



1961 McGaw Ave, Irvine, CA 92614
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IES INDOOR REPORT
PHOTOMETRIC FILENAME : HLS CLEANING LIGHT.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] 3721
 [TESTLAB] Tempo LLC
 [ISSUEDATE] 4/4/2019 12:14:24 PM
 [MANUFAC] Tempo LLC
 [LUMCAT] HLS Cleaning Light
 [LUMINAIRE] Aluminum housing with lightly frosted lens
 [LAMP] Twenty-One (21) white LEDs (3500K) with batwing optics
 [_ELECTRICALS] 23.91 VDC, 0.52 A, 1.00 PF

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1218
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	12.52
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.66
Spacing Criterion (90-270)	1.26
Spacing Criterion (Diagonal)	1.68
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.11 ft
Luminous Width (90-270)	1.00 ft
Luminous Height	0.04 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	20785	38564	24933
55	11852	21334	21751
65	8334	11355	16492
75	4852	7079	11729
85	3470	4525	7293

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CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0.0	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47
2.5	312.88	312.32	311.76	310.21	308.65	307.84	307.03	306.06	305.10	303.99
5.0	337.74	336.58	335.41	332.65	329.89	327.42	324.95	321.99	319.03	315.85
7.5	372.12	370.21	368.29	363.90	359.50	354.90	350.30	344.78	339.25	333.13
10.0	413.90	411.31	408.71	402.56	396.41	388.96	381.51	372.83	364.14	354.44
12.5	463.24	459.96	456.67	448.15	439.63	428.95	418.27	405.65	393.02	379.35
15.0	516.09	512.46	508.81	498.30	487.77	473.96	460.14	443.13	426.12	407.63
17.5	570.70	566.89	563.08	550.81	538.54	522.19	505.83	484.55	463.26	439.27
20.0	618.35	615.33	612.31	599.79	587.27	569.25	551.23	526.65	502.06	472.80
22.5	650.73	648.71	646.68	635.95	625.23	608.38	591.53	565.64	539.75	506.46
25.0	659.90	659.74	659.58	652.38	645.18	632.34	619.50	595.91	572.31	536.74
27.5	639.86	642.30	644.73	643.23	641.72	635.60	629.47	611.53	593.58	559.74
30.0	594.15	598.84	603.53	607.97	612.41	615.13	617.85	609.31	600.76	572.55
32.5	529.11	535.17	541.23	550.81	560.37	572.32	584.27	587.62	590.97	571.87
35.0	455.85	462.53	469.21	481.73	494.24	513.18	532.12	547.07	562.01	555.28
37.5	384.25	391.06	397.87	410.98	424.08	446.70	469.32	493.02	516.71	523.56
40.0	319.41	325.17	330.93	343.81	356.68	379.90	403.11	432.06	461.01	479.88
42.5	261.21	266.41	271.61	283.62	295.63	317.79	339.95	370.67	401.40	428.49
45.0	213.57	217.72	221.86	232.30	242.75	262.76	282.77	312.67	342.55	373.87
47.5	177.20	180.35	183.49	191.42	199.34	216.22	233.09	260.21	287.33	319.50
50.0	149.47	151.64	153.79	159.78	165.76	179.10	192.44	215.09	237.74	268.17
52.5	127.45	128.81	130.16	134.61	139.06	149.42	159.78	178.02	196.25	222.63
55.0	110.06	110.60	111.13	114.01	116.89	124.85	132.80	147.29	161.78	183.77
57.5	96.95	96.86	96.76	98.08	99.39	104.96	110.53	121.71	132.88	150.88
60.0	86.05	85.84	85.62	85.95	86.27	89.53	92.78	100.80	108.81	122.83
62.5	76.63	76.19	75.74	75.81	75.87	77.70	79.53	84.63	89.73	100.23
65.0	66.80	66.57	66.33	66.51	66.68	67.92	69.15	72.28	75.42	82.57
67.5	57.32	57.24	57.15	57.57	57.99	59.10	60.21	62.31	64.41	68.93
70.0	47.85	47.92	47.98	48.67	49.35	50.61	51.87	53.61	55.33	58.07
72.5	38.90	39.05	39.18	40.00	40.81	42.26	43.70	45.27	46.84	48.69
75.0	31.54	31.72	31.88	32.56	33.23	34.61	35.97	37.44	38.91	40.41
77.5	25.84	26.04	26.23	26.83	27.43	28.54	29.64	30.85	32.05	33.28
80.0	21.49	21.69	21.89	22.37	22.84	23.54	24.23	25.24	26.24	27.22
82.5	18.45	18.56	18.66	18.98	19.30	19.71	20.12	20.80	21.48	22.15
85.0	16.62	16.64	16.66	16.73	16.80	16.98	17.14	17.42	17.69	17.97
87.5	15.08	15.02	14.95	14.86	14.76	14.70	14.63	14.60	14.56	14.49
90.0	13.58	13.42	13.26	13.05	12.83	12.57	12.31	12.07	11.83	11.61
100.0	5.86	5.76	5.64	5.45	5.26	5.20	5.14	5.22	5.29	5.52
110.0	4.53	4.28	4.02	3.55	3.08	2.81	2.54	2.57	2.59	2.50
120.0	1.55	1.52	1.48	1.51	1.54	1.52	1.49	1.52	1.54	1.60
130.0	1.20	1.16	1.10	1.15	1.20	1.18	1.16	1.19	1.21	1.32
140.0	0.86	0.86	0.86	0.84	0.80	0.86	0.91	0.93	0.96	1.01
150.0	0.70	0.67	0.63	0.64	0.63	0.67	0.71	0.73	0.75	0.76
160.0	0.54	0.50	0.45	0.45	0.45	0.46	0.47	0.49	0.51	0.50
170.0	0.25	0.24	0.23	0.24	0.25	0.25	0.25	0.24	0.24	0.24
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vert. Horizontal Angles

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0.0	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47
2.5	302.89	301.99	301.08	300.21	299.33	298.74	298.13	297.67	297.21	297.25
5.0	312.67	309.75	306.82	304.30	301.78	300.07	298.35	297.33	296.32	296.54
7.5	327.00	321.20	315.41	310.33	305.24	301.74	298.24	296.68	295.12	295.69

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CANDELA TABULATION - (Cont.)

10.0	344.73	335.36	325.97	317.85	309.72	303.97	298.21	295.67	293.12	294.42
12.5	365.67	352.10	338.52	326.59	314.66	306.24	297.81	294.14	290.47	292.80
15.0	389.13	370.64	352.14	335.93	319.71	308.31	296.91	292.04	287.17	290.66
17.5	415.28	391.46	367.64	346.75	325.85	310.82	295.79	289.40	283.01	288.03
20.0	443.53	413.95	384.35	358.37	332.38	313.41	294.42	286.46	278.49	285.10
22.5	473.17	437.54	401.90	370.39	338.86	315.76	292.65	282.76	272.87	281.49
25.0	501.18	460.20	419.22	382.10	344.98	317.44	289.90	278.25	266.60	277.35
27.5	525.90	480.63	435.36	392.86	350.35	318.49	286.63	273.11	259.58	272.47
30.0	544.34	498.01	451.68	403.56	355.44	319.35	283.24	267.80	252.35	267.44
32.5	552.77	509.37	465.96	413.32	360.68	319.99	279.30	261.78	244.26	261.85
35.0	548.55	511.94	475.31	419.95	364.59	319.23	273.87	254.83	235.79	255.63
37.5	530.41	503.55	476.68	421.81	366.93	317.51	268.08	247.41	226.73	248.52
40.0	498.74	483.64	468.53	417.00	365.47	313.27	261.07	239.21	217.35	240.69
42.5	455.58	452.87	450.15	404.84	359.53	306.27	253.01	230.00	206.99	231.59
45.0	405.18	413.88	422.58	385.45	348.31	295.46	242.61	219.16	195.71	221.07
47.5	351.66	368.77	385.88	358.10	330.31	279.91	229.50	206.51	183.52	208.68
50.0	298.60	321.02	343.44	324.93	306.42	260.37	214.32	192.11	169.89	194.18
52.5	249.01	273.36	297.70	287.45	277.20	237.23	197.24	176.33	155.42	178.05
55.0	205.76	228.91	252.06	248.50	244.94	212.00	179.05	159.96	140.86	161.47
57.5	168.87	189.27	209.67	210.82	211.97	186.02	160.07	142.98	125.88	144.32
60.0	136.85	154.60	172.34	176.59	180.83	160.34	139.84	125.30	110.76	126.35
62.5	110.72	124.97	139.21	144.93	150.63	134.84	119.04	107.21	95.38	108.01
65.0	89.72	100.71	111.70	117.14	122.57	111.06	99.54	90.23	80.91	90.82
67.5	73.44	81.36	89.27	93.75	98.24	90.59	82.94	75.69	68.43	75.95
70.0	60.80	66.08	71.37	75.13	78.90	73.79	68.67	63.24	57.80	63.44
72.5	50.53	53.93	57.31	59.94	62.56	58.89	55.21	50.88	46.54	50.84
75.0	41.91	43.97	46.03	47.47	48.92	46.39	43.85	40.62	37.38	40.63
77.5	34.50	35.66	36.81	37.49	38.17	36.36	34.53	31.93	29.33	31.92
80.0	28.19	28.88	29.55	29.66	29.76	28.09	26.41	24.26	22.10	24.20
82.5	22.82	23.19	23.56	23.29	23.02	21.24	19.46	17.49	15.51	17.36
85.0	18.24	18.30	18.36	17.81	17.25	15.41	13.57	11.79	10.00	11.64
87.5	14.40	14.23	14.04	13.29	12.53	10.72	8.90	7.20	5.49	7.13
90.0	11.39	11.09	10.79	9.95	9.10	7.43	5.75	4.42	3.08	4.39
100.0	5.74	5.29	4.84	4.26	3.66	3.66	3.65	4.27	4.89	4.21
110.0	2.40	2.29	2.18	2.18	2.17	2.66	3.14	3.62	4.09	3.59
120.0	1.65	1.61	1.57	1.81	2.04	2.39	2.73	2.99	3.25	2.95
130.0	1.42	1.49	1.54	1.74	1.94	2.35	2.76	2.91	3.06	2.86
140.0	1.06	1.15	1.24	1.33	1.42	1.66	1.89	1.96	2.02	1.91
150.0	0.77	0.79	0.80	0.81	0.82	0.84	0.86	0.87	0.88	0.87
160.0	0.49	0.49	0.50	0.51	0.53	0.52	0.51	0.52	0.52	0.52
170.0	0.24	0.24	0.24	0.23	0.23	0.23	0.24	0.24	0.24	0.25
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vert. Horizontal Angles
Angles

	<u>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
0.0	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47	298.47
2.5	297.29	297.54	297.78	298.09	298.40	298.75	299.10	299.61	300.11	300.35
5.0	296.75	297.86	298.97	300.67	302.38	304.48	306.57	308.59	310.60	312.58
7.5	296.25	298.93	301.60	305.73	309.86	314.75	319.64	324.80	329.95	334.33
10.0	295.72	300.67	305.61	312.96	320.30	329.13	337.96	346.98	356.00	364.14
12.5	295.13	302.99	310.84	322.26	333.67	347.11	360.54	374.14	387.75	399.85
15.0	294.13	305.44	316.74	332.80	348.86	367.76	386.66	405.10	423.54	440.26
17.5	293.04	308.16	323.27	344.78	366.29	390.59	414.89	438.83	462.76	483.75
20.0	291.70	311.15	330.59	357.85	385.10	415.00	444.88	473.84	502.80	527.30
22.5	290.11	314.41	338.72	371.80	404.88	440.49	476.08	508.59	541.10	566.51

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CANDELA TABULATION - (Cont.)

25.0	288.10	317.17	346.23	385.54	424.84	465.28	505.71	539.45	573.18	595.47
27.5	285.36	319.48	353.59	398.60	443.60	487.56	531.51	562.91	594.30	609.77
30.0	282.52	321.59	360.66	410.67	460.67	505.23	549.78	574.76	599.74	605.77
32.5	279.44	323.47	367.51	421.06	474.61	515.29	555.97	570.83	585.68	581.02
35.0	275.46	323.97	372.48	427.30	482.11	515.12	548.13	551.12	554.11	538.92
37.5	270.30	322.66	375.01	428.42	481.82	504.29	526.76	517.49	508.22	484.80
40.0	264.02	318.59	373.17	422.23	471.29	482.20	493.10	473.36	453.63	424.99
42.5	256.20	311.39	366.58	408.49	450.40	449.64	448.88	421.79	394.70	364.59
45.0	246.42	300.42	354.40	387.03	419.65	409.10	398.54	367.58	336.62	308.08
47.5	233.83	284.58	335.32	358.62	381.92	364.03	346.14	314.75	283.37	259.06
50.0	218.47	264.43	310.39	325.07	339.75	317.44	295.13	266.57	238.01	219.39
52.5	200.67	240.48	280.28	287.84	295.40	272.10	248.80	224.83	200.86	186.46
55.0	182.07	214.60	247.12	249.36	251.60	229.78	207.96	188.19	168.42	157.05
57.5	162.75	188.37	213.99	212.35	210.70	191.41	172.11	155.86	139.60	131.70
60.0	141.93	162.47	183.01	178.28	173.54	156.84	140.14	128.05	115.95	111.45
62.5	120.64	136.32	152.01	146.09	140.16	126.78	113.38	105.49	97.59	95.72
65.0	100.73	112.02	123.31	117.66	112.00	102.21	92.40	87.93	83.46	82.97
67.5	83.46	91.08	98.68	93.93	89.18	82.58	75.97	73.91	71.84	71.64
70.0	69.08	73.97	78.86	75.03	71.20	67.04	62.88	62.22	61.55	61.04
72.5	55.14	58.82	62.51	59.62	56.72	54.33	51.94	51.60	51.25	50.31
75.0	43.86	46.35	48.83	47.10	45.36	43.95	42.53	41.97	41.42	40.43
77.5	34.51	35.98	37.45	36.70	35.95	35.08	34.22	33.58	32.94	32.15
80.0	26.30	27.60	28.90	28.63	28.36	27.87	27.38	26.81	26.25	25.69
82.5	19.22	20.64	22.07	22.20	22.32	22.09	21.86	21.40	20.93	20.70
85.0	13.28	14.91	16.53	16.95	17.36	17.31	17.25	17.15	17.04	17.06
87.5	8.76	10.39	12.02	12.65	13.26	13.49	13.72	13.90	14.08	14.31
90.0	5.69	7.23	8.77	9.45	10.12	10.48	10.84	11.17	11.50	11.95
100.0	3.53	3.50	3.48	3.77	4.06	4.63	5.20	5.37	5.53	5.58
110.0	3.09	2.62	2.14	2.10	2.06	2.19	2.31	2.46	2.60	2.60
120.0	2.64	2.35	2.04	1.84	1.64	1.57	1.50	1.49	1.48	1.52
130.0	2.65	2.36	2.06	1.86	1.66	1.53	1.41	1.37	1.33	1.30
140.0	1.80	1.62	1.44	1.32	1.18	1.17	1.15	1.08	1.01	1.00
150.0	0.87	0.87	0.87	0.85	0.82	0.80	0.78	0.79	0.80	0.76
160.0	0.52	0.52	0.51	0.52	0.52	0.51	0.50	0.49	0.48	0.48
170.0	0.25	0.25	0.25	0.24	0.23	0.23	0.23	0.23	0.23	0.24
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Vert. Angles **Horizontal Angles**

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	298.47	298.47	298.47	298.47	298.47	298.47	298.47
2.5	300.58	300.84	301.11	302.13	303.16	303.00	302.84
5.0	314.55	316.05	317.55	319.43	321.30	321.12	320.94
7.5	338.71	342.44	346.16	349.46	352.75	352.84	352.92
10.0	372.27	378.52	384.78	390.20	395.61	396.24	396.85
12.5	411.95	421.60	431.23	438.86	446.48	448.17	449.85
15.0	456.98	470.07	483.15	493.27	503.40	506.29	509.18
17.5	504.73	521.05	537.36	549.80	562.24	566.39	570.54
20.0	551.79	570.03	588.26	601.52	614.78	619.77	624.75
22.5	591.91	608.93	625.93	637.63	649.32	653.79	658.25
25.0	617.76	630.36	642.95	650.97	658.99	661.80	664.59
27.5	625.24	630.68	636.12	638.55	640.97	641.67	642.37
30.0	611.81	608.31	604.81	601.26	597.71	596.15	594.59
32.5	576.34	564.85	553.36	544.82	536.28	532.54	528.80
35.0	523.72	506.32	488.92	477.03	465.14	460.15	455.14
37.5	461.38	440.38	419.37	406.33	393.28	387.77	382.25

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CANDELA TABULATION - (Cont.)

40.0	396.34	374.32	352.30	339.49	326.68	321.71	316.74
42.5	334.49	313.58	292.67	281.75	270.83	266.26	261.68
45.0	279.53	261.94	244.35	236.35	228.34	225.02	221.69
47.5	234.75	222.00	209.24	204.41	199.57	197.46	195.34
50.0	200.76	191.84	182.90	179.54	176.16	174.33	172.49
52.5	172.05	164.86	157.67	155.27	152.87	151.46	150.05
55.0	145.67	140.62	135.56	134.53	133.49	132.50	131.50
57.5	123.80	121.33	118.86	119.04	119.23	118.70	118.17
60.0	106.94	106.27	105.59	106.35	107.11	106.81	106.50
62.5	93.84	93.89	93.93	94.43	94.92	94.60	94.28
65.0	82.47	82.29	82.10	82.06	82.00	81.34	80.67
67.5	71.44	70.54	69.65	68.93	68.21	67.18	66.14
70.0	60.52	59.00	57.48	56.20	54.92	54.05	53.18
72.5	49.36	47.79	46.22	44.90	43.58	42.85	42.12
75.0	39.43	37.98	36.54	35.68	34.82	34.29	33.76
77.5	31.35	30.30	29.24	28.72	28.19	27.80	27.40
80.0	25.13	24.43	23.72	23.52	23.31	22.93	22.55
82.5	20.47	20.25	20.03	19.87	19.70	19.47	19.24
85.0	17.07	17.15	17.23	17.27	17.29	17.23	17.16
87.5	14.54	14.83	15.10	15.29	15.48	15.41	15.34
90.0	12.39	12.79	13.17	13.37	13.57	13.60	13.62
100.0	5.62	5.71	5.79	6.05	6.31	6.24	6.17
110.0	2.60	2.64	2.67	2.68	2.69	2.58	2.46
120.0	1.55	1.59	1.63	1.64	1.64	1.54	1.44
130.0	1.25	1.21	1.16	1.13	1.09	1.06	1.02
140.0	0.99	0.95	0.91	0.89	0.87	0.83	0.79
150.0	0.72	0.71	0.68	0.70	0.72	0.69	0.67
160.0	0.47	0.47	0.46	0.47	0.48	0.48	0.48
170.0	0.24	0.24	0.24	0.24	0.24	0.23	0.22
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	147.24	N.A.	12.10
0-30	376.39	N.A.	30.90
0-40	655.42	N.A.	53.80
0-60	1046.36	N.A.	85.90
0-80	1180.45	N.A.	97.00
0-90	1199.04	N.A.	98.50
10-90	1168.02	N.A.	95.90
20-40	508.18	N.A.	41.70
20-50	741.58	N.A.	60.90
40-70	481.26	N.A.	39.50
60-80	134.09	N.A.	11.00
70-80	43.77	N.A.	3.60
80-90	18.59	N.A.	1.50
90-110	12.58	N.A.	1.00
90-120	14.86	N.A.	1.20
90-130	16.41	N.A.	1.30
90-150	18.11	N.A.	1.50
90-180	18.52	N.A.	1.50
110-180	5.94	N.A.	0.50
0-180	1217.55	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	31.02
10-20	116.22
20-30	229.15
30-40	279.03
40-50	233.41
50-60	157.54
60-70	90.32
70-80	43.77
80-90	18.59
90-100	8.48
100-110	4.10
110-120	2.28
120-130	1.55
130-140	1.09
140-150	0.61
150-160	0.29
160-170	0.10
170-180	0.01

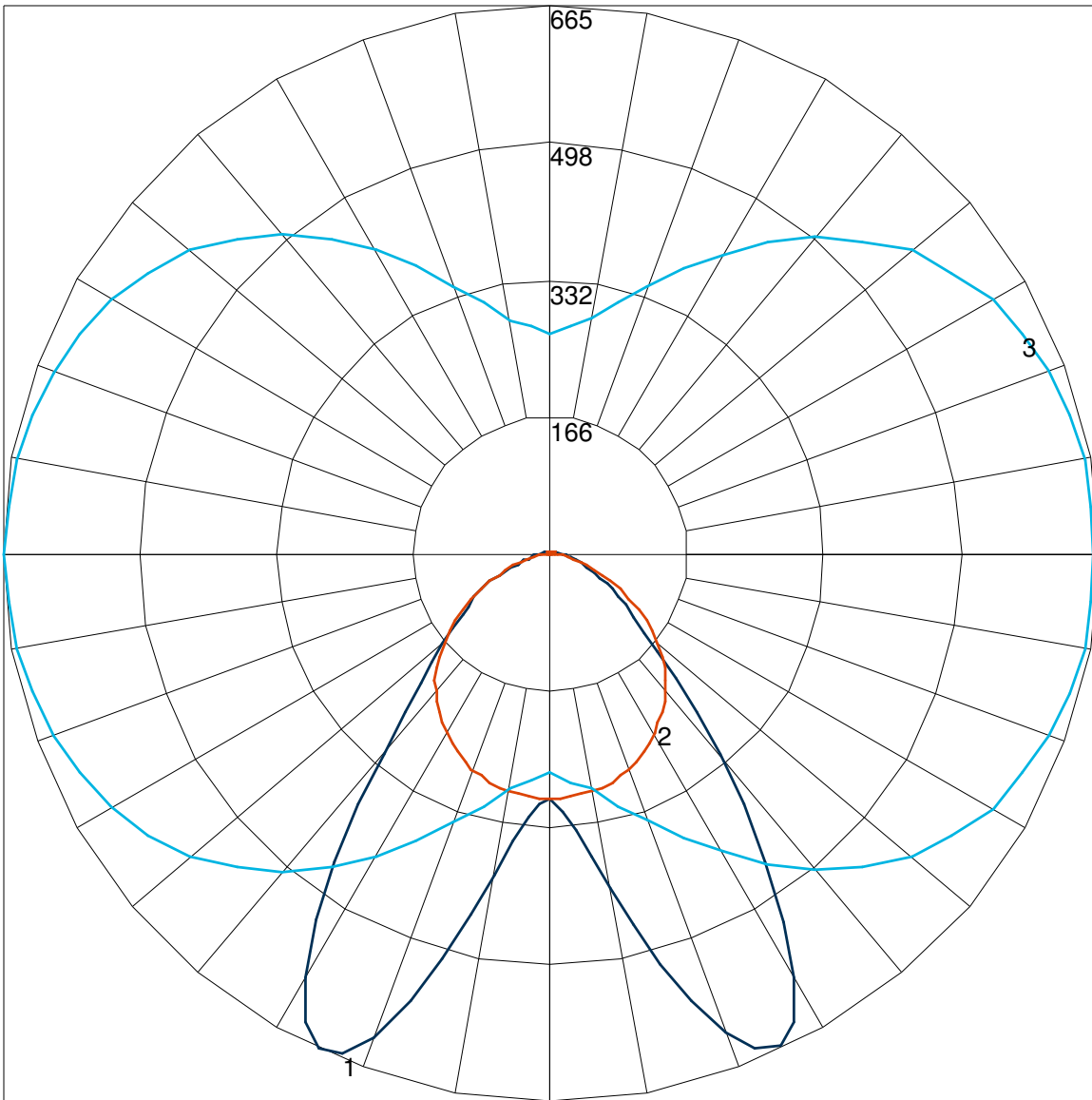
IES INDOOR REPORT
PHOTOMETRIC FILENAME : HLS CLEANING LIGHT.IES

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	110	110	110	105	105	105	101	101	101	98
1	110	105	101	98	107	103	99	96	98	96	93	94	92	90	91	89	87	85
2	101	93	87	82	98	91	86	81	88	83	79	84	80	77	81	78	75	73
3	93	83	75	70	90	81	74	69	78	72	67	75	70	66	73	68	65	63
4	85	74	66	60	83	73	65	59	70	63	58	68	62	57	65	60	56	54
5	79	67	58	52	76	65	57	52	63	56	51	61	55	50	59	54	50	48
6	73	60	52	46	71	59	51	45	57	50	45	55	49	44	54	48	44	42
7	67	55	46	40	66	54	46	40	52	45	40	51	44	39	49	43	39	37
8	63	50	42	36	61	49	41	36	48	41	36	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	41	36	32	30
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	38	33	29	27

POLAR GRAPH



Maximum Candela = 664.59 Located At Horizontal Angle = 180, Vertical Angle = 25

1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)

2 - Vertical Plane Through Horizontal Angles (90 - 270)

3 - Horizontal Cone Through Vertical Angle (25) (Through Max. Cd.)