

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSHBHT205KW.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST]  
[TESTLAB]  
[TESTDATE] 2019-12-09  
[ISSUEDATE] 2019-12-16 19:12:12  
[NEARFIELD]  
[LAMPPOSITION] 0,0  
[OTHER]  
[MANUFAC] BEGHELLI  
[LUMINAIRE] FSHBHT205KW  
[LAMPCAT] HIGHBAY LUMINAIRE

**CHARACTERISTICS**

Lumens Per Lamp	30409 (1 lamp)
Total Lamp Lumens	30409
Luminaire Lumens	30454
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	156
Total Luminaire Watts	195.404
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	1.30
Spacing Criterion (Diagonal)	1.42
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.45 m (Diameter)
Luminous Width (90-270)	0.45 m (Diameter)
Luminous Height	0.00 m

**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	66742	65784	66734
55	63857	62265	61984
65	53659	51849	52097
75	33910	30786	29627
85	4660	3301	3338

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**CANDELA TABULATION**

	<u>0</u>	<u>30</u>	<u>60</u>	<u>90</u>	<u>120</u>	<u>150</u>	<u>180</u>	<u>210</u>	<u>240</u>	<u>270</u>
<b>0</b>	10759.67	10759.67	10759.67	10759.67	10759.67	10759.67	10759.67	10759.67	10759.67	10759.67
<b>5</b>	10680.53	10634.39	10599.85	10816.88	10759.37	10719.13	10679.76	10654.34	10620.68	10845.74
<b>10</b>	10555.44	10502.68	10470.22	10683.78	10624.20	10591.75	10559.36	10540.59	10507.08	10732.21
<b>15</b>	10360.93	10303.83	10271.13	10476.68	10420.81	10399.41	10370.77	10356.28	10325.30	10551.58
<b>20</b>	10091.49	10025.63	9998.27	10191.29	10136.88	10125.42	10101.58	10095.91	10067.50	10288.18
<b>25</b>	9745.74	9672.22	9642.33	9828.43	9777.75	9776.22	9759.52	9764.86	9736.76	9951.81
<b>30</b>	9316.12	9240.60	9209.27	9382.88	9337.00	9346.56	9333.55	9351.13	9323.32	9531.56
<b>35</b>	8803.28	8722.39	8692.99	8850.64	8810.77	8831.32	8827.80	8850.70	8825.52	9030.40
<b>40</b>	8209.60	8116.98	8090.28	8233.07	8195.10	8228.56	8233.70	8268.39	8239.38	8439.75
<b>45</b>	7509.07	7425.91	7376.50	7508.11	7491.48	7520.34	7546.00	7595.36	7572.11	7757.82
<b>50</b>	6716.00	6635.33	6591.02	6687.57	6681.59	6726.85	6773.52	6808.68	6809.81	6981.99
<b>55</b>	5827.69	5718.32	5646.56	5656.75	5643.94	5741.92	5867.78	5930.60	5941.59	6113.64
<b>60</b>	4716.77	4600.86	4562.54	4604.47	4597.99	4670.47	4769.65	4860.78	4849.35	5018.18
<b>65</b>	3608.18	3505.72	3467.21	3503.19	3523.22	3609.80	3685.72	3771.53	3779.92	3914.78
<b>70</b>	2485.55	2354.83	2302.47	2293.38	2313.93	2428.99	2512.87	2643.63	2643.77	2756.60
<b>75</b>	1396.46	1291.03	1244.52	1220.07	1243.41	1345.37	1433.50	1521.28	1526.65	1610.69
<b>80</b>	510.48	440.92	426.16	399.39	417.91	488.79	539.38	605.14	618.27	664.28
<b>85</b>	64.62	47.48	44.06	46.29	49.85	64.96	80.00	100.54	102.70	113.22
<b>90</b>	0.27	0.25	0.31	9.82	9.58	9.30	8.99	9.19	10.13	3.54
<b>95</b>	0.88	0.84	0.97	12.90	12.61	12.31	11.90	11.63	11.46	0.69
<b>100</b>	1.90	1.88	2.02	16.12	15.81	15.47	15.07	14.77	14.58	1.61
<b>105</b>	3.18	3.21	3.36	19.36	19.01	18.68	18.24	17.98	17.78	2.86
<b>110</b>	4.69	4.76	4.90	22.55	22.14	21.82	21.38	21.12	20.91	4.37
<b>115</b>	6.36	6.48	6.59	25.63	25.21	24.89	24.47	24.19	23.98	6.09
<b>120</b>	8.29	8.42	8.56	28.59	28.12	27.82	27.37	27.14	26.90	7.95
<b>125</b>	10.79	10.98	11.11	31.32	30.86	30.53	30.10	29.88	29.67	10.38
<b>130</b>	14.04	14.35	14.46	33.79	33.32	33.00	32.60	32.43	32.18	13.52
<b>135</b>	17.95	18.20	18.33	36.04	35.54	35.26	34.84	34.73	34.47	17.35
<b>140</b>	21.84	22.08	22.16	38.00	37.51	37.25	36.87	36.77	36.49	21.26
<b>145</b>	25.62	25.81	25.91	39.77	39.27	39.05	38.66	38.62	38.35	25.05
<b>150</b>	29.20	29.30	29.40	41.31	40.78	40.67	40.27	40.24	39.98	28.74
<b>155</b>	32.51	32.52	32.63	42.54	42.01	41.95	41.57	41.56	41.30	32.19
<b>160</b>	35.34	35.23	35.37	43.27	42.71	42.70	42.30	42.35	42.08	35.17
<b>165</b>	37.62	37.47	37.58	43.64	43.10	43.06	42.75	42.84	42.55	37.55
<b>170</b>	39.42	39.20	39.30	43.55	43.15	43.10	42.87	42.83	42.73	39.41
<b>175</b>	40.67	40.42	40.52	42.93	42.64	42.55	42.38	42.35	42.28	40.73
<b>180</b>	41.65	41.65	41.65	41.65	41.65	41.65	41.65	41.65	41.65	41.65

**Vert. Angles Horizontal Angles**

	<u>300</u>	<u>330</u>	<u>360</u>
<b>0</b>	10759.67	10759.67	10759.67
<b>5</b>	10788.53	10726.41	10680.53
<b>10</b>	10672.55	10604.95	10555.44
<b>15</b>	10492.79	10416.35	10360.93
<b>20</b>	10232.43	10148.40	10091.49
<b>25</b>	9891.28	9804.06	9745.74
<b>30</b>	9472.99	9380.41	9316.12
<b>35</b>	8976.00	8874.68	8803.28
<b>40</b>	8385.81	8278.32	8209.60
<b>45</b>	7707.34	7592.99	7509.07
<b>50</b>	6910.54	6816.05	6716.00
<b>55</b>	6047.21	5936.38	5827.69
<b>60</b>	4976.40	4845.37	4716.77

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**CANDELA TABULATION - (Cont.)**

<b>65</b>	3845.37	3720.55	3608.18
<b>70</b>	2711.70	2579.05	2485.55
<b>75</b>	1564.82	1467.20	1396.46
<b>80</b>	645.75	558.25	510.48
<b>85</b>	104.73	80.12	64.62
<b>90</b>	1.58	0.33	0.27
<b>95</b>	0.77	0.70	0.88
<b>100</b>	1.72	1.71	1.90
<b>105</b>	2.98	3.00	3.18
<b>110</b>	4.47	4.46	4.69
<b>115</b>	6.13	6.13	6.36
<b>120</b>	8.02	8.08	8.29
<b>125</b>	10.43	10.49	10.79
<b>130</b>	13.60	13.74	14.04
<b>135</b>	17.42	17.61	17.95
<b>140</b>	21.31	21.46	21.84
<b>145</b>	25.12	25.22	25.62
<b>150</b>	28.79	28.83	29.20
<b>155</b>	32.24	32.21	32.51
<b>160</b>	35.22	35.07	35.34
<b>165</b>	37.60	37.37	37.62
<b>170</b>	39.47	39.16	39.42
<b>175</b>	40.79	40.43	40.67
<b>180</b>	41.65	41.65	41.65

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	3954.42	13.00	13.00
0-30	8463.12	27.80	27.80
0-40	13992.68	46.00	45.90
0-60	24997.86	82.20	82.10
0-80	30143.02	99.10	99.00
0-90	30328.3	99.70	99.60
10-90	29309.75	96.40	96.20
20-40	10038.26	33.00	33.00
20-50	15854.47	52.10	52.10
40-70	14612.09	48.10	48.00
60-80	5145.16	16.90	16.90
70-80	1538.25	5.10	5.10
80-90	185.28	0.60	0.60
90-110	18.73	0.10	0.10
90-120	34.12	0.10	0.10
90-130	52.57	0.20	0.20
90-150	93.15	0.30	0.30
90-180	125.53	0.40	0.40
110-180	106.80	0.40	0.40
0-180	30453.83	100.10	100.00

Total Luminaire Efficiency = 100.10%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	1018.55
10-20	2935.87
20-30	4508.7
30-40	5529.56
40-50	5816.21
50-60	5188.97
60-70	3606.91
70-80	1538.25
80-90	185.28
90-100	7.30
100-110	11.44
110-120	15.38
120-130	18.45
130-140	20.43
140-150	20.15
150-160	17.07
160-170	11.36
170-180	3.95

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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	74	71
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	66	63	60
4	83	72	63	57	81	70	62	56	68	61	55	65	59	54	63	58	54	52
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	45
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	51	46	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

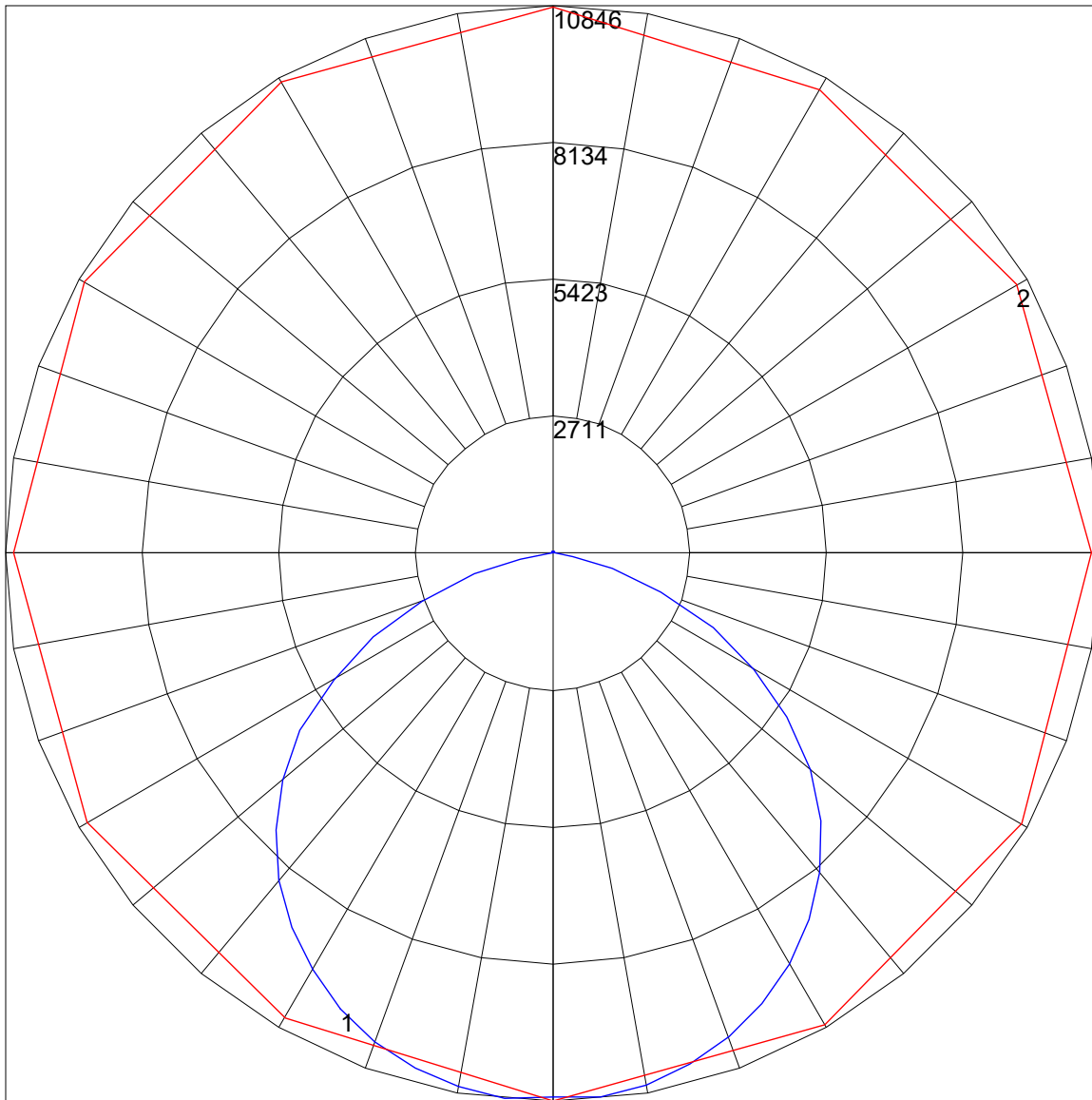
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**UGR TABLE - CORRECTED**

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	25.9	27.5	26.2	27.8	28.1	25.7	27.3	26.0	27.6	27.9
	3H	27.3	28.7	27.7	29.1	29.4	27.0	28.5	27.4	28.8	29.1
	4H	27.6	29.0	28.0	29.4	29.7	27.3	28.7	27.7	29.0	29.4
	6H	27.8	29.0	28.2	29.4	29.8	27.4	28.7	27.8	29.0	29.4
	8H	27.8	29.0	28.2	29.4	29.8	27.4	28.6	27.8	29.0	29.4
	12H	27.8	28.9	28.2	29.3	29.7	27.4	28.5	27.8	28.9	29.3
4H	2H	26.4	27.8	26.8	28.1	28.5	26.2	27.6	26.6	27.9	28.3
	3H	28.0	29.1	28.4	29.5	29.9	27.7	28.8	28.1	29.2	29.6
	4H	28.4	29.4	28.9	29.9	30.3	28.1	29.1	28.5	29.5	29.9
	6H	28.6	29.5	29.1	29.9	30.4	28.2	29.1	28.7	29.5	30.0
	8H	28.6	29.4	29.1	29.9	30.4	28.2	29.0	28.7	29.5	29.9
	12H	28.6	29.3	29.1	29.8	30.3	28.2	28.9	28.7	29.4	29.9
8H	4H	28.6	29.4	29.0	29.8	30.3	28.2	29.0	28.7	29.5	29.9
	6H	28.8	29.5	29.3	30.0	30.4	28.4	29.0	28.9	29.5	30.0
	8H	28.8	29.4	29.3	29.9	30.4	28.4	29.0	28.9	29.5	30.0
	12H	28.8	29.3	29.3	29.8	30.4	28.4	28.9	28.9	29.4	29.9
12H	4H	28.6	29.3	29.0	29.8	30.2	28.2	28.9	28.7	29.4	29.9
	6H	28.8	29.4	29.3	29.9	30.4	28.3	29.0	28.9	29.4	30.0
	8H	28.8	29.3	29.3	29.8	30.4	28.4	28.9	28.9	29.4	30.0

Maximum UGR = 30.4

POLAR GRAPH



Maximum Candela = 10845.74 Located At Horizontal Angle = 270, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (270 - 90) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)