416.53	1412.40	1415.61	1424.61	13
15.00°	1389.02	1381.93	1407.62	1404.70	1397.31	1397.73	1492.49	1388.99	1371.03	1353.82	1360.31	1375.07	1387.46	1444.21	1417.13	1414.50	1412.62	1424.39	13
15.50°	1386.64	1378.25	1409.15	1404.49	1397.55	1398.21	1513.93	1385.27	1368.23	1349.47	1355.82	1372.34	1385.49	1454.39	1418.06	1413.89	1408.90	1422.16	13
16.00°	1384.08	1374.53	1409.67	1402.54	1397.77	1399.73	1455.23	1382.67	1364.09	1345.48	1353.16	1368.40	1382.28	1430.05	1421.52	1411.00	1406.04	1418.46	13
16.50°	1379.93	1369.70	1410.14	1398.25	1396.91	1402.22	1407.96	1378.13	1360.11	1340.82	1349.21	1364.50	1378.10	1415.08	1424.79	1407.28	1404.81	1412.79	13
17.00°	1376.24	1365.03	1418.06	1393.37	1396.42	1404.78	1392.36	1374.10	1357.07	1337.08	1348.11	1360.70	1374.15	1407.74	1425.43	1404.24	1400.90	1405.42	13
17.50°	1372.15	1360.25	1435.04	1386.36	1396.41	1406.20	1385.82	1371.53	1355.84	1336.11	1349.34	1356.63	1370.95	1400.68	1420.18	1402.60	1394.52	1398.52	13
18.00°	1364.97	1352.67	1441.82	1378.71	1393.92	1404.89	1380.20	1368.54	1355.13	1337.90	1350.52	1354.65	1366.56	1393.00	1410.60	1401.20	1386.60	1393.73	13
18.50°	1353.72	1340.76	1435.54	1373.80	1390.68	1400.12	1374.79	1365.72	1354.43	1337.92	1351.68	1354.33	1365.24	1387.58	1402.17	1399.89	1379.38	1390.18	13
19.00°	1340.83	1328.17	1406.34	1368.31	1388.51	1394.48	1370.25	1366.10	1355.27	1338.36	1357.10	1355.45	1365.19	1383.56	1396.25	1397.16	1375.70	1383.50	13
19.50°	1331.33	1318.35	1367.14	1359.70	1391.29	1388.31	1365.76	1366.54	1354.68	1336.80	1359.20	1354.60	1365.84	1379.97	1390.01	1393.15	1373.48	1372.65	13
20.00°	1328.25	1315.00	1345.81	1349.83	1401.17	1384.27	1362.21	1369.27	1353.27	1332.62	1353.06	1351.41	1370.78	1377.33	1386.11	1389.38	1369.70	1359.21	13
20.50°	1327.00	1315.74	1337.51	1339.58	1395.51	1380.32	1358.92	1373.21	1352.40	1329.53	1350.84	1346.08	1384.03	1375.24	1381.08	1390.32	1364.65	1349.30	13
21.00°	1331.64	1320.19	1336.84	1331.46	1403.63	1376.83	1358.60	1379.41	1350.83	1328.32	1347.20	1344.45	1392.21	1373.16	1376.42	1400.82	1358.21	1342.85	13
21.50°	1341.00	1328.66	1341.78	1330.43	1425.02	1373.36	1359.26	1389.70	1353.61	1331.21	1342.58	1345.74	1401.04	1374.67	1373.98	1405.01	1351.85	1340.86	13
22.00°	1353.81	1341.85	1351.54	1334.95	1420.50	1369.88	1361.85	1380.95	1357.09	1341.96	1351.08	1351.53	1420.75	1378.05	1372.98	1390.68	1349.46	1342.32	13
22.50°	1368.14	1356.53	1363.22	1343.42	1397.38	1369.11	1366.98	1379.67	1366.75	1360.85	1370.04	1366.09	1442.61	1383.34	1373.88	1382.78	1351.31	1347.75	13

HMI1313 60L 40K DS10X SM BZ

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	7055	7055	7055	7055	6839	6839	6839	6839	6435	6435	6435	6066	6066	6066	5727	5727	5568
	1	6327	5994	5695	5426	6112	5811	5540	5295	5469	5247	5044	5154	4975	4809	4864	4721	4587
	2	5686	5132	4673	4288	5479	4976	4557	4201	4685	4335	4033	4416	4126	3872	4168	3930	3807
	3	5138	4444	3906	3478	4944	4312	3816	3416	4063	3643	3296	3833	3479	3181	3620	3323	3217
	4	4672	3893	3322	2886	4492	3780	3250	2841	3568	3112	2751	3371	2980	2665	3187	2855	2764
	5	4272	3446	2868	2442	4108	3349	2810	2407	3167	2698	2337	2998	2590	2270	2839	2487	2408
	6	3928	3078	2508	2099	3778	2995	2460	2071	2838	2367	2016	2692	2278	1962	2555	2192	2124
	7	3628	2772	2217	1828	3492	2701	2177	1805	2565	2099	1761	2437	2025	1716	2318	1952	1894
	8	3366	2515	1979	1611	3243	2452	1945	1592	2334	1879	1555	2223	1816	1518	2118	1754	1703
	9	3136	2296	1781	1433	3025	2242	1752	1418	2138	1696	1386	2040	1642	1355	1948	1589	1544
	10	2933	2109	1615	1287	2832	2061	1590	1273	1970	1542	1246	1883	1495	1220	1802	1449	1410

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	44.2 fc	23.5 ft
6.5 ft	31.7 fc	27.7 ft
7.5 ft	23.8 fc	32.0 ft
8.0 ft	20.9 fc	34.1 ft
10.0 ft	13.4 fc	42.7 ft
12.0 ft	9.3 fc	51.2 ft
14.0 ft	6.8 fc	59.8 ft
16.0 ft	5.2 fc	68.3 ft
20.0 ft	3.3 fc	85.4 ft
24.0 ft	2.3 fc	102.4 ft
28.0 ft	1.7 fc	119.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	13580	13580	13580
45.00°	11355	11623	12136
55.00°	11350	11086	9682
65.00°	10017	9427	9628
75.00°	7527	7022	7032
85.00°	3823	3577	3704

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		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				
2H	2H	19.7	21.3	20.2	21.7	22.2	19.8	21.4	20.3	21.8	22.3
	3H	21.6	23.1	22.1	23.6	24.1	21.6	23.1	22.1	23.5	24.1
	4H	22.4	23.7	22.9	24.2	24.8	22.5	23.9	23.0	24.3	24.9
	6H	22.8	24.1	23.3	24.6	25.1	23.0	24.2	23.5	24.7	25.3
	8H	23.0	24.2	23.5	24.7	25.3	23.1	24.3	23.7	24.9	25.4
	12H	23.1	24.2	23.6	24.7	25.3	23.2	24.4	23.8	24.9	25.5
4H	2H	20.5	21.9	21.0	22.4	22.9	20.6	22.0	21.1	22.5	23.0
	3H	22.7	23.8	23.2	24.4	24.9	22.7	23.9	23.2	24.4	25.0
	4H	23.5	24.6	24.1	25.1	25.7	23.7	24.7	24.2	25.3	25.9
	6H	24.1	25.0	24.6	25.6	26.2	24.3	25.2	24.8	25.8	26.4
	8H	24.3	25.1	24.8	25.7	26.3	24.4	25.3	25.0	25.9	26.5
	12H	24.4	25.2	25.0	25.8	26.4	24.6	25.4	25.2	26.0	26.6
8H	4H	23.9	24.8	24.5	25.3	26.0	24.0	24.9	24.6	25.5	26.1
	6H	24.6	25.3	25.2	25.9	26.6	24.8	25.5	25.4	26.1	26.8
	8H	24.8	25.5	25.4	26.1	26.8	25.0	25.7	25.6	26.3	27.0
	12H	25.1	25.6	25.7	26.3	27.0	25.3	25.8	25.9	26.5	27.2
12H	4H	23.9	24.7	24.5	25.3	26.0	24.1	24.9	24.7	25.5	26.1
	6H	24.7	25.3	25.3	25.9	26.6	24.8	25.5	25.5	26.1	26.8
	8H	25.0	25.6	25.6	26.2	26.9	25.2	25.8	25.8	26.4	27.1

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0