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**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : NSH-4103W.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-1995  
[TEST] TH-1136A  
[ISSUE DATE] 2020/4/29 11:20  
[MANUFAC]  
[LUMCAT]  
[LUMINAIRE] NSH-4103W-WHTE  
[LAMPCAT]  
[LAMP]  
[\_VOLTAGE] 120.0 V  
[\_CURRENT] 0.081 A  
[\_POWERFACTOR] 0.934  
[TESTLAB] Inventfine instruments  
[\_TESTINST] GPM-1800B  
[\_TESTDIST] 8.499 m  
[\_TESTTEMPERATURE] 26  
[\_TESTHUMIDITY] 65  
[\_TESTOPERATOR] Jacky tang  
[BALLAST]  
[BALLASTCAT]

**CHARACTERISTICS**

Lumens Per Lamp	288.7 (1 lamp)
Total Lamp Lumens	288.7
Luminaire Lumens	289
Total Luminaire Efficiency	100 %
Luminaire Efficacy Rating (LER)	32
Total Luminaire Watts	9.1
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.98
Spacing Criterion (90-270)	1.12
Spacing Criterion (Diagonal)	0.94
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>45</u>	<u>90</u>	<u>135</u>	<u>180</u>	<u>225</u>	<u>270</u>	<u>315</u>	<u>360</u>
<b>0</b>	286.63	286.63	286.63	286.63	286.63	286.63	286.63	286.63	286.63
<b>1</b>	286.17	286.42	286.74	286.86	286.67	286.56	286.33	286.15	286.17
<b>2</b>	285.70	286.14	286.34	286.88	286.64	286.48	286.16	285.65	285.70
<b>3</b>	285.15	285.67	286.17	286.61	286.47	286.24	285.68	284.92	285.15
<b>4</b>	284.39	285.01	286.05	286.54	286.21	285.64	285.24	284.28	284.39
<b>5</b>	283.53	284.40	285.78	286.47	285.98	285.12	284.78	283.30	283.53
<b>6</b>	282.42	283.90	284.98	286.35	285.97	284.74	284.16	282.28	282.42
<b>7</b>	281.52	283.05	284.33	285.92	285.74	284.28	283.66	281.24	281.52
<b>8</b>	280.29	281.86	283.48	285.58	285.46	283.63	283.25	280.11	280.29
<b>9</b>	278.95	280.34	282.46	284.95	285.03	283.14	282.55	279.11	278.95
<b>10</b>	277.53	279.13	281.30	283.72	284.71	282.43	281.61	277.74	277.53
<b>11</b>	276.10	277.99	280.35	282.47	283.98	281.42	280.73	276.44	276.10
<b>12</b>	274.80	276.67	279.07	281.17	283.13	280.44	279.93	275.02	274.80
<b>13</b>	273.55	275.11	277.73	279.62	282.13	279.15	278.88	273.52	273.55
<b>14</b>	271.89	273.62	276.46	277.83	280.67	277.96	277.76	272.13	271.89
<b>15</b>	269.90	271.74	274.87	275.90	279.18	276.50	276.46	270.87	269.90
<b>16</b>	268.03	269.92	273.08	274.24	277.32	275.26	275.00	269.13	268.03
<b>17</b>	265.73	267.96	271.35	272.68	275.52	273.86	273.02	267.07	265.73
<b>18</b>	262.30	265.94	269.32	270.73	273.51	272.31	271.04	264.25	262.30
<b>19</b>	258.39	263.25	267.02	268.97	271.43	270.42	268.80	260.67	258.39
<b>20</b>	252.88	259.74	264.39	267.39	269.07	268.12	265.89	255.46	252.88
<b>21</b>	246.79	254.92	261.79	265.78	266.64	265.70	262.24	249.03	246.79
<b>22</b>	239.60	249.39	258.62	264.10	263.91	262.38	257.12	241.60	239.60
<b>23</b>	230.21	241.77	255.68	261.66	260.31	257.97	250.95	233.04	230.21
<b>24</b>	220.34	234.12	251.67	259.33	255.03	252.16	243.63	221.94	220.34
<b>25</b>	209.56	225.48	246.97	255.55	249.04	244.35	234.07	209.78	209.56
<b>26</b>	196.46	214.90	240.01	250.72	242.18	235.70	223.48	195.50	196.46
<b>27</b>	183.44	204.53	232.48	244.54	233.84	225.71	210.53	178.62	183.44
<b>28</b>	168.76	193.23	223.55	236.73	223.31	214.56	195.11	160.28	168.76
<b>29</b>	153.66	181.20	213.38	226.42	213.01	202.35	173.94	141.37	153.66
<b>30</b>	138.07	168.28	201.71	215.93	201.09	188.11	152.56	119.40	138.07
<b>31</b>	121.07	153.57	188.21	203.55	188.44	171.61	131.14	100.40	121.07
<b>32</b>	106.03	138.34	173.57	191.38	173.49	154.26	107.99	82.71	106.03
<b>33</b>	89.79	123.96	158.81	176.84	159.25	133.88	87.09	66.65	89.79
<b>34</b>	76.39	108.63	143.24	162.87	144.05	114.81	68.93	53.11	76.39
<b>35</b>	63.40	95.03	125.64	146.57	128.50	96.40	53.75	41.95	63.40
<b>36</b>	53.03	82.08	109.64	131.32	112.49	79.82	40.16	33.01	53.03
<b>37</b>	43.97	69.22	92.67	115.88	95.98	63.67	30.55	26.13	43.97
<b>38</b>	36.37	59.05	78.31	100.99	81.61	50.68	23.89	20.22	36.37
<b>39</b>	29.61	49.51	65.27	85.81	69.07	41.36	18.08	15.52	29.61
<b>40</b>	24.56	42.37	54.10	73.40	57.00	33.45	13.63	11.80	24.56
<b>41</b>	20.39	36.43	43.90	62.48	47.92	26.14	10.45	9.02	20.39
<b>42</b>	16.84	30.92	36.31	51.97	40.31	21.36	7.89	6.43	16.84
<b>43</b>	13.67	26.85	30.30	44.06	33.78	17.44	5.91	4.71	13.67
<b>44</b>	11.07	23.10	25.05	36.85	28.46	14.21	4.36	3.40	11.07
<b>45</b>	8.97	20.27	21.23	31.48	23.64	11.06	3.40	2.40	8.97
<b>46</b>	7.03	17.80	18.02	27.05	19.98	9.01	2.52	1.62	7.03
<b>47</b>	5.59	15.53	15.37	23.41	16.91	7.06	1.97	1.15	5.59
<b>48</b>	4.25	13.66	12.99	20.04	13.87	5.52	1.68	0.82	4.25
<b>49</b>	3.25	12.02	11.13	17.44	11.57	4.32	1.47	0.62	3.25
<b>50</b>	2.53	10.51	9.60	15.20	9.65	3.22	1.32	0.46	2.53
<b>51</b>	1.99	9.29	8.32	13.33	7.84	2.45	1.24	0.39	1.99
<b>52</b>	1.57	8.21	7.20	11.53	6.41	1.82	1.22	0.35	1.57
<b>53</b>	1.22	7.24	6.21	10.14	5.28	1.41	1.15	0.28	1.22

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**CANDELA TABULATION - (Cont.)**

54	0.98	6.34	5.43	8.87	4.12	1.03	1.09	0.26	0.98
55	0.78	5.63	4.78	7.83	3.28	0.70	1.01	0.27	0.78
56	0.69	5.03	4.17	6.90	2.61	0.53	0.96	0.24	0.69
57	0.57	4.48	3.74	6.07	2.00	0.41	0.89	0.22	0.57
58	0.49	3.99	3.36	5.37	1.56	0.34	0.84	0.19	0.49
59	0.45	3.54	3.02	4.71	1.27	0.26	0.76	0.14	0.45
60	0.39	3.18	2.71	4.18	0.99	0.23	0.69	0.09	0.39
61	0.32	2.74	2.44	3.77	0.80	0.16	0.66	0.08	0.32
62	0.28	2.45	2.21	3.40	0.62	0.14	0.58	0.05	0.28
63	0.23	2.16	2.04	3.03	0.49	0.08	0.51	0.04	0.23
64	0.18	1.92	1.85	2.68	0.41	0.01	0.45	0.03	0.18
65	0.08	1.72	1.66	2.41	0.34	0.03	0.32	0.00	0.08
66	0.04	1.51	1.47	2.13	0.24	0.00	0.23	0.00	0.04
67	0.00	1.32	1.35	1.86	0.18	0.00	0.20	0.00	0.00
68	0.00	1.22	1.18	1.61	0.11	0.00	0.19	0.00	0.00
69	0.00	1.05	1.05	1.43	0.04	0.00	0.08	0.00	0.00
70	0.00	0.95	0.93	1.28	0.00	0.00	0.07	0.00	0.00
71	0.00	0.85	0.85	1.16	0.00	0.00	0.04	0.00	0.00
72	0.00	0.77	0.76	1.02	0.00	0.00	0.00	0.00	0.00
73	0.00	0.69	0.66	0.93	0.00	0.00	0.00	0.00	0.00
74	0.00	0.59	0.58	0.76	0.00	0.00	0.00	0.00	0.00
75	0.00	0.51	0.47	0.69	0.00	0.00	0.00	0.00	0.00
76	0.00	0.43	0.41	0.55	0.00	0.00	0.00	0.00	0.00
77	0.00	0.34	0.36	0.46	0.00	0.00	0.00	0.00	0.00
78	0.00	0.30	0.28	0.39	0.00	0.00	0.00	0.00	0.00
79	0.00	0.22	0.24	0.34	0.00	0.00	0.00	0.00	0.00
80	0.00	0.16	0.16	0.23	0.00	0.00	0.00	0.00	0.00
81	0.00	0.07	0.09	0.20	0.00	0.00	0.00	0.00	0.00
82	0.00	0.03	0.04	0.11	0.00	0.00	0.00	0.00	0.00
83	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
84	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
101	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
106	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
109	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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**CANDELA TABULATION - (Cont.)**

110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
111	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
114	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
116	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00
117	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.05	0.00
118	0.00	0.01	0.00	0.00	0.00	0.00	0.11	0.05	0.00
119	0.01	0.03	0.00	0.00	0.00	0.00	0.03	0.09	0.01
120	0.05	0.07	0.00	0.00	0.00	0.00	0.14	0.11	0.05
121	0.08	0.12	0.00	0.00	0.00	0.01	0.14	0.16	0.08
122	0.11	0.14	0.04	0.00	0.00	0.04	0.16	0.19	0.11
123	0.14	0.19	0.09	0.04	0.00	0.07	0.15	0.24	0.14
124	0.18	0.22	0.14	0.08	0.00	0.08	0.20	0.27	0.18
125	0.24	0.24	0.19	0.11	0.00	0.11	0.26	0.30	0.24
126	0.26	0.31	0.22	0.18	0.00	0.14	0.31	0.31	0.26
127	0.32	0.35	0.27	0.19	0.00	0.18	0.32	0.34	0.32
128	0.36	0.38	0.30	0.23	0.00	0.23	0.35	0.34	0.36
129	0.39	0.42	0.35	0.28	0.00	0.22	0.39	0.38	0.39
130	0.45	0.50	0.38	0.34	0.00	0.26	0.45	0.43	0.45
131	0.51	0.55	0.42	0.35	0.01	0.30	0.45	0.47	0.51
132	0.53	0.57	0.46	0.43	0.05	0.31	0.49	0.50	0.53
133	0.55	0.61	0.54	0.46	0.08	0.35	0.51	0.54	0.55
134	0.59	0.65	0.55	0.54	0.12	0.35	0.57	0.59	0.59
135	0.66	0.69	0.61	0.55	0.15	0.45	0.57	0.64	0.66
136	0.72	0.70	0.65	0.61	0.14	0.42	0.64	0.69	0.72
137	0.73	0.74	0.66	0.65	0.20	0.50	0.68	0.74	0.73
138	0.78	0.78	0.73	0.69	0.27	0.54	0.70	0.76	0.78
139	0.83	0.81	0.77	0.69	0.27	0.57	0.76	0.76	0.83
140	0.88	0.85	0.78	0.76	0.34	0.61	0.78	0.82	0.88
141	0.93	0.88	0.81	0.74	0.35	0.58	0.80	0.88	0.93
142	0.95	0.91	0.82	0.82	0.39	0.66	0.82	0.90	0.95
143	0.94	0.93	0.87	0.86	0.43	0.70	0.87	0.92	0.94
144	0.96	0.97	0.92	0.88	0.47	0.70	0.91	0.96	0.96
145	1.02	1.03	0.95	0.93	0.51	0.76	0.95	0.96	1.02
146	1.03	1.03	1.00	0.96	0.57	0.78	0.97	1.04	1.03
147	1.07	1.07	1.04	1.02	0.57	0.81	1.04	1.04	1.07
148	1.10	1.09	1.08	1.06	0.64	0.87	1.07	1.06	1.10
149	1.13	1.09	1.08	1.09	0.65	0.89	1.09	1.10	1.13
150	1.15	1.16	1.12	1.12	0.72	0.92	1.09	1.16	1.15
151	1.19	1.20	1.16	1.13	0.73	0.95	1.16	1.19	1.19
152	1.23	1.20	1.18	1.20	0.76	1.00	1.19	1.21	1.23
153	1.27	1.23	1.23	1.24	0.80	1.03	1.20	1.21	1.27
154	1.29	1.30	1.26	1.28	0.81	1.07	1.23	1.25	1.29
155	1.30	1.30	1.27	1.28	0.83	1.09	1.24	1.29	1.30
156	1.33	1.34	1.28	1.32	0.90	1.15	1.24	1.28	1.33
157	1.36	1.32	1.32	1.36	0.90	1.16	1.31	1.35	1.36
158	1.37	1.22	1.34	1.38	0.93	1.08	1.35	1.36	1.37
159	1.40	1.39	1.37	1.44	0.94	1.19	1.37	1.42	1.40
160	1.42	1.39	1.41	1.39	0.98	1.26	1.37	1.43	1.42
161	1.34	1.43	1.42	1.46	1.00	1.27	1.42	1.47	1.34
162	1.44	1.47	1.45	1.46	1.00	1.30	1.43	1.51	1.44
163	1.49	1.46	1.45	1.52	1.07	1.31	1.47	1.56	1.49
164	1.48	1.49	1.46	1.52	1.13	1.37	1.49	1.59	1.48
165	1.53	1.51	1.51	1.52	1.11	1.41	1.54	1.65	1.53

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**CANDELA TABULATION - (Cont.)**

<b>166</b>	1.53	1.58	1.53	1.58	1.15	1.43	1.55	1.66	1.53
<b>167</b>	1.59	1.57	1.54	1.63	1.21	1.47	1.66	1.70	1.59
<b>168</b>	1.61	1.58	1.61	1.65	1.23	1.47	1.71	1.73	1.61
<b>169</b>	1.63	1.62	1.63	1.65	1.26	1.53	1.71	1.78	1.63
<b>170</b>	1.64	1.65	1.63	1.67	1.29	1.57	1.74	1.79	1.64
<b>171</b>	1.61	1.64	1.65	1.74	1.34	1.61	1.77	1.83	1.61
<b>172</b>	1.64	1.68	1.70	1.75	1.30	1.66	1.77	1.85	1.64
<b>173</b>	1.68	1.72	1.70	1.77	1.37	1.69	1.82	1.86	1.68
<b>174</b>	1.68	1.73	1.76	1.89	1.41	1.72	1.82	1.85	1.68
<b>175</b>	1.71	1.76	1.80	1.79	1.44	1.74	1.86	1.89	1.71
<b>176</b>	1.75	1.78	1.77	1.83	1.48	1.74	1.85	1.86	1.75
<b>177</b>	1.73	1.80	1.85	1.83	1.49	1.78	1.88	1.89	1.73
<b>178</b>	1.75	1.81	1.82	1.75	1.49	1.80	1.91	1.88	1.75
<b>179</b>	1.76	1.82	1.86	1.88	1.50	1.78	1.88	1.85	1.76
<b>180</b>	1.73	1.84	1.88	1.86	1.50	1.77	1.85	1.86	1.73

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : NSH-4103W.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	104.40	36.20	36.20
0-30	208.97	72.40	72.40
0-40	268.88	93.10	93.20
0-60	285.29	98.80	98.80
0-80	286.38	99.20	99.20
0-90	286.39	99.20	99.20
10-90	259.31	89.80	89.80
20-40	164.48	57.00	57.00
20-50	177.89	61.60	61.60
40-70	17.26	6.00	6.00
60-80	1.09	0.40	0.40
70-80	0.23	0.10	0.10
80-90	0.01	0.00	0.00
90-110	0.00	0.00	0.00
90-120	0.01	0.00	0.00
90-130	0.17	0.10	0.10
90-150	1.13	0.40	0.40
90-180	2.26	0.80	0.80
110-180	2.26	0.80	0.80
0-180	288.65	100.00	100.00

Total Luminaire Efficiency = 100.00%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	27.08
10-20	77.32
20-30	104.57
30-40	59.91
40-50	13.41
50-60	2.99
60-70	0.86
70-80	0.23
80-90	0.01
90-100	0.00
100-110	0.00
110-120	0.01
120-130	0.16
130-140	0.41
140-150	0.55
150-160	0.55
160-170	0.41
170-180	0.16

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : NSH-4103W.IES**

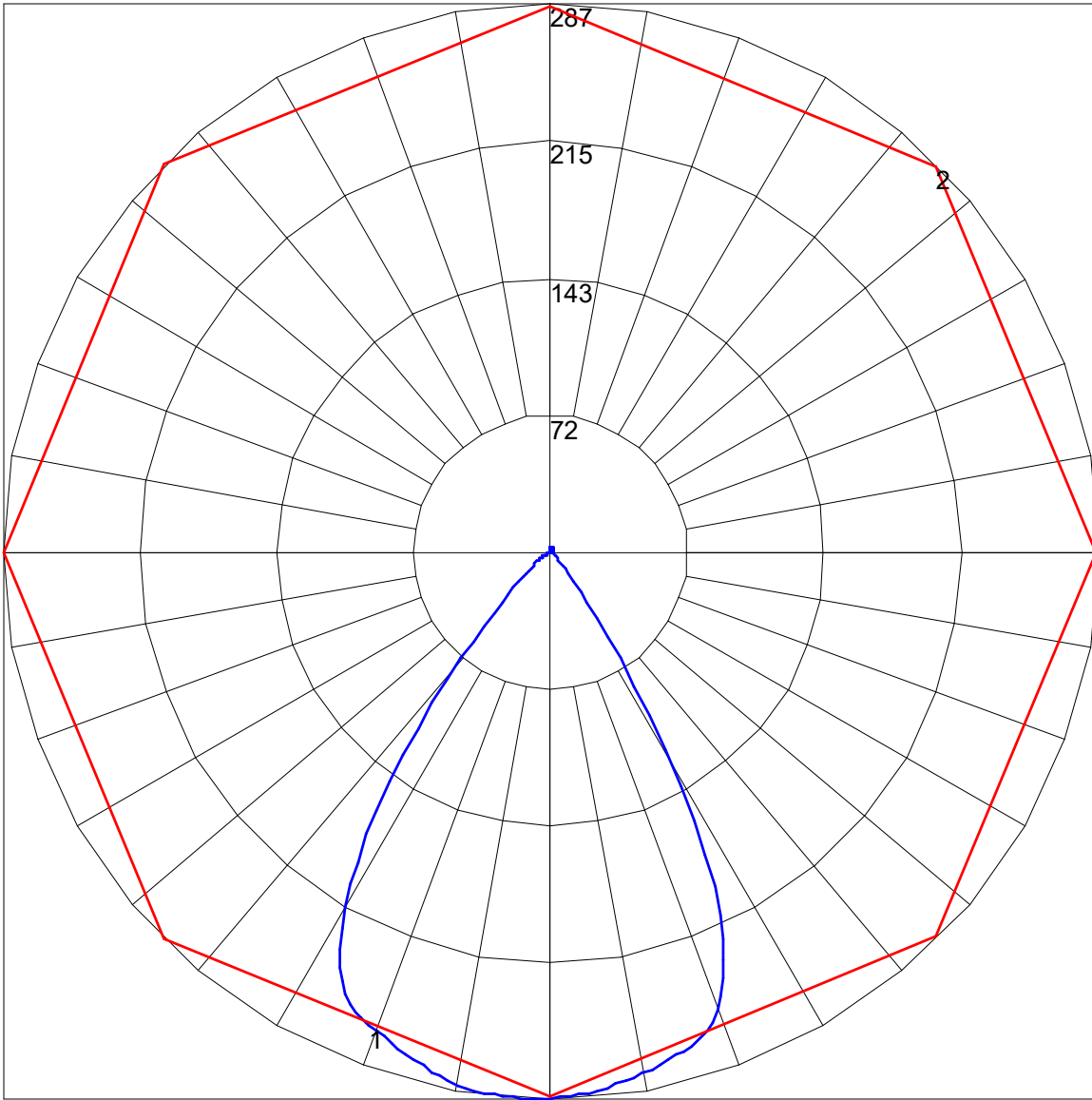
**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	113	111	108	106	111	108	106	104	104	102	101	100	99	98	97	96	95	93
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86
3	102	96	91	87	100	94	90	86	92	88	85	89	86	83	87	84	82	80
4	97	90	84	80	95	88	83	79	86	82	78	84	80	77	82	79	76	75
5	92	84	78	74	90	83	77	73	81	76	73	79	75	72	78	74	71	70
6	87	79	73	68	86	78	72	68	76	71	67	75	70	67	73	69	66	65
7	83	74	68	64	82	73	67	63	72	67	63	70	66	63	69	65	62	61
8	79	69	63	59	78	69	63	59	68	63	59	67	62	59	66	61	58	57
9	75	65	60	56	74	65	59	55	64	59	55	63	58	55	62	58	55	53
10	72	62	56	52	71	61	56	52	61	55	52	60	55	52	59	55	52	50



POLAR GRAPH



Maximum Candela = 286.88 Located At Horizontal Angle = 135, Vertical Angle = 2  
# 1 - Vertical Plane Through Horizontal Angles (135 - 315) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (2) (Through Max. Cd.)