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IES INDOOR REPORT

PHOTOMETRIC FILENAME : FSN-4170-SEED.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-1995
[TEST] TH-1157A
[ISSUE DATE] 2020/4/30 16:20
[MANUFAC]
[LUMCAT]
[LUMINAIRE] FSN-4170-SEED-BRSS
[LAMPCAT]
[LAMP]
[VOLTAGE] 120 V
[CURRENT] 0.073 A
[POWERFACTOR] 0.945
[TESTLAB] Inventfine instruments
[TESTINST] GPM-1800B
[TESTDIST] 8.499 m
[TESTTEMPERATURE] 26
[TESTHUMIDITY] 65
[TESTOPERATOR] Jacky tang
[BALLAST]
[BALLASTCAT]

CHARACTERISTICS

Lumens Per Lamp	813.2 (1 lamp)
Total Lamp Lumens	813.2
Luminaire Lumens	813
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	99
Total Luminaire Watts	8.23
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.06
Spacing Criterion (90-270)	1.06
Spacing Criterion (Diagonal)	1.42
Basic Luminous Shape	Point
Luminous Length (0-180)	0.00 m
Luminous Width (90-270)	0.00 m
Luminous Height	0.00 m

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LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

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CANDELA TABULATION

	<u>0</u>	<u>90</u>	<u>180</u>	<u>270</u>	<u>360</u>
0	135.57	135.57	135.57	135.57	135.57
1	135.80	135.85	135.57	136.04	135.80
2	135.67	135.69	135.41	136.06	135.67
3	135.53	136.88	135.64	135.99	135.53
4	135.29	136.13	134.98	135.66	135.29
5	134.31	135.48	133.96	135.48	134.31
6	133.81	134.47	130.20	135.25	133.81
7	132.79	133.35	130.49	135.88	132.79
8	131.44	134.16	130.62	135.47	131.44
9	130.86	134.68	131.93	134.95	130.86
10	130.62	134.20	132.58	134.71	130.62
11	129.93	133.61	134.47	134.96	129.93
12	128.76	132.69	135.46	136.27	128.76
13	128.50	132.02	134.88	137.75	128.50
14	127.91	131.03	133.75	138.95	127.91
15	125.61	129.28	134.05	138.70	125.61
16	121.90	127.79	132.85	137.11	121.90
17	117.56	125.94	131.29	136.12	117.56
18	114.98	123.34	127.92	135.16	114.98
19	113.22	122.92	125.42	134.58	113.22
20	110.75	123.03	123.68	134.21	110.75
21	108.17	120.63	122.06	134.14	108.17
22	105.75	117.82	120.08	132.37	105.75
23	103.30	114.25	117.33	130.69	103.30
24	102.09	107.11	113.04	129.65	102.09
25	101.18	102.86	109.43	128.27	101.18
26	99.52	100.19	110.05	126.64	99.52
27	98.41	98.15	113.86	124.31	98.41
28	98.07	97.75	109.18	121.61	98.07
29	98.07	96.75	105.21	119.02	98.07
30	96.33	95.90	98.91	116.76	96.33
31	96.32	95.60	99.33	114.06	96.32
32	96.30	95.35	98.87	111.58	96.30
33	96.53	95.79	96.56	109.41	96.53
34	96.03	96.69	96.16	106.90	96.03
35	95.78	97.47	95.54	104.21	95.78
36	95.76	97.95	95.05	102.26	95.76
37	95.79	98.01	94.54	100.46	95.79
38	96.16	98.11	94.35	99.38	96.16
39	96.35	97.98	94.40	98.05	96.35
40	96.68	97.66	94.52	97.43	96.68
41	96.59	97.26	94.48	96.70	96.59
42	96.66	97.10	94.14	95.58	96.66
43	96.29	97.21	94.64	95.01	96.29
44	96.03	97.15	94.55	95.43	96.03
45	95.75	97.17	94.00	95.22	95.75
46	95.91	97.31	93.65	95.58	95.91
47	95.67	97.08	93.62	95.27	95.67
48	95.61	96.44	93.37	95.12	95.61
49	94.95	95.26	93.13	95.07	94.95
50	94.17	93.09	93.14	94.98	94.17
51	93.46	92.49	93.17	94.81	93.46
52	91.74	91.41	92.75	94.83	91.74
53	91.68	90.46	92.34	94.63	91.68

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CANDELA TABULATION - (Cont.)

54	90.61	89.61	91.70	94.68	90.61
55	89.80	88.86	91.52	94.53	89.80
56	89.00	88.43	91.60	94.76	89.00
57	88.47	87.88	91.50	94.32	88.47
58	88.31	87.29	91.46	94.36	88.31
59	87.00	86.78	91.06	93.66	87.00
60	86.66	86.16	90.90	92.83	86.66
61	85.84	85.66	91.19	91.82	85.84
62	84.81	84.75	90.99	91.31	84.81
63	84.39	83.60	89.50	90.58	84.39
64	85.21	82.65	87.15	90.11	85.21
65	82.71	82.89	84.87	89.80	82.71
66	81.15	81.53	84.60	89.50	81.15
67	80.42	80.35	82.77	88.65	80.42
68	83.22	79.23	81.21	88.21	83.22
69	82.63	78.47	80.01	87.48	82.63
70	81.78	77.65	79.05	86.98	81.78
71	80.32	76.67	78.24	86.43	80.32
72	77.84	75.91	77.35	85.56	77.84
73	77.64	74.60	76.33	84.36	77.64
74	77.53	73.60	74.37	83.55	77.53
75	77.42	72.60	73.02	82.87	77.42
76	77.74	71.20	71.80	81.83	77.74
77	76.69	70.37	70.46	80.56	76.69
78	75.79	69.51	69.45	78.93	75.79
79	74.00	68.78	69.06	77.43	74.00
80	71.01	67.76	68.72	75.95	71.01
81	65.68	67.07	67.80	73.79	65.68
82	66.06	66.82	68.22	72.00	66.06
83	65.02	65.75	64.24	70.60	65.02
84	64.12	65.37	63.63	68.81	64.12
85	63.66	66.75	62.05	66.84	63.66
86	62.81	68.17	63.50	65.18	62.81
87	64.01	68.51	63.84	62.87	64.01
88	64.35	68.32	63.09	61.14	64.35
89	64.48	68.25	62.51	60.54	64.48
90	65.31	69.96	63.30	61.63	65.31
91	66.11	70.65	61.98	62.58	66.11
92	66.83	70.71	63.14	63.84	66.83
93	68.12	71.95	64.65	66.32	68.12
94	68.91	72.57	60.85	68.46	68.91
95	69.46	72.04	40.23	69.71	69.46
96	69.70	72.44	30.86	70.58	69.70
97	70.12	72.25	26.35	70.94	70.12
98	70.35	72.03	20.70	71.43	70.35
99	69.84	71.50	2.09	71.55	69.84
100	69.25	70.65	1.74	71.27	69.25
101	68.70	70.15	21.65	71.15	68.70
102	67.70	68.92	52.19	70.69	67.70
103	66.16	66.52	66.77	69.90	66.16
104	65.10	64.03	71.20	70.11	65.10
105	63.13	62.66	72.05	69.81	63.13
106	60.92	61.01	72.84	69.23	60.92
107	59.81	58.77	73.95	68.54	59.81
108	58.45	56.87	74.90	68.29	58.45
109	57.12	54.64	75.10	67.45	57.12

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CANDELA TABULATION - (Cont.)

110	55.39	53.02	74.45	67.01	55.39
111	53.98	51.67	72.46	66.59	53.98
112	52.50	50.53	73.17	65.10	52.50
113	50.76	48.99	73.57	64.71	50.76
114	48.82	47.54	71.72	63.06	48.82
115	47.42	46.83	70.62	60.85	47.42
116	45.68	46.08	70.67	58.51	45.68
117	44.47	45.96	69.89	56.55	44.47
118	43.88	44.93	68.43	54.88	43.88
119	43.14	44.62	65.55	53.46	43.14
120	43.73	43.26	65.78	51.60	43.73
121	43.30	42.58	60.90	50.39	43.30
122	42.36	41.51	63.54	49.27	42.36
123	41.28	40.89	62.73	47.99	41.28
124	39.59	40.63	61.90	46.07	39.59
125	37.64	40.44	61.35	38.76	37.64
126	36.01	39.80	59.04	29.33	36.01
127	33.82	39.39	55.43	11.47	33.82
128	31.93	38.59	51.83	2.34	31.93
129	29.57	39.55	48.92	1.94	29.57
130	26.59	38.72	47.46	1.62	26.59
131	25.82	37.45	45.61	1.42	25.82
132	23.12	38.82	43.61	1.29	23.12
133	18.83	38.35	40.87	1.29	18.83
134	14.62	36.64	39.89	1.29	14.62
135	11.48	35.47	40.15	1.26	11.48
136	11.13	32.27	37.62	1.36	11.13
137	12.05	29.40	34.52	1.40	12.05
138	10.27	25.73	27.34	1.49	10.27
139	6.00	22.24	20.12	1.48	6.00
140	3.52	15.18	13.31	1.51	3.52
141	2.92	10.50	5.26	1.45	2.92
142	3.03	7.98	3.92	1.60	3.03
143	3.00	4.95	4.24	1.70	3.00
144	3.21	3.60	5.17	1.82	3.21
145	2.97	3.88	6.80	1.96	2.97
146	3.47	4.32	8.28	2.38	3.47
147	3.94	4.76	9.92	3.13	3.94
148	6.64	5.84	14.10	3.71	6.64
149	8.59	8.01	16.26	4.37	8.59
150	11.80	12.33	15.91	5.71	11.80
151	14.23	15.28	16.07	7.10	14.23
152	14.61	17.60	15.81	8.60	14.61
153	14.40	19.63	15.94	9.80	14.40
154	14.24	18.99	16.05	10.66	14.24
155	14.24	18.46	15.98	11.25	14.24
156	12.39	17.19	13.94	11.39	12.39
157	12.51	16.35	12.68	11.46	12.51
158	12.44	15.04	12.83	10.67	12.44
159	12.12	13.22	11.87	10.09	12.12
160	11.06	11.81	9.07	8.12	11.06
161	8.77	7.34	2.91	5.41	8.77
162	2.69	2.92	2.66	2.17	2.69
163	2.38	2.41	2.39	1.84	2.38
164	2.30	2.36	2.17	1.90	2.30
165	2.19	2.24	2.04	2.42	2.19

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166	2.12	2.14	2.04	2.81	2.12
167	2.07	2.07	1.98	2.77	2.07
168	2.03	2.01	1.91	2.74	2.03
169	1.96	2.00	1.92	2.60	1.96
170	1.78	2.01	1.90	2.73	1.78
171	1.60	1.97	2.05	2.73	1.60
172	1.56	1.86	2.65	2.58	1.56
173	1.55	1.89	2.87	2.51	1.55
174	1.55	1.95	2.96	2.47	1.55
175	1.55	1.96	3.25	2.17	1.55
176	1.56	1.97	3.49	1.60	1.56
177	1.58	1.87	4.00	1.69	1.58
178	1.58	1.89	4.05	1.86	1.58
179	1.59	2.25	4.07	1.80	1.59
180	1.63	2.32	3.98	1.80	1.63

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	49.43	6.10	6.10
0-30	101.06	12.40	12.40
0-40	162.96	20.00	20.00
0-60	318.90	39.20	39.20
0-80	484.20	59.50	59.50
0-90	556.14	68.40	68.40
10-90	543.37	66.80	66.80
20-40	113.53	14.00	14.00
20-50	187.48	23.10	23.10
40-70	240.51	29.60	29.60
60-80	165.31	20.30	20.30
70-80	80.74	9.90	9.90
80-90	71.94	8.80	8.80
90-110	135.80	16.70	16.70
90-120	192.08	23.60	23.60
90-130	229.58	28.20	28.20
90-150	249.66	30.70	30.70
90-180	257.05	31.60	31.60
110-180	121.25	14.90	14.90
0-180	813.19	100.00	100.00

Total Luminaire Efficiency = 100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	12.77
10-20	36.66
20-30	51.63
30-40	61.90
40-50	73.95
50-60	81.98
60-70	84.57
70-80	80.74
80-90	71.94
90-100	67.90
100-110	67.90
110-120	56.28
120-130	37.50
130-140	16.58
140-150	3.51
150-160	6.26
160-170	0.92
170-180	0.21

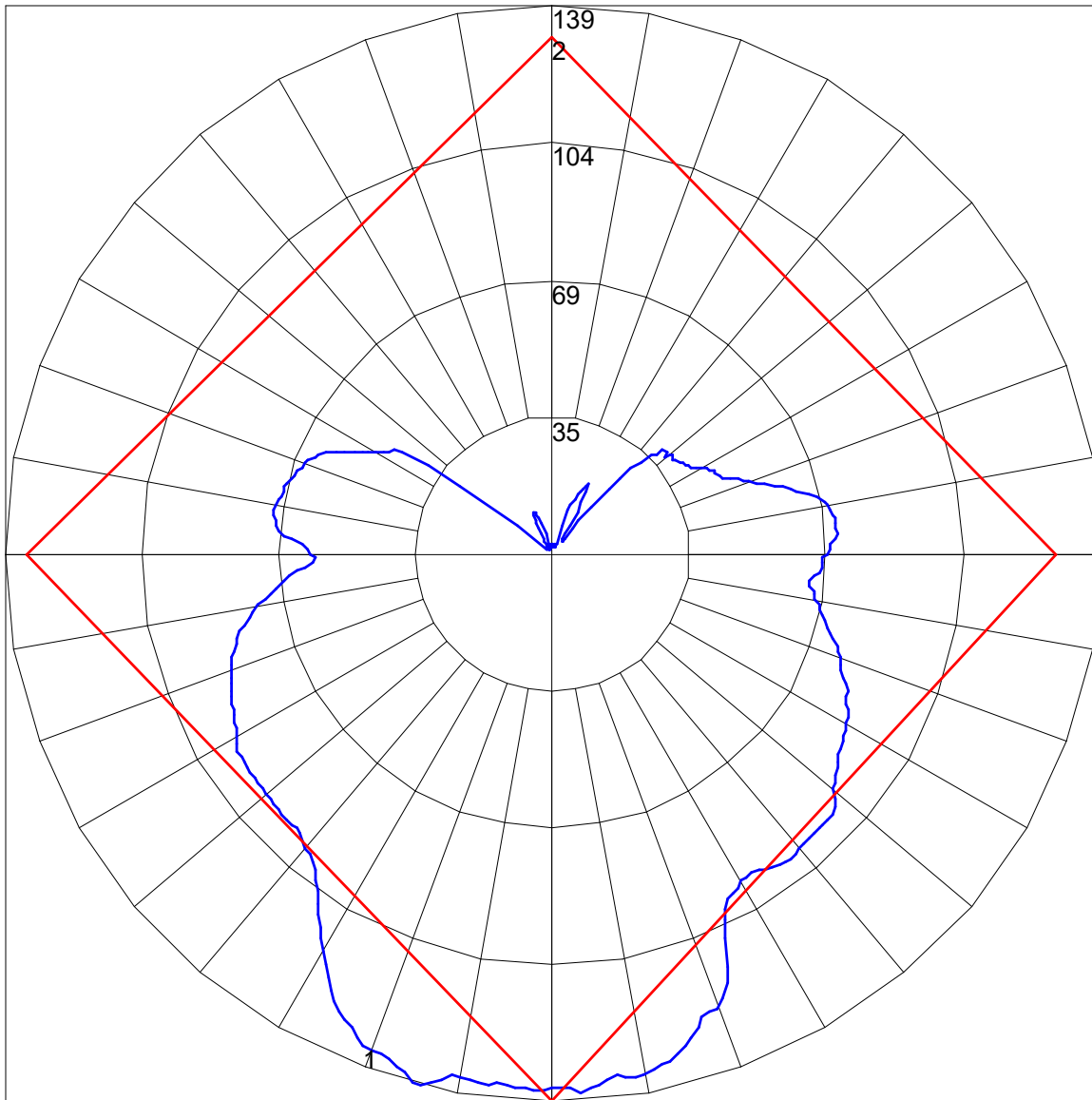
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	112	112	112	112	105	105	105	105	94	94	94	83	83	83	73	73	73	68
1	98	91	86	81	92	86	81	76	76	72	68	66	63	61	58	56	53	49
2	87	78	70	63	82	73	66	60	64	58	53	56	51	47	49	45	42	38
3	79	67	58	51	73	63	55	48	55	49	43	48	43	38	42	38	34	30
4	72	59	49	42	67	55	46	40	49	41	36	42	37	32	37	32	28	25
5	65	52	42	35	61	49	40	34	43	36	30	38	32	27	33	28	24	21
6	60	46	37	30	56	44	35	29	39	32	26	34	28	24	30	25	21	18
7	56	42	33	26	52	39	31	25	35	28	23	31	25	21	27	22	18	16
8	52	38	29	23	48	36	28	22	32	25	20	28	22	18	25	20	16	14
9	48	35	26	21	45	33	25	20	29	23	18	26	20	16	23	18	15	12
10	45	32	24	18	42	30	23	18	27	21	16	24	19	15	21	17	13	11

POLAR GRAPH



Maximum Candela = 138.95 Located At Horizontal Angle = 270, Vertical Angle = 14
1 - Vertical Plane Through Horizontal Angles (270 - 90) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (14) (Through Max. Cd.)