



IES INDOOR REPORT

PHOTOMETRIC FILENAME : P4020-LED35-HO-FWA-D9.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] P4020-LED35-HO-FWA -D9
 [TESTLAB] Intertek
 [ISSUE DATE] November 22, 2017
 [MANUFAC] Prudential Ltg

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9380
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	85
Total Luminaire Watts	110
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	1.26
Spacing Criterion (Diagonal)	1.38
Basic Luminous Shape	Circular w/ Sides
Luminous Length (0-180)	2.04 ft (Diameter)
Luminous Width (90-270)	2.04 ft (Diameter)
Luminous Height	0.50 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	6542	6572	6597
55	5668	5725	5749
65	4603	4658	4696
75	3230	3275	3309
85	1402	1387	1363

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CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
0.0	2828.350	2828.350	2828.350	2828.350	2828.350	2828.350	2828.350	2828.350	2828.350	2828.350
2.5	2825.100	2825.850	2827.000	2825.700	2825.900	2825.700	2827.000	2825.850	2825.100	2825.850
5.0	2814.625	2815.550	2815.525	2816.475	2815.700	2816.475	2815.525	2815.550	2814.625	2815.550
7.5	2798.400	2796.750	2797.575	2799.575	2799.500	2799.575	2797.575	2796.750	2798.400	2796.750
10.0	2773.175	2774.500	2774.075	2774.150	2776.125	2774.150	2774.075	2774.500	2773.175	2774.500
12.5	2743.650	2746.350	2744.325	2744.525	2745.225	2744.525	2744.325	2746.350	2743.650	2746.350
15.0	2706.600	2707.400	2708.375	2709.825	2708.175	2709.825	2708.375	2707.400	2706.600	2707.400
17.5	2663.350	2664.400	2665.950	2667.725	2666.650	2667.725	2665.950	2664.400	2663.350	2664.400
20.0	2615.525	2617.675	2619.225	2620.225	2618.700	2620.225	2619.225	2617.675	2615.525	2617.675
22.5	2560.650	2562.900	2567.175	2566.325	2565.900	2566.325	2567.175	2562.900	2560.650	2562.900
25.0	2502.075	2503.475	2505.750	2507.625	2509.125	2507.625	2505.750	2503.475	2502.075	2503.475
27.5	2435.125	2435.675	2440.500	2441.350	2444.325	2441.350	2440.500	2435.675	2435.125	2435.675
30.0	2360.675	2363.675	2368.650	2370.500	2371.325	2370.500	2368.650	2363.675	2360.675	2363.675
32.5	2288.225	2288.825	2294.325	2296.425	2298.075	2296.425	2294.325	2288.825	2288.225	2288.825
35.0	2208.400	2209.625	2216.900	2218.325	2219.775	2218.325	2216.900	2209.625	2208.400	2209.625
37.5	2125.950	2126.400	2132.675	2135.350	2138.400	2135.350	2132.675	2126.400	2125.950	2126.400
40.0	2034.625	2037.700	2044.575	2047.700	2049.125	2047.700	2044.575	2037.700	2034.625	2037.700
42.5	1943.175	1947.150	1951.625	1955.650	1956.575	1955.650	1951.625	1947.150	1943.175	1947.150
45.0	1847.375	1849.475	1855.875	1860.475	1863.000	1860.475	1855.875	1849.475	1847.375	1849.475
47.5	1748.075	1750.300	1756.975	1762.050	1765.575	1762.050	1756.975	1750.300	1748.075	1750.300
50.0	1645.525	1647.125	1655.500	1659.875	1661.725	1659.875	1655.500	1647.125	1645.525	1647.125
52.5	1539.825	1543.475	1548.700	1555.975	1556.025	1555.975	1548.700	1543.475	1539.825	1543.475
55.0	1430.500	1436.825	1444.775	1448.225	1451.000	1448.225	1444.775	1436.825	1430.500	1436.825
57.5	1326.875	1326.475	1334.100	1340.125	1340.950	1340.125	1334.100	1326.475	1326.875	1326.475
60.0	1212.175	1215.750	1221.450	1228.500	1230.125	1228.500	1221.450	1215.750	1212.175	1215.750
62.5	1101.675	1107.125	1111.075	1119.275	1119.350	1119.275	1111.075	1107.125	1101.675	1107.125
65.0	988.200	994.200	1000.000	1008.150	1008.175	1008.150	1000.000	994.200	988.200	994.200
67.5	877.925	882.675	888.750	894.825	896.950	894.825	888.750	882.675	877.925	882.675
70.0	768.450	770.400	775.175	783.425	784.850	783.425	775.175	770.400	768.450	770.400
72.5	657.175	659.625	665.100	671.800	674.700	671.800	665.100	659.625	657.175	659.625
75.0	550.650	550.200	558.350	563.500	564.150	563.500	558.350	550.200	550.650	550.200
77.5	447.875	449.500	452.150	458.850	459.900	458.850	452.150	449.500	447.875	449.500
80.0	350.700	353.950	352.575	357.700	357.800	357.700	352.575	353.950	350.700	353.950
82.5	259.750	257.500	258.875	258.950	259.775	258.950	258.875	257.500	259.750	257.500
85.0	169.800	170.125	168.025	164.950	165.100	164.950	168.025	170.125	169.800	170.125
87.5	73.850	83.025	87.175	82.450	79.925	82.450	83.025	73.850	83.025	87.175
90.0	9.400	28.800	56.150	75.225	82.350	75.225	56.150	28.800	9.400	28.800
92.5	13.475	31.775	56.950	74.375	79.975	74.375	56.950	31.775	13.475	31.775
95.0	24.400	38.450	63.425	81.925	88.150	81.925	63.425	38.450	24.400	38.450
97.5	37.125	47.800	71.650	89.100	95.200	89.100	71.650	47.800	37.125	47.800
100.0	51.800	58.600	81.525	98.850	104.525	98.850	81.525	58.600	51.800	58.600
102.5	65.775	70.875	92.700	110.350	115.600	110.350	92.700	70.875	65.775	70.875
105.0	80.600	84.775	104.750	122.550	127.550	122.550	104.750	84.775	80.600	84.775
107.5	95.675	99.125	118.400	134.650	139.825	134.650	118.400	99.125	95.675	99.125
110.0	110.275	113.850	131.525	146.975	152.325	146.975	131.525	113.850	110.275	113.850
112.5	130.825	130.100	145.175	160.375	166.025	160.375	145.175	130.100	130.825	130.100
115.0	145.825	144.200	159.775	174.425	180.450	174.425	159.775	144.200	145.825	144.200
117.5	158.700	162.775	175.150	189.425	195.525	189.425	175.150	162.775	158.700	162.775
120.0	179.725	181.100	191.300	204.725	210.625	204.725	191.300	181.100	179.725	181.100
122.5	196.850	195.625	208.350	220.275	226.000	220.275	208.350	195.625	196.850	195.625
125.0	213.025	209.425	225.575	235.750	241.450	235.750	225.575	209.425	213.025	209.425
127.5	229.900	226.925	243.425	251.125	256.850	251.125	243.425	226.925	229.900	226.925
130.0	247.450	243.600	259.325	266.650	272.175	266.650	259.325	243.600	247.450	243.600
132.5	259.550	260.025	273.650	281.925	287.250	281.925	273.650	260.025	259.550	260.025

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CANDELA TABULATION - (Cont.)

135.0	271.800	279.375	287.250	296.600	301.675	296.600	287.250	279.375	271.800	279.375
137.5	293.050	295.675	300.800	310.600	315.550	310.600	300.800	295.675	293.050	295.675
140.0	311.775	310.725	315.525	324.150	328.900	324.150	315.525	310.725	311.775	310.725
142.5	330.725	323.475	329.775	337.300	341.700	337.300	329.775	323.475	330.725	323.475
145.0	344.050	334.125	343.200	349.775	353.750	349.775	343.200	334.125	344.050	334.125
147.5	349.625	347.775	354.825	361.425	365.025	361.425	354.825	347.775	349.625	347.775
150.0	361.400	363.075	365.225	372.275	375.425	372.275	365.225	363.075	361.400	363.075
152.5	377.975	375.725	375.675	382.375	385.125	382.375	375.675	375.725	377.975	375.725
155.0	388.325	383.825	385.975	391.750	394.275	391.750	385.975	383.825	388.325	383.825
157.5	395.700	392.850	395.400	400.200	402.650	400.200	395.400	392.850	395.700	392.850
160.0	405.200	402.350	403.800	407.625	409.975	407.625	403.800	402.350	405.200	402.350
162.5	414.325	410.975	411.550	414.425	416.375	414.425	411.550	410.975	414.325	410.975
165.0	422.325	418.650	418.250	420.400	421.975	420.400	418.250	418.650	422.325	418.650
167.5	429.250	425.225	424.275	425.575	426.675	425.575	424.275	425.225	429.250	425.225
170.0	435.175	430.650	428.925	429.725	430.775	429.725	428.925	430.650	435.175	430.650
172.5	439.775	434.975	432.825	432.900	433.800	432.900	432.825	434.975	439.775	434.975
175.0	442.850	438.050	435.450	435.100	435.700	435.100	435.450	438.050	442.850	438.050
177.5	444.850	439.900	436.975	436.500	437.150	436.500	436.975	439.900	444.850	439.900
180.0	439.150	439.150	439.150	439.150	439.150	439.150	439.150	439.150	439.150	439.150

Vert. Angles **Horizontal Angles**

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	2828.350	2828.350	2828.350	2828.350	2828.350	2828.350	2828.350
2.5	2827.000	2825.700	2825.900	2825.700	2827.000	2825.850	2825.100
5.0	2815.525	2816.475	2815.700	2816.475	2815.525	2815.550	2814.625
7.5	2797.575	2799.575	2799.500	2799.575	2797.575	2796.750	2798.400
10.0	2774.075	2774.150	2776.125	2774.150	2774.075	2774.500	2773.175
12.5	2744.325	2744.525	2745.225	2744.525	2744.325	2746.350	2743.650
15.0	2708.375	2709.825	2708.175	2709.825	2708.375	2707.400	2706.600
17.5	2665.950	2667.725	2666.650	2667.725	2665.950	2664.400	2663.350
20.0	2619.225	2620.225	2618.700	2620.225	2619.225	2617.675	2615.525
22.5	2567.175	2566.325	2565.900	2566.325	2567.175	2562.900	2560.650
25.0	2505.750	2507.625	2509.125	2507.625	2505.750	2503.475	2502.075
27.5	2440.500	2441.350	2444.325	2441.350	2440.500	2435.675	2435.125
30.0	2368.650	2370.500	2371.325	2370.500	2368.650	2363.675	2360.675
32.5	2294.325	2296.425	2298.075	2296.425	2294.325	2288.825	2288.225
35.0	2216.900	2218.325	2219.775	2218.325	2216.900	2209.625	2208.400
37.5	2132.675	2135.350	2138.400	2135.350	2132.675	2126.400	2125.950
40.0	2044.575	2047.700	2049.125	2047.700	2044.575	2037.700	2034.625
42.5	1951.625	1955.650	1956.575	1955.650	1951.625	1947.150	1943.175
45.0	1855.875	1860.475	1863.000	1860.475	1855.875	1849.475	1847.375
47.5	1756.975	1762.050	1765.575	1762.050	1756.975	1750.300	1748.075
50.0	1655.500	1659.875	1661.725	1659.875	1655.500	1647.125	1645.525
52.5	1548.700	1555.975	1556.025	1555.975	1548.700	1543.475	1539.825
55.0	1444.775	1448.225	1451.000	1448.225	1444.775	1436.825	1430.500
57.5	1334.100	1340.125	1340.950	1340.125	1334.100	1326.475	1326.875
60.0	1221.450	1228.500	1230.125	1228.500	1221.450	1215.750	1212.175
62.5	1111.075	1119.275	1119.350	1119.275	1111.075	1107.125	1101.675
65.0	1000.000	1008.150	1008.175	1008.150	1000.000	994.200	988.200
67.5	888.750	894.825	896.950	894.825	888.750	882.675	877.925
70.0	775.175	783.425	784.850	783.425	775.175	770.400	768.450
72.5	665.100	671.800	674.700	671.800	665.100	659.625	657.175
75.0	558.350	563.500	564.150	563.500	558.350	550.200	550.650
77.5	452.150	458.850	459.900	458.850	452.150	449.500	447.875
80.0	352.575	357.700	357.800	357.700	352.575	353.950	350.700

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CANDELA TABULATION - (Cont.)

82.5	258.875	258.950	259.775	258.950	258.875	257.500	259.750
85.0	168.025	164.950	165.100	164.950	168.025	170.125	169.800
87.5	87.175	82.450	79.925	82.450	87.175	83.025	73.850
90.0	56.150	75.225	82.350	75.225	56.150	28.800	9.400
92.5	56.950	74.375	79.975	74.375	56.950	31.775	13.475
95.0	63.425	81.925	88.150	81.925	63.425	38.450	24.400
97.5	71.650	89.100	95.200	89.100	71.650	47.800	37.125
100.0	81.525	98.850	104.525	98.850	81.525	58.600	51.800
102.5	92.700	110.350	115.600	110.350	92.700	70.875	65.775
105.0	104.750	122.550	127.550	122.550	104.750	84.775	80.600
107.5	118.400	134.650	139.825	134.650	118.400	99.125	95.675
110.0	131.525	146.975	152.325	146.975	131.525	113.850	110.275
112.5	145.175	160.375	166.025	160.375	145.175	130.100	130.825
115.0	159.775	174.425	180.450	174.425	159.775	144.200	145.825
117.5	175.150	189.425	195.525	189.425	175.150	162.775	158.700
120.0	191.300	204.725	210.625	204.725	191.300	181.100	179.725
122.5	208.350	220.275	226.000	220.275	208.350	195.625	196.850
125.0	225.575	235.750	241.450	235.750	225.575	209.425	213.025
127.5	243.425	251.125	256.850	251.125	243.425	226.925	229.900
130.0	259.325	266.650	272.175	266.650	259.325	243.600	247.450
132.5	273.650	281.925	287.250	281.925	273.650	260.025	259.550
135.0	287.250	296.600	301.675	296.600	287.250	279.375	271.800
137.5	300.800	310.600	315.550	310.600	300.800	295.675	293.050
140.0	315.525	324.150	328.900	324.150	315.525	310.725	311.775
142.5	329.775	337.300	341.700	337.300	329.775	323.475	330.725
145.0	343.200	349.775	353.750	349.775	343.200	334.125	344.050
147.5	354.825	361.425	365.025	361.425	354.825	347.775	349.625
150.0	365.225	372.275	375.425	372.275	365.225	363.075	361.400
152.5	375.675	382.375	385.125	382.375	375.675	375.725	377.975
155.0	385.975	391.750	394.275	391.750	385.975	383.825	388.325
157.5	395.400	400.200	402.650	400.200	395.400	392.850	395.700
160.0	403.800	407.625	409.975	407.625	403.800	402.350	405.200
162.5	411.550	414.425	416.375	414.425	411.550	410.975	414.325
165.0	418.250	420.400	421.975	420.400	418.250	418.650	422.325
167.5	424.275	425.575	426.675	425.575	424.275	425.225	429.250
170.0	428.925	429.725	430.775	429.725	428.925	430.650	435.175
172.5	432.825	432.900	433.800	432.900	432.825	434.975	439.775
175.0	435.450	435.100	435.700	435.100	435.450	438.050	442.850
177.5	436.975	436.500	437.150	436.500	436.975	439.900	444.850
180.0	439.150	439.150	439.150	439.150	439.150	439.150	439.150

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1031.64	N.A.	11.00
0-30	2185.71	N.A.	23.30
0-40	3570.8	N.A.	38.10
0-60	6290.54	N.A.	67.10
0-80	7871.6	N.A.	83.90
0-90	8065.34	N.A.	86.00
10-90	7797.89	N.A.	83.10
20-40	2539.16	N.A.	27.10
20-50	3969.98	N.A.	42.30
40-70	3709.45	N.A.	39.50
60-80	1581.05	N.A.	16.90
70-80	591.35	N.A.	6.30
80-90	193.74	N.A.	2.10
90-110	177.50	N.A.	1.90
90-120	337.05	N.A.	3.60
90-130	538.32	N.A.	5.70
90-150	975.47	N.A.	10.40
90-180	1314.31	N.A.	14.00
110-180	1136.81	N.A.	12.10
0-180	9379.65	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	267.45
10-20	764.19
20-30	1154.08
30-40	1385.09
40-50	1430.82
50-60	1288.93
60-70	989.71
70-80	591.35
80-90	193.74
90-100	67.21
100-110	110.29
110-120	159.55
120-130	201.27
130-140	222.03
140-150	215.11
150-160	178.88
160-170	118.45
170-180	41.51

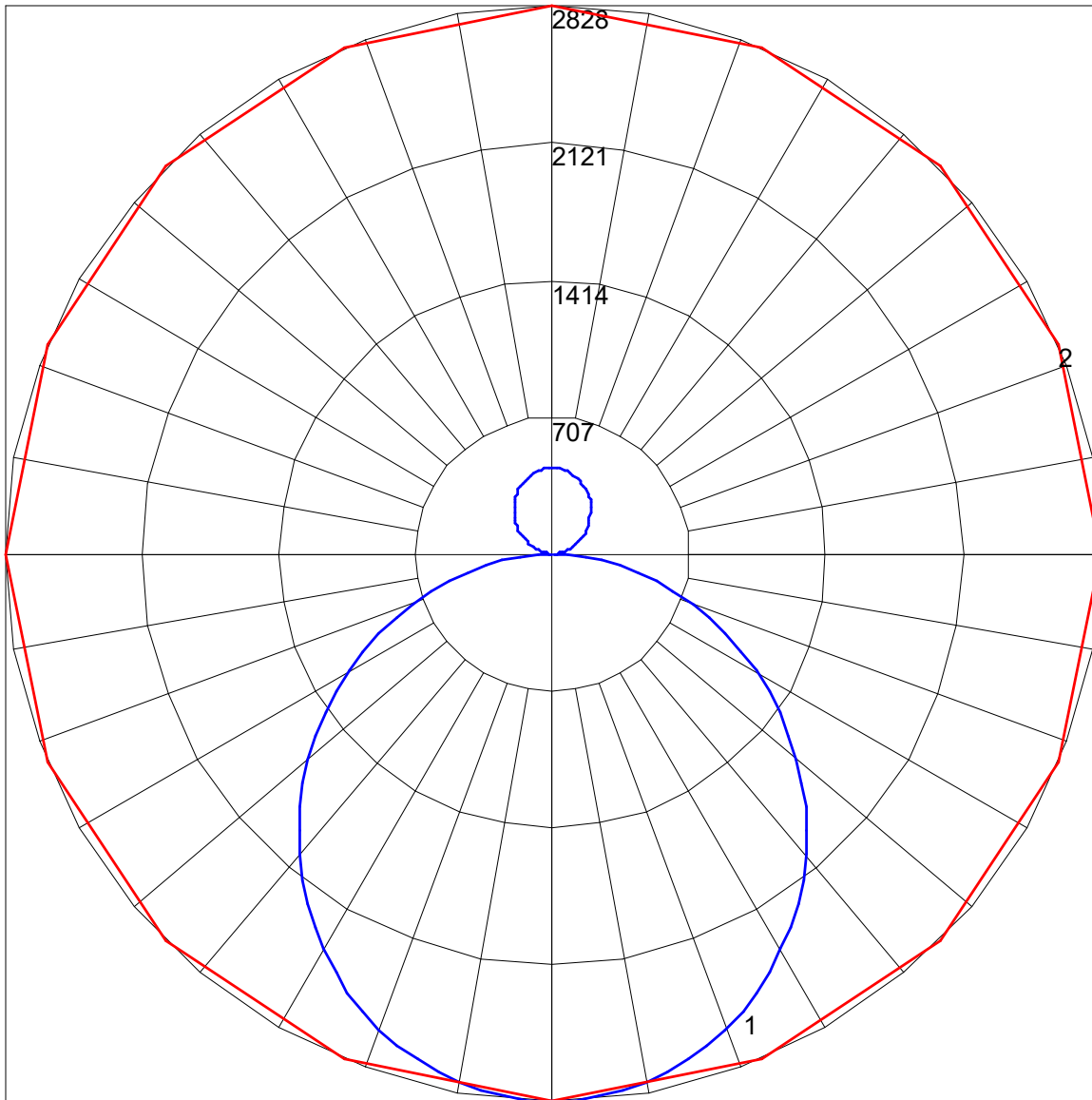
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

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	0
0	116	116	116	116	111	111	111	111	103	103	103	96	96	96	89	89	89	86
1	105	101	96	92	101	97	93	90	90	87	84	84	81	79	78	76	74	71
2	96	88	81	75	92	84	78	73	79	74	69	73	69	66	68	65	62	59
3	87	77	69	62	84	74	67	61	69	63	58	65	60	55	60	56	53	50
4	80	68	59	53	76	66	58	52	61	55	49	57	52	47	54	49	45	42
5	73	61	52	45	70	59	50	44	55	48	43	52	46	41	48	43	39	37
6	68	54	46	39	65	53	45	39	50	42	37	47	40	36	44	39	34	32
7	63	49	41	35	60	48	40	34	45	38	33	42	36	32	40	35	31	28
8	58	45	37	31	56	44	36	30	41	34	29	39	33	28	37	31	27	25
9	54	41	33	28	52	40	32	27	38	31	26	36	30	25	34	29	25	23
10	51	38	30	25	49	37	30	25	35	28	24	33	27	23	31	26	22	21

POLAR GRAPH



Maximum Candela = 2828.35 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)