

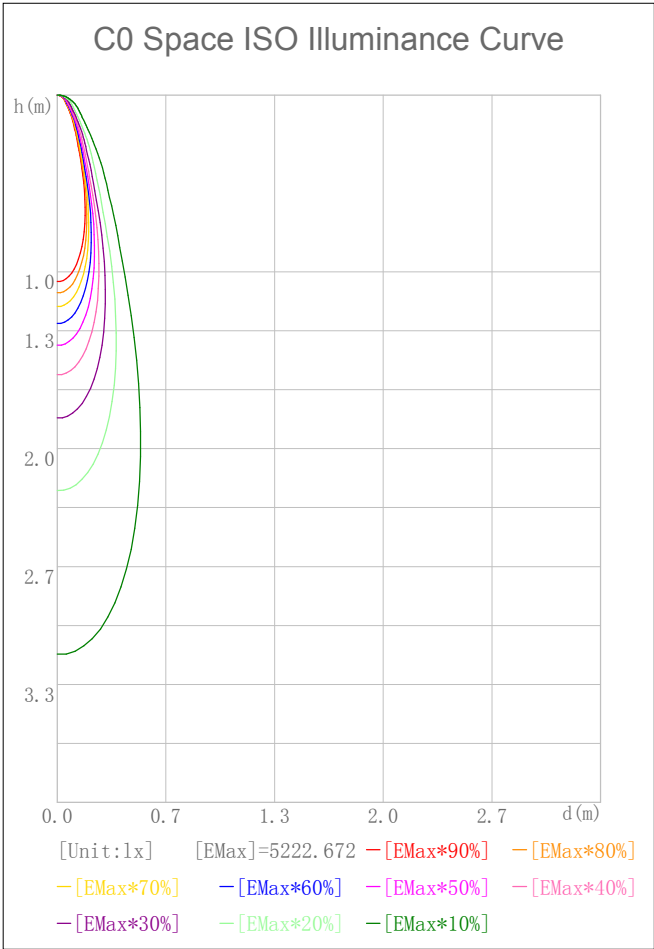
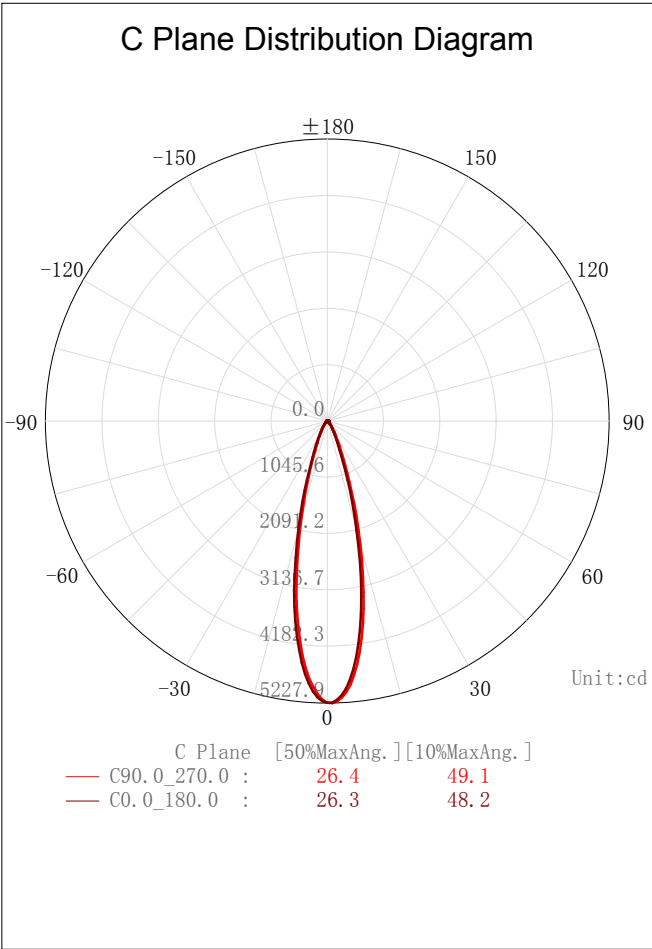
Indoor Luminaire Photometric Data

Description Information

|   |                         |                    |                       |
|---|-------------------------|--------------------|-----------------------|
| Luminary Name: TR04-20-XX-01 2700K RA90 24D     |                         | Lum. Catalog:      | Test ID: QIU MEI      |
| Lamp Name:                                      |                         | Lamp Catalog: LED  | Test Date: 2019/09/05 |
| Manufacture: Shenzhen Norming Lighting Co., Ltd |                         | Shld.Ang(°):       | Test Machine:GON-2000 |
| Test Lab: Quality Department                    |                         | Frequency(Hz):     | Lamp CCT(K): Ra:      |
| Lum.Size(W*L*H):0.060m*0.060m*0.250m            |                         | Lum.Area(m2):0.019 | Lum.W(kg): 0.000      |
| Test System: C, γ                               | Test Step: C=90.0 γ=1.0 | Temp.(°C): 25      | Humidity(%): 50.0     |

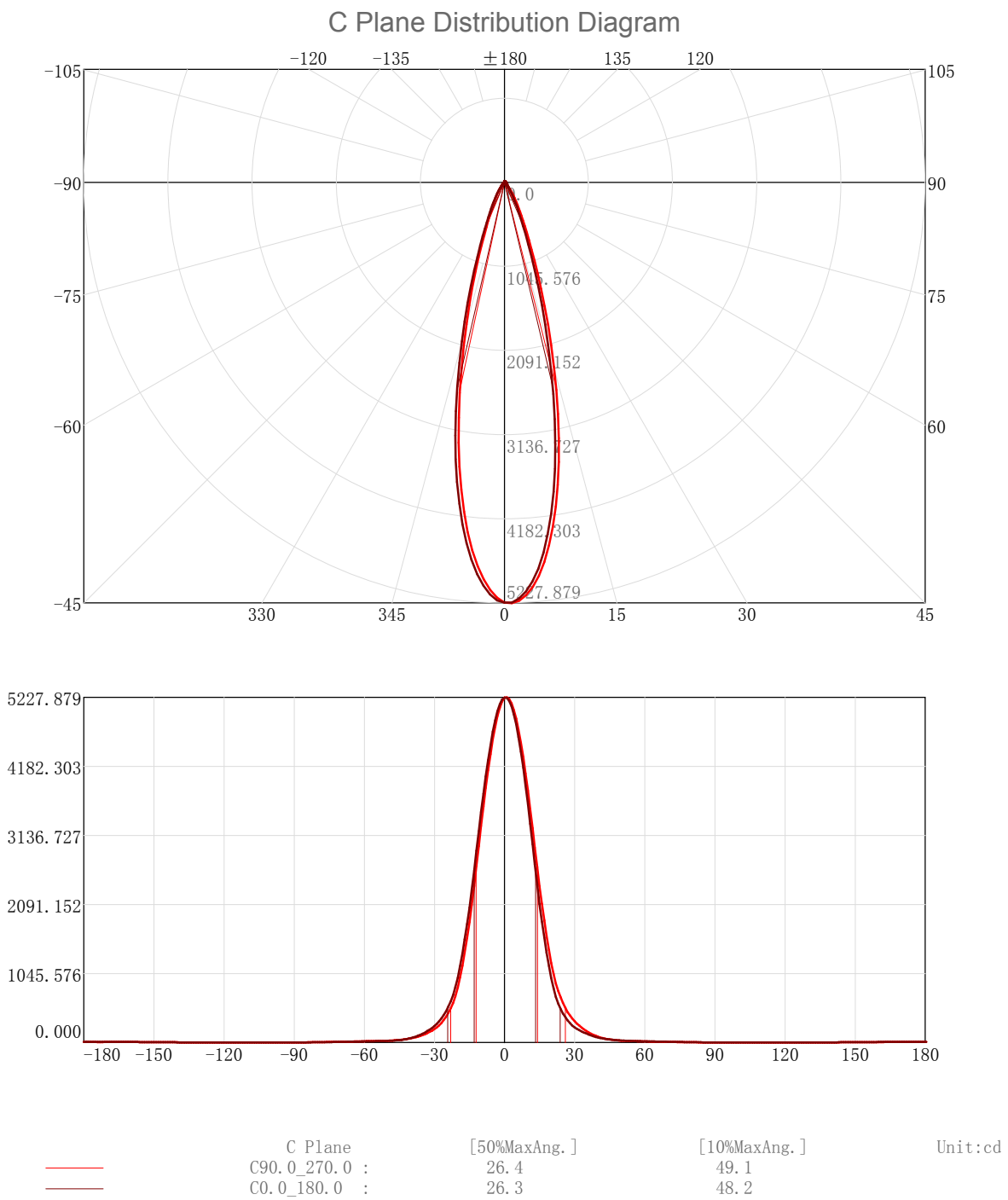
Character Parameter

| Lamp Speciality Parameter  |                                | Luminaire Speciality Parameter         |  |
|--|--------------------------------|--|--|
| Rated Flux(lm): 1432.630   | Luminary Flux(lm): 1432.631    | Field Angle(10%Imax): 49.1(°)          |  |
| Rated Power(W):  | Luminary Efficiency: 100.00%   | Down Lumens&Percent: 1405.137lm 98.08% |  |
| Rated Voltage(V):  | Luminary EER(lm/W): 75.322     | Up Lumens&Percent: 27.494lm 1.92%      |  |
| Tested Power(W): 19.020  | Max.Candela(cd): 5227.879      | S/MH: C0_a180=0.443 C90_270=0.444      |  |
| Lamps' Inside: 1   | Max Cand@Ang.(°): C=90.0 γ=1.0 | CIE Type: Semi-Direct                  |  |
| Tested Electrics(V, A, pf):239.7, 0.081, 0.975Beam Angle(50%Imax): 26.4(°) |                                | ErP Φuse(90°): 1359.463lm              |  |
| Lamp Size(W*L*H):0.060m*0.060m*0.250m                                      |                                | IRF(%): 799.323                        |  |



2D Plane Light Intensity Distribution Curve

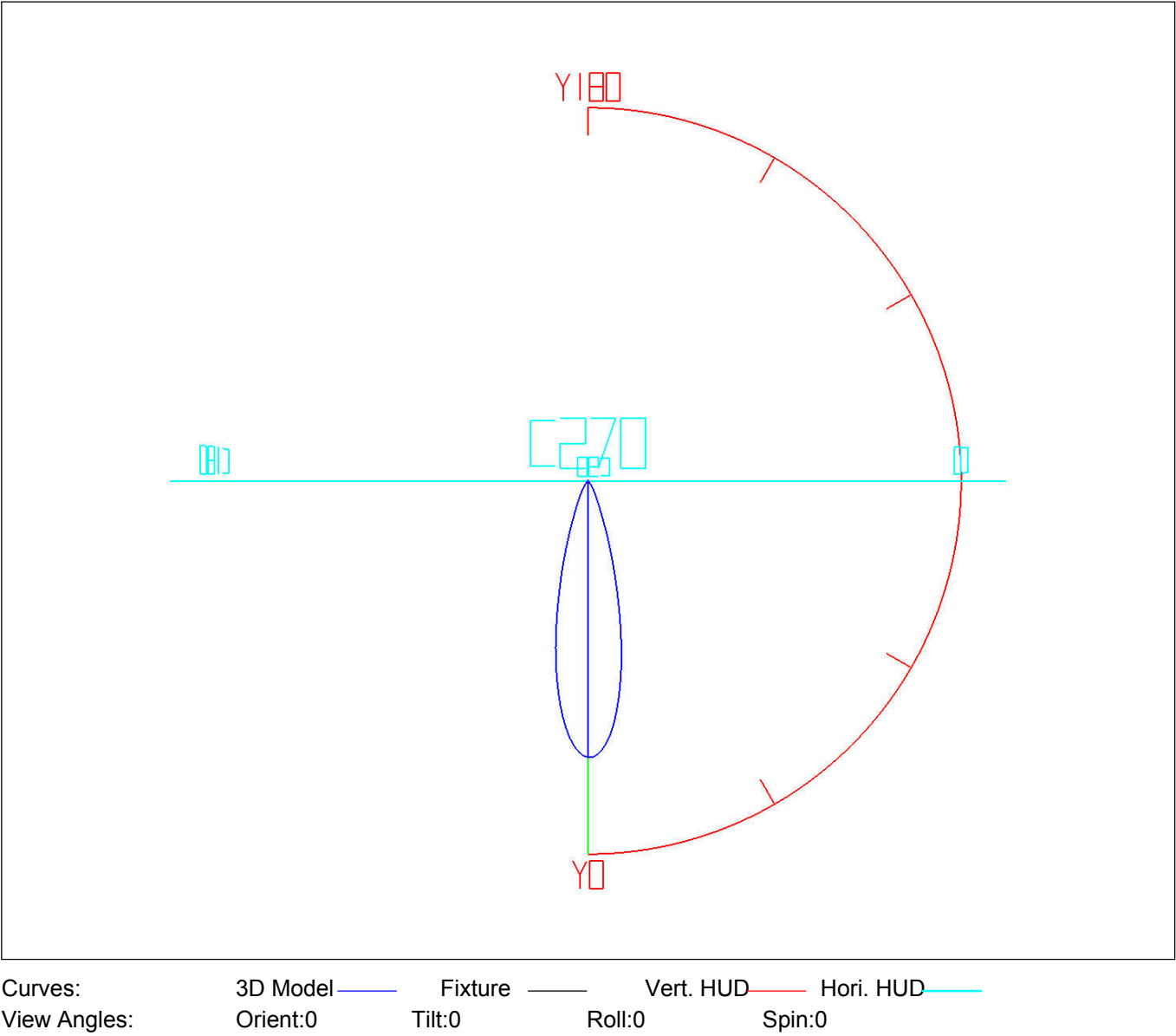
|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |



3D Light Intensity Distribution Modal

|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |

3D Light Intensity Distribution Modal



## Photometric Filename:TR04-20-XX-01 2700K RA90 24D.IES

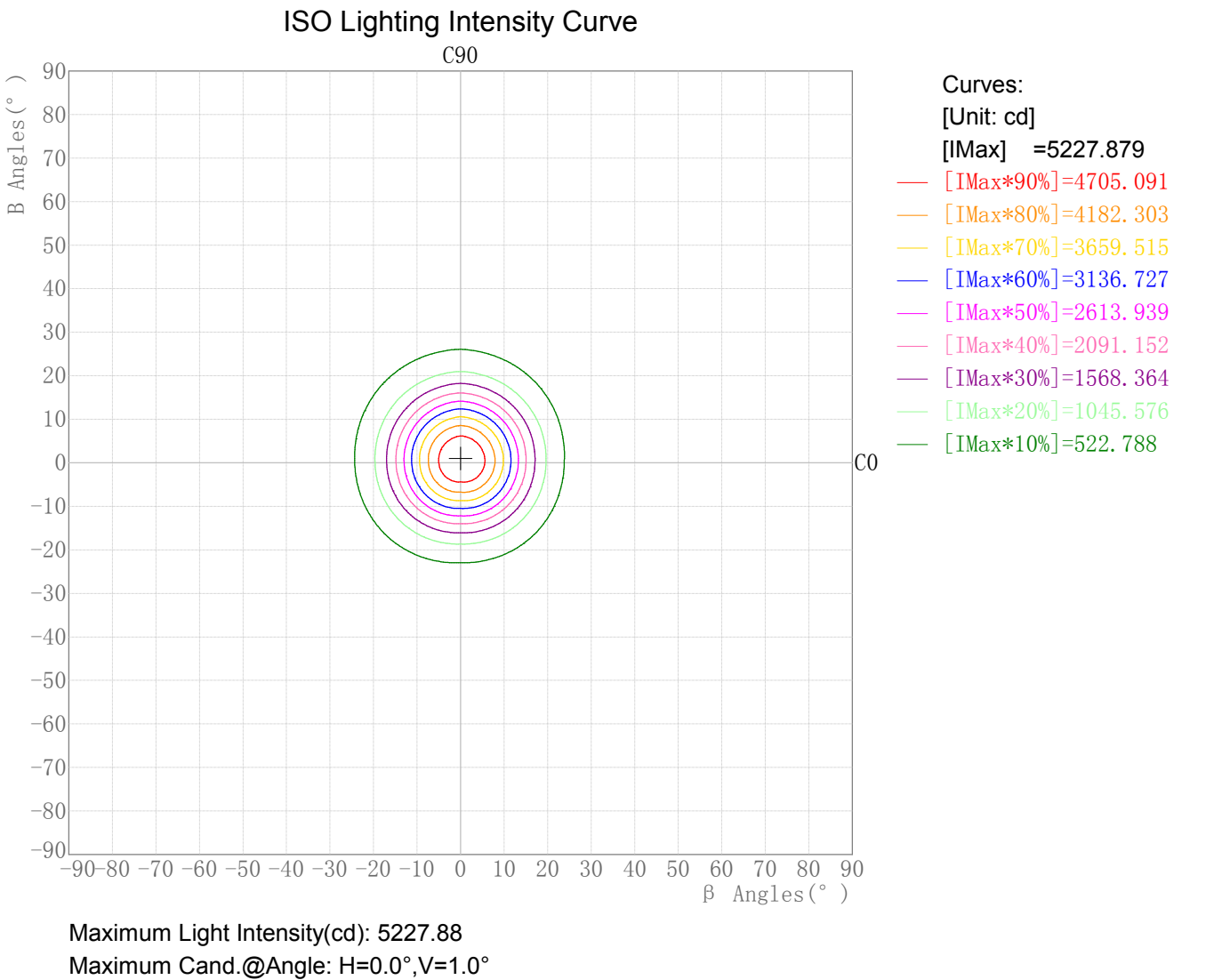
| Zone(γ)   | Zone Flux<br>(1m) | Sums Flux<br>(1m) | Zone%Lamp | Sums%Lamp | Zone(γ)   | Zone Flux<br>(1m) | Sums Flux<br>(1m) | Zone%Lamp | Sums%Lamp |
|-----------|-------------------|-------------------|-----------|-----------|-----------|-------------------|-------------------|-----------|-----------|
| 0.0-1.0   | 4.99              | 4.99              | 0.35      | 0.35      | 47.0-48.0 | 2.95              | 1343.17           | 0.21      | 93.76     |
| 1.0-2.0   | 14.85             | 19.83             | 1.04      | 1.38      | 48.0-49.0 | 2.77              | 1345.94           | 0.19      | 93.95     |
| 2.0-3.0   | 24.37             | 44.20             | 1.70      | 3.09      | 49.0-50.0 | 2.64              | 1348.58           | 0.18      | 94.13     |
| 3.0-4.0   | 33.35             | 77.55             | 2.33      | 5.41      | 50.0-51.0 | 2.54              | 1351.12           | 0.18      | 94.31     |
| 4.0-5.0   | 41.61             | 119.17            | 2.90      | 8.32      | 51.0-52.0 | 2.46              | 1353.58           | 0.17      | 94.48     |
| 5.0-6.0   | 48.96             | 168.13            | 3.42      | 11.74     | 52.0-53.0 | 2.39              | 1355.97           | 0.17      | 94.65     |
| 6.0-7.0   | 55.23             | 223.36            | 3.86      | 15.59     | 53.0-54.0 | 2.32              | 1358.29           | 0.16      | 94.81     |
| 7.0-8.0   | 60.33             | 283.69            | 4.21      | 19.80     | 54.0-55.0 | 2.26              | 1360.54           | 0.16      | 94.97     |
| 8.0-9.0   | 64.19             | 347.88            | 4.48      | 24.28     | 55.0-56.0 | 2.21              | 1362.75           | 0.15      | 95.12     |
| 9.0-10.0  | 66.78             | 414.67            | 4.66      | 28.94     | 56.0-57.0 | 2.15              | 1364.90           | 0.15      | 95.27     |
| 10.0-11.0 | 68.05             | 482.71            | 4.75      | 33.69     | 57.0-58.0 | 2.10              | 1367.01           | 0.15      | 95.42     |
| 11.0-12.0 | 67.98             | 550.69            | 4.74      | 38.44     | 58.0-59.0 | 2.06              | 1369.07           | 0.14      | 95.56     |
| 12.0-13.0 | 66.65             | 617.34            | 4.65      | 43.09     | 59.0-60.0 | 2.01              | 1371.07           | 0.14      | 95.70     |
| 13.0-14.0 | 64.24             | 681.58            | 4.48      | 47.58     | 60.0-61.0 | 1.96              | 1373.03           | 0.14      | 95.84     |
| 14.0-15.0 | 61.07             | 742.64            | 4.26      | 51.84     | 61.0-62.0 | 1.90              | 1374.93           | 0.13      | 95.97     |
| 15.0-16.0 | 57.38             | 800.03            | 4.01      | 55.84     | 62.0-63.0 | 1.85              | 1376.78           | 0.13      | 96.10     |
| 16.0-17.0 | 53.31             | 853.34            | 3.72      | 59.56     | 63.0-64.0 | 1.79              | 1378.57           | 0.12      | 96.23     |
| 17.0-18.0 | 48.94             | 902.28            | 3.42      | 62.98     | 64.0-65.0 | 1.73              | 1380.29           | 0.12      | 96.35     |
| 18.0-19.0 | 44.38             | 946.65            | 3.10      | 66.08     | 65.0-66.0 | 1.66              | 1381.96           | 0.12      | 96.46     |
| 19.0-20.0 | 39.86             | 986.51            | 2.78      | 68.86     | 66.0-67.0 | 1.60              | 1383.55           | 0.11      | 96.57     |
| 20.0-21.0 | 35.60             | 1022.11           | 2.48      | 71.34     | 67.0-68.0 | 1.53              | 1385.09           | 0.11      | 96.68     |
| 21.0-22.0 | 31.77             | 1053.87           | 2.22      | 73.56     | 68.0-69.0 | 1.47              | 1386.56           | 0.10      | 96.78     |
| 22.0-23.0 | 28.49             | 1082.37           | 1.99      | 75.55     | 69.0-70.0 | 1.41              | 1387.97           | 0.10      | 96.88     |
| 23.0-24.0 | 25.72             | 1108.09           | 1.80      | 77.35     | 70.0-71.0 | 1.35              | 1389.32           | 0.09      | 96.98     |
| 24.0-25.0 | 23.34             | 1131.42           | 1.63      | 78.98     | 71.0-72.0 | 1.30              | 1390.62           | 0.09      | 97.07     |
| 25.0-26.0 | 21.22             | 1152.65           | 1.48      | 80.46     | 72.0-73.0 | 1.24              | 1391.86           | 0.09      | 97.15     |
| 26.0-27.0 | 19.25             | 1171.89           | 1.34      | 81.80     | 73.0-74.0 | 1.18              | 1393.04           | 0.08      | 97.24     |
| 27.0-28.0 | 17.49             | 1189.38           | 1.22      | 83.02     | 74.0-75.0 | 1.13              | 1394.16           | 0.08      | 97.31     |
| 28.0-29.0 | 15.96             | 1205.35           | 1.11      | 84.14     | 75.0-76.0 | 1.07              | 1395.24           | 0.07      | 97.39     |
| 29.0-30.0 | 14.61             | 1219.96           | 1.02      | 85.16     | 76.0-77.0 | 1.02              | 1396.26           | 0.07      | 97.46     |
| 30.0-31.0 | 13.40             | 1233.36           | 0.94      | 86.09     | 77.0-78.0 | 0.97              | 1397.22           | 0.07      | 97.53     |
| 31.0-32.0 | 12.31             | 1245.67           | 0.86      | 86.95     | 78.0-79.0 | 0.91              | 1398.14           | 0.06      | 97.59     |
| 32.0-33.0 | 11.28             | 1256.95           | 0.79      | 87.74     | 79.0-80.0 | 0.86              | 1399.00           | 0.06      | 97.65     |
| 33.0-34.0 | 10.30             | 1267.24           | 0.72      | 88.46     | 80.0-81.0 | 0.82              | 1399.82           | 0.06      | 97.71     |
| 34.0-35.0 | 9.38              | 1276.62           | 0.65      | 89.11     | 81.0-82.0 | 0.77              | 1400.59           | 0.05      | 97.76     |
| 35.0-36.0 | 8.52              | 1285.14           | 0.59      | 89.71     | 82.0-83.0 | 0.72              | 1401.             |           |           |

Zonal Flux Tabulation - (Cont.)

| Zone ( γ )    | Zone Flux<br>(lm) | Sums Flux<br>(lm) | Zone%Lamp | Sums%Lamp | Zone ( γ )    | Zone Flux<br>(lm) | Sums Flux<br>(lm) | Zone%Lamp | Sums%Lamp |
|---------------|-------------------|-------------------|-----------|-----------|---------------|-------------------|-------------------|-----------|-----------|
| 94. 0-95. 0   | 0. 36             | 1407. 08          | 0. 03     | 98. 22    | 141. 0-142. 0 | 0. 42             | 1420. 41          | 0. 03     | 99. 15    |
| 95. 0-96. 0   | 0. 35             | 1407. 43          | 0. 02     | 98. 24    | 142. 0-143. 0 | 0. 44             | 1420. 85          | 0. 03     | 99. 18    |
| 96. 0-97. 0   | 0. 34             | 1407. 78          | 0. 02     | 98. 27    | 143. 0-144. 0 | 0. 45             | 1421. 30          | 0. 03     | 99. 21    |
| 97. 0-98. 0   | 0. 33             | 1408. 11          | 0. 02     | 98. 29    | 144. 0-145. 0 | 0. 46             | 1421. 75          | 0. 03     | 99. 24    |
| 98. 0-99. 0   | 0. 33             | 1408. 43          | 0. 02     | 98. 31    | 145. 0-146. 0 | 0. 46             | 1422. 22          | 0. 03     | 99. 27    |
| 99. 0-100. 0  | 0. 31             | 1408. 75          | 0. 02     | 98. 33    | 146. 0-147. 0 | 0. 47             | 1422. 69          | 0. 03     | 99. 31    |
| 100. 0-101. 0 | 0. 31             | 1409. 06          | 0. 02     | 98. 35    | 147. 0-148. 0 | 0. 48             | 1423. 16          | 0. 03     | 99. 34    |
| 101. 0-102. 0 | 0. 30             | 1409. 36          | 0. 02     | 98. 38    | 148. 0-149. 0 | 0. 48             | 1423. 64          | 0. 03     | 99. 37    |
| 102. 0-103. 0 | 0. 29             | 1409. 65          | 0. 02     | 98. 40    | 149. 0-150. 0 | 0. 48             | 1424. 12          | 0. 03     | 99. 41    |
| 103. 0-104. 0 | 0. 29             | 1409. 94          | 0. 02     | 98. 42    | 150. 0-151. 0 | 0. 48             | 1424. 60          | 0. 03     | 99. 44    |
| 104. 0-105. 0 | 0. 28             | 1410. 22          | 0. 02     | 98. 44    | 151. 0-152. 0 | 0. 48             | 1425. 08          | 0. 03     | 99. 47    |
| 105. 0-106. 0 | 0. 28             | 1410. 49          | 0. 02     | 98. 45    | 152. 0-153. 0 | 0. 47             | 1425. 55          | 0. 03     | 99. 51    |
| 106. 0-107. 0 | 0. 27             | 1410. 76          | 0. 02     | 98. 47    | 153. 0-154. 0 | 0. 47             | 1426. 02          | 0. 03     | 99. 54    |
| 107. 0-108. 0 | 0. 27             | 1411. 03          | 0. 02     | 98. 49    | 154. 0-155. 0 | 0. 46             | 1426. 48          | 0. 03     | 99. 57    |
| 108. 0-109. 0 | 0. 26             | 1411. 29          | 0. 02     | 98. 51    | 155. 0-156. 0 | 0. 45             | 1426. 93          | 0. 03     | 99. 60    |
| 109. 0-110. 0 | 0. 25             | 1411. 54          | 0. 02     | 98. 53    | 156. 0-157. 0 | 0. 44             | 1427. 37          | 0. 03     | 99. 63    |
| 110. 0-111. 0 | 0. 25             | 1411. 79          | 0. 02     | 98. 55    | 157. 0-158. 0 | 0. 43             | 1427. 80          | 0. 03     | 99. 66    |
| 111. 0-112. 0 | 0. 25             | 1412. 04          | 0. 02     | 98. 56    | 158. 0-159. 0 | 0. 41             | 1428. 21          | 0. 03     | 99. 69    |
| 112. 0-113. 0 | 0. 24             | 1412. 28          | 0. 02     | 98. 58    | 159. 0-160. 0 | 0. 40             | 1428. 61          | 0. 03     | 99. 72    |
| 113. 0-114. 0 | 0. 24             | 1412. 52          | 0. 02     | 98. 60    | 160. 0-161. 0 | 0. 38             | 1429. 00          | 0. 03     | 99. 75    |
| 114. 0-115. 0 | 0. 24             | 1412. 75          | 0. 02     | 98. 61    | 161. 0-162. 0 | 0. 37             | 1429. 36          | 0. 03     | 99. 77    |
| 115. 0-116. 0 | 0. 23             | 1412. 99          | 0. 02     | 98. 63    | 162. 0-163. 0 | 0. 35             | 1429. 71          | 0. 02     | 99. 80    |
| 116. 0-117. 0 | 0. 23             | 1413. 22          | 0. 02     | 98. 64    | 163. 0-164. 0 | 0. 33             | 1430. 05          | 0. 02     | 99. 82    |
| 117. 0-118. 0 | 0. 22             | 1413. 44          | 0. 02     | 98. 66    | 164. 0-165. 0 | 0. 31             | 1430. 36          | 0. 02     | 99. 84    |
| 118. 0-119. 0 | 0. 23             | 1413. 66          | 0. 02     | 98. 68    | 165. 0-166. 0 | 0. 29             | 1430. 65          | 0. 02     | 99. 86    |
| 119. 0-120. 0 | 0. 22             | 1413. 89          | 0. 02     | 98. 69    | 166. 0-167. 0 | 0. 27             | 1430. 93          | 0. 02     | 99. 88    |
| 120. 0-121. 0 | 0. 22             | 1414. 11          | 0. 02     | 98. 71    | 167. 0-168. 0 | 0. 25             | 1431. 18          | 0. 02     | 99. 90    |
| 121. 0-122. 0 | 0. 22             | 1414. 34          | 0. 02     | 98. 72    | 168. 0-169. 0 | 0. 23             | 1431. 41          | 0. 02     | 99. 92    |
| 122. 0-123. 0 | 0. 22             | 1414. 56          | 0. 02     | 98. 74    | 169. 0-170. 0 | 0. 21             | 1431. 63          | 0. 01     | 99. 93    |
| 123. 0-124. 0 | 0. 23             | 1414. 79          | 0. 02     | 98. 75    | 170. 0-171. 0 | 0. 19             | 1431. 82          | 0. 01     | 99. 94    |
| 124. 0-125. 0 | 0. 23             | 1415. 02          | 0. 02     | 98. 77    | 171. 0-172. 0 | 0. 17             | 1431. 99          | 0. 01     | 99. 96    |
| 125. 0-126. 0 | 0. 23             | 1415. 25          | 0. 02     | 98. 79    | 172. 0-173. 0 | 0. 15             | 1432. 14          | 0. 01     | 99. 97    |
| 126. 0-127. 0 | 0. 24             | 1415. 49          | 0. 02     | 98. 80    | 173. 0-174. 0 | 0. 13             | 1432. 27          | 0. 01     | 99. 97    |
| 127. 0-128. 0 | 0. 25             | 1415. 74          | 0. 02     | 98. 82    | 174. 0-175. 0 | 0. 11             | 1432. 38          | 0. 01     | 99. 98    |
| 128. 0-129. 0 | 0. 26             | 1415. 99          | 0. 02     | 98. 84    | 175. 0-176. 0 | 0. 09             | 1432. 47          | 0. 01     | 99. 99    |
| 129. 0-130. 0 | 0. 26             | 1416. 26          | 0. 02     | 98. 86    | 176. 0-177. 0 | 0. 07             | 1432. 54          | 0. 00     | 99. 99    |
| 130. 0-131. 0 | 0. 27             | 1416. 53          | 0. 02     | 98. 88    | 177. 0-178. 0 | 0. 05             | 1432. 59          | 0. 00     | 100. 00   |
| 131. 0-132. 0 | 0. 28             | 1416. 81          | 0. 02     | 98. 90    | 178. 0-179. 0 | 0. 03             | 1432. 62          | 0. 00     | 100. 00   |
| 132. 0-133. 0 | 0. 30             | 1417. 11          | 0. 02     | 98. 92    | 179. 0-180. 0 | 0. 01             | 1432. 63          | 0. 00     | 100. 00   |
| 133. 0-134. 0 | 0. 31             | 1417. 42          | 0. 02     | 98. 94    |               |                   |                   |           |           |
| 134. 0-135. 0 | 0. 32             | 1417. 74          | 0. 02     | 98. 96    |               |                   |                   |           |           |
| 135. 0-136. 0 | 0. 34             | 1418. 08          | 0. 02     | 98. 98    |               |                   |                   |           |           |
| 136. 0-137. 0 | 0. 35             | 1418. 43          | 0. 02     | 99. 01    |               |                   |                   |           |           |
| 137. 0-138. 0 | 0. 37             | 1418. 80          | 0. 03     | 99. 03    |               |                   |                   |           |           |
| 138. 0-139. 0 | 0. 38             | 1419. 18          | 0. 03     | 99. 06    |               |                   |                   |           |           |
| 139. 0-140. 0 | 0. 40             | 1419. 58          | 0. 03     | 99. 09    |               |                   |                   |           |           |
| 140. 0-141. 0 | 0. 41             | 1419. 99          | 0. 03     | 99. 12    |               |                   |                   |           |           |

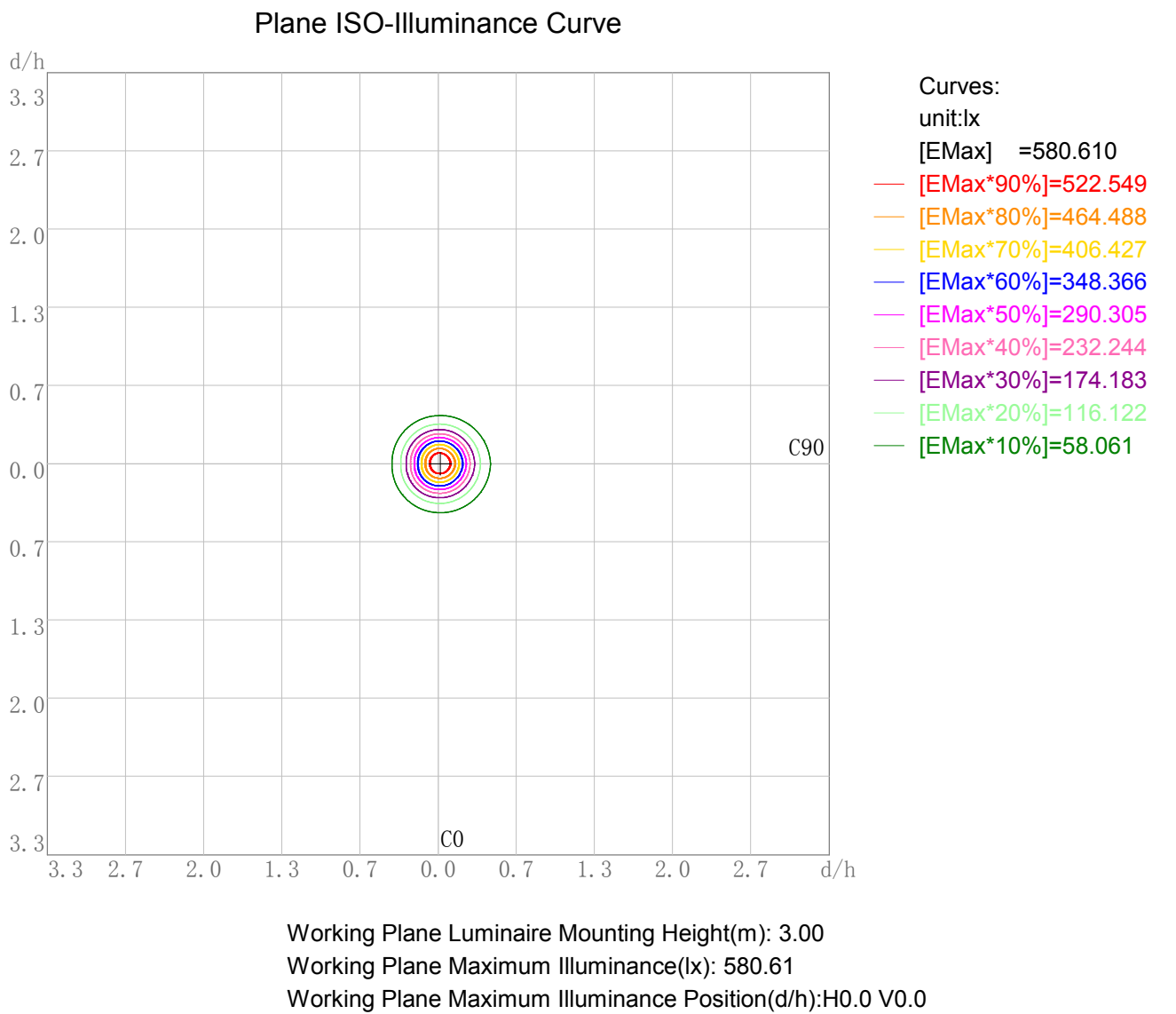
Rectangle ISO Lighting Intensity Diagram

|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |



Plane ISO-Illuminance Diagram

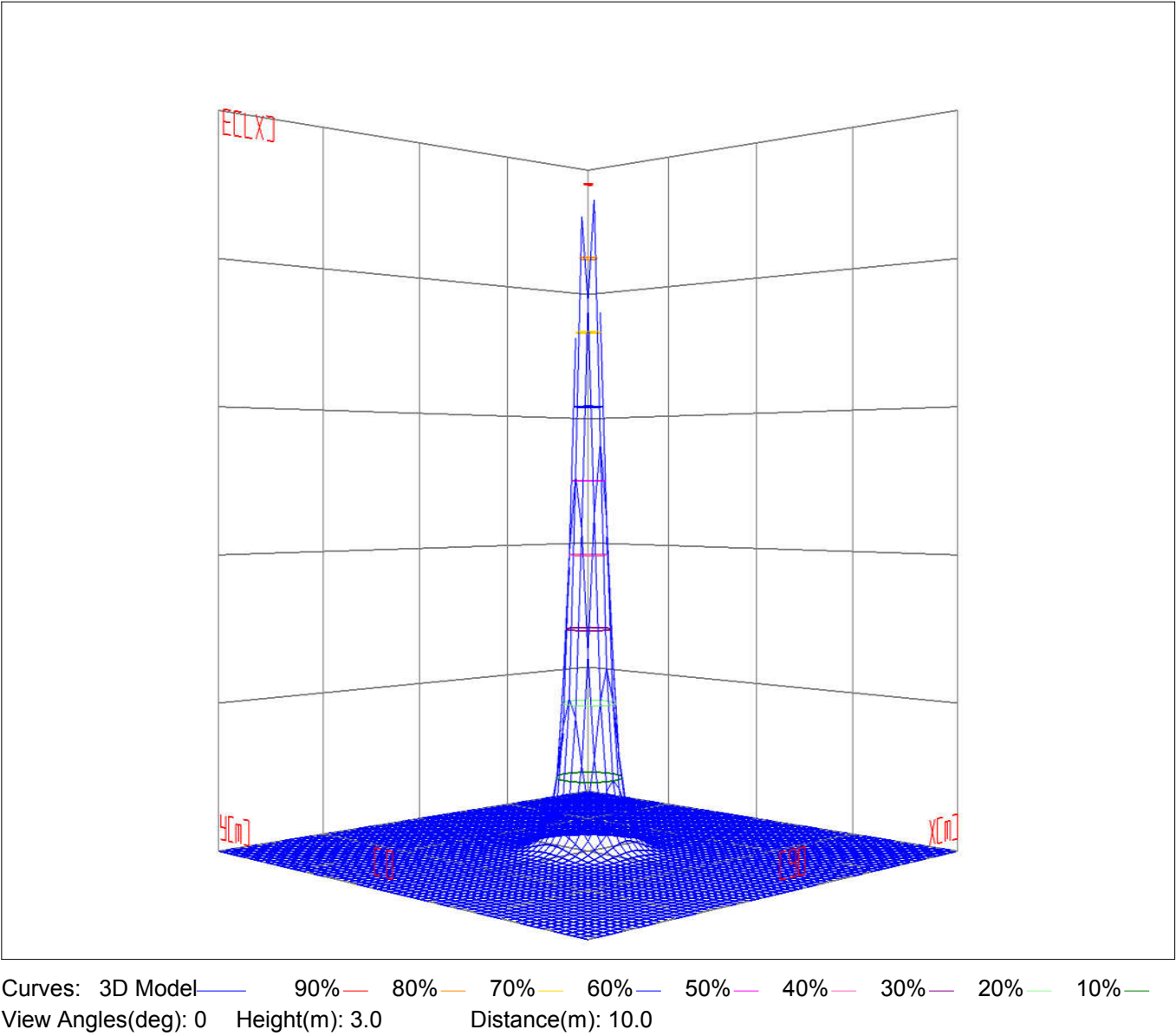
|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |



3D Plane ISO Illuminance Diagram

|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |

3D Plane Illuminance Modal

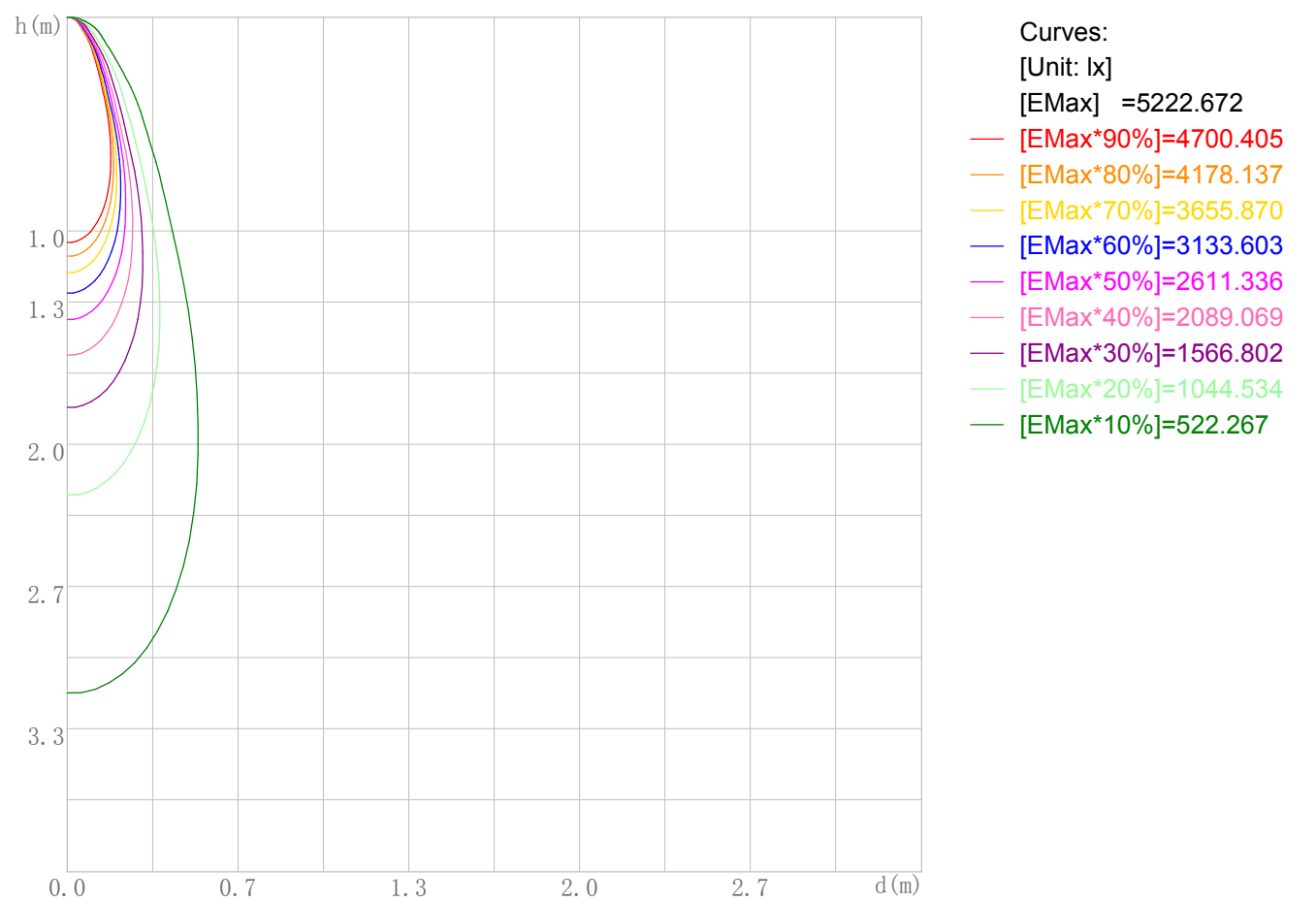




Space ISO Illuminance Diagram

|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |

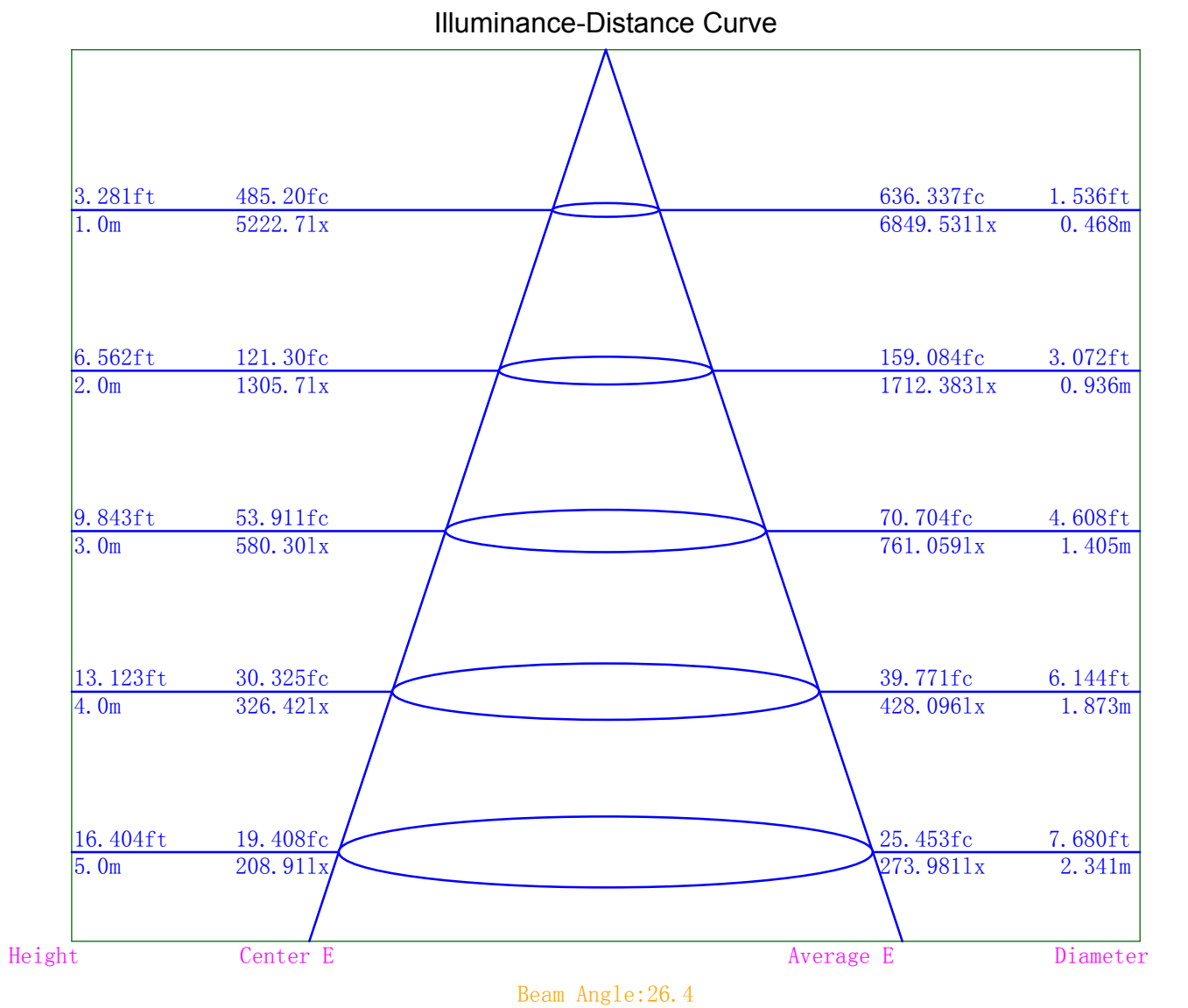
Space ISO Illuminance Curve



Space Plane Maximum Illuminance and @Angle:5222.67lx,0.0deg  
Plane Maximum Lighting Intensity and @Angle:5222.672cd,0eg

Illuminance-Distance Diagram

|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |



Indoor Luminance Limiting Curves

|   |                       |                              |
|---|-----------------------|------------------------------|
| Lum. Name: TR04-20-XX-01 2700K RA90 24D         | Lum. Catalog:         | Test ID: QIU MEI             |
| Lamp Name:                                      | Lamp Catalog: LED     | Test Lab: Quality Department |
| Manufacture: Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date: 2019/09/05        |

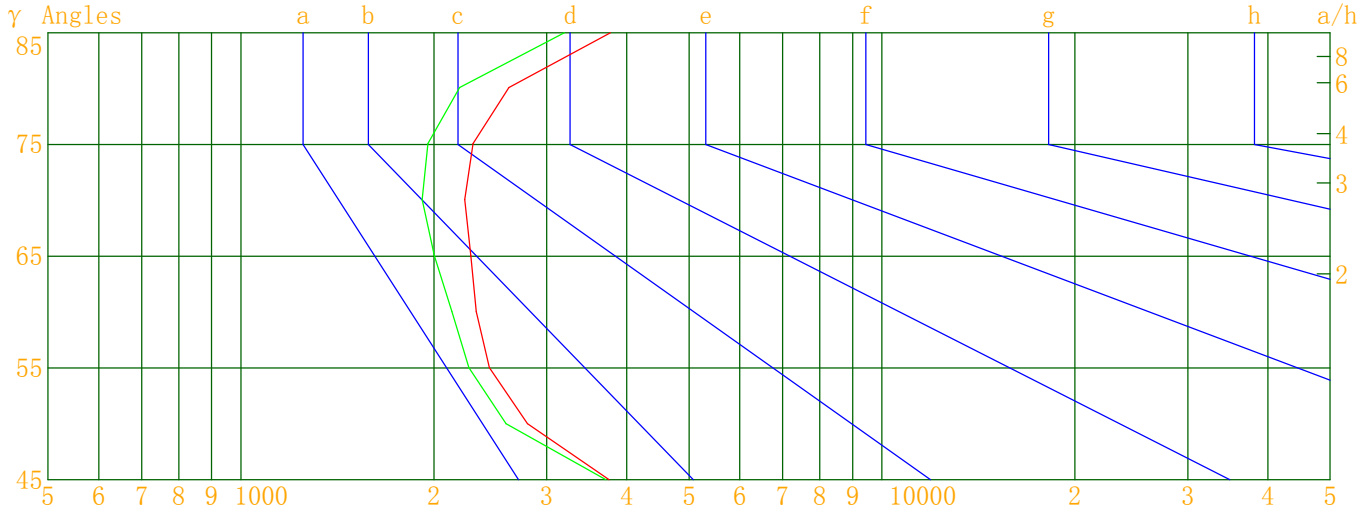
Glare Grade Table

| GI   | Quality | Using Illuminance |      |      |       |       |       |       |       |
|------|---------|-------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A       | 2000              | 1000 | 500  | <=300 |       |       |       |       |
| 1.5  | B       |                   | 2000 | 1000 | 500   | <=300 |       |       |       |
| 1.85 | C       |                   |      | 2000 | 1000  | 500   | <=300 |       |       |
| 2.2  | D       |                   |      |      | 2000  | 1000  | 500   | <=300 |       |
| 2.55 | E       | a                 |      |      |       | 2000  | 1000  | 500   | <=300 |
|      |         |                   | b    | c    | d     | e     | f     | g     | h     |

Luminance Table

| Gama (deg) | 45   | 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
|------------|------|------|------|------|------|------|------|------|------|
| C0         | 3752 | 2799 | 2442 | 2330 | 2282 | 2234 | 2303 | 2617 | 3770 |
| C90        | 3711 | 2591 | 2268 | 2134 | 2004 | 1918 | 1957 | 2193 | 3196 |

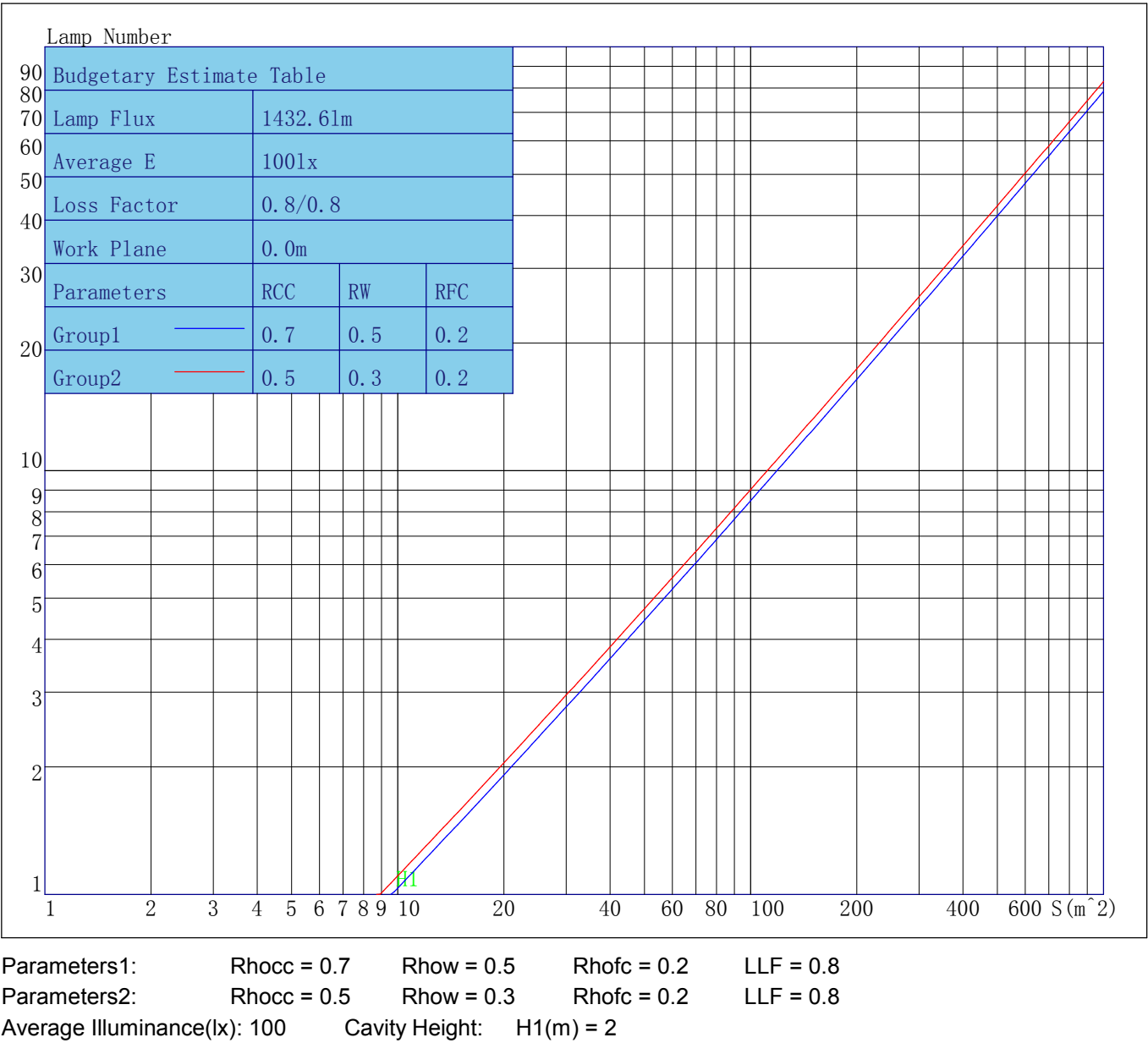
Luminance Limiting Curve



Luminous Size: Length(m)=0.060 Width(m)=0.060 Height(m)=0.250 Area(m^2)=0.018600  
Luminous Type: Without Luminous Side  
Luminous Curves: C0-C180 Color: C90-C270 Color:

Indoor Budgetary Estimate Table

|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |



Indoor Coefficient of Utilization Table

|  |                       |                             |
|--|-----------------------|-----------------------------|
| Lum. Name:TR04-20-XX-01 2700K RA90 24D         | Lum. Catelog:         | Test ID:QIU MEI             |
| Lamp Name:                                     | Lamp Catelog:LED      | Test Lab:Quality Department |
| Manufacture:Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date:2019/09/05        |

| Coefficients of Utilization – Zonal Cavity Method |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Coef.   | Effective Floor Cavity Reflectance RFC=0.20 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| RhoCC (%)   | 80  |     |     |     | 70  |     |     |     | 50  |     |     | 30  |     |     | 10  |     |     | 0  |
| RhoW (%)  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 0  |
| RCR   | Coefficient of Utilization(%)               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| 0   | 119   | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 110 | 110 | 110 | 105 | 105 | 105 | 100 | 100 | 100 | 98 |
| 1   | 114   | 111 | 109 | 107 | 111 | 109 | 107 | 105 | 104 | 103 | 101 | 100 | 99  | 98  | 97  | 96  | 95  | 93 |
| 2   | 109   | 105 | 101 | 98  | 107 | 103 | 100 | 97  | 100 | 97  | 95  | 96  | 94  | 92  | 93  | 92  | 90  | 89 |
| 3   | 105   | 99  | 95  | 92  | 103 | 98  | 94  | 91  | 95  | 92  | 89  | 93  | 90  | 88  | 90  | 88  | 86  | 85 |
| 4   | 101   | 95  | 90  | 87  | 99  | 93  | 89  | 86  | 91  | 88  | 85  | 89  | 86  | 84  | 87  | 85  | 82  | 81 |
| 5   | 97  | 90  | 86  | 82  | 96  | 89  | 85  | 82  | 88  | 84  | 81  | 86  | 83  | 80  | 84  | 81  | 79  | 78 |
| 6   | 94  | 87  | 82  | 78  | 93  | 86  | 81  | 78  | 84  | 80  | 77  | 83  | 79  | 77  | 81  | 79  | 76  | 75 |
| 7   | 91  | 83  | 79  | 75  | 90  | 83  | 78  | 75  | 81  | 77  | 74  | 80  | 77  | 74  | 79  | 76  | 73  | 72 |
| 8   | 88  | 80  | 76  | 72  | 87  | 80  | 75  | 72  | 79  | 75  | 72  | 78  | 74  | 71  | 77  | 73  | 71  | 70 |
| 9   | 85  | 78  | 73  | 70  | 84  | 77  | 73  | 70  | 76  | 72  | 69  | 75  | 72  | 69  | 74  | 71  | 69  | 68 |
| 10  | 83  | 75  | 70  | 67  | 82  | 75  | 70  | 67  | 74  | 70  | 67  | 73  | 69  | 67  | 72  | 69  | 67  | 65 |

**Unified Glare Rating Table**

|   |                       |                              |
|---|-----------------------|------------------------------|
| Lum. Name: TR04-20-XX-01 2700K RA90 24D         | Lum. Catalog:         | Test ID: QIU MEI             |
| Lamp Name:                                      | Lamp Catalog: LED     | Test Lab: Quality Department |
| Manufacture: Shenzhen Norming Lighting Co., Ltd | Test Machine:GON-2000 | Test Date: 2019/09/05        |

Unified Glare Rating Table

|   |                 |      |      |      |      |               |      |      |      |      |
|---|-----------------|------|------|------|------|---------------|------|------|------|------|
| Ceiling RCC                                       | 0.70            | 0.70 | 0.50 | 0.50 | 0.30 | 0.70          | 0.70 | 0.50 | 0.50 | 0.30 |
| Wall RW   | 0.50            | 0.30 | 0.50 | 0.30 | 0.30 | 0.50          | 0.30 | 0.50 | 0.30 | 0.30 |
| Floor RFC   | 0.20            | 0.20 | 0.20 | 0.20 | 0.20 | 0.20          | 0.20 | 0.20 | 0.20 | 0.20 |
| Room Size   | Vewed crosswise |      |      |      |      | Vewed endwise |      |      |      |      |
| X=2H    Y=2H                                      | 10.3            | 11.2 | 10.7 | 11.6 | 11.9 | 10.7          | 11.6 | 11.1 | 12.0 | 12.3 |
|   | 11.2            | 12.0 | 11.6 | 12.4 | 12.8 | 11.3          | 12.1 | 11.7 | 12.5 | 12.9 |
|   | 11.7            | 12.4 | 12.1 | 12.8 | 13.3 | 11.6          | 12.4 | 12.1 | 12.8 | 13.2 |
|   | 12.2            | 12.9 | 12.7 | 13.3 | 13.8 | 12.0          | 12.7 | 12.5 | 13.1 | 13.6 |
|   | 12.5            | 13.2 | 13.0 | 13.6 | 14.1 | 12.2          | 12.9 | 12.7 | 13.3 | 13.8 |
|   | 12.8            | 13.5 | 13.3 | 13.9 | 14.4 | 12.5          | 13.1 | 12.9 | 13.5 | 14.0 |
| X=4H    Y=2H                                      | 10.5            | 11.3 | 11.0 | 11.7 | 12.1 | 10.8          | 11.6 | 11.3 | 11.9 | 12.4 |
|   | 11.7            | 12.3 | 12.1 | 12.7 | 13.2 | 11.6          | 12.2 | 12.1 | 12.7 | 13.2 |
|   | 12.3            | 12.9 | 12.8 | 13.3 | 13.8 | 12.1          | 12.7 | 12.6 | 13.1 | 13.6 |
|   | 13.1            | 13.5 | 13.6 | 14.0 | 14.5 | 12.7          | 13.2 | 13.2 | 13.7 | 14.2 |
|   | 13.5            | 13.9 | 14.0 | 14.4 | 14.9 | 13.0          | 13.4 | 13.5 | 13.9 | 14.4 |
|   | 13.9            | 14.3 | 14.4 | 14.8 | 15.3 | 13.4          | 13.7 | 13.9 | 14.2 | 14.8 |
| X=8H    Y=4H                                      | 12.6            | 13.0 | 13.1 | 13.5 | 14.0 | 12.3          | 12.7 | 12.8 | 13.2 | 13.8 |
|   | 13.5            | 13.8 | 14.0 | 14.4 | 14.9 | 13.1          | 13.4 | 13.6 | 13.9 | 14.5 |
|   | 14.0            | 14.3 | 14.6 | 14.9 | 15.4 | 13.5          | 13.8 | 14.1 | 14.4 | 14.9 |
|   | 14.7            | 14.9 | 15.2 | 15.4 | 16.1 | 14.1          | 14.3 | 14.6 | 14.8 | 15.5 |
| X=12H    Y=4H                                     | 12.6            | 12.9 | 13.1 | 13.5 | 14.0 | 12.3          | 12.7 | 12.9 | 13.2 | 13.7 |
|   | 13.6            | 13.9 | 14.2 | 14.4 | 15.0 | 13.2          | 13.4 | 13.7 | 14.0 | 14.5 |
|   | 14.2            | 14.4 | 14.8 | 15.0 | 15.6 | 13.7          | 13.9 | 14.3 | 14.5 | 15.1 |
| Variations with the objerver position at spacings |                 |      |      |      |      |               |      |      |      |      |
| S=1.0H  | 0.2/-0.2        |      |      |      |      | 0.2/-0.3      |      |      |      |      |
| S=1.5H  | 0.4/-0.4        |      |      |      |      | 0.4/-0.4      |      |      |      |      |
| S=2.0H  | 0.5/-0.5        |      |      |      |      | 0.5/-0.5      |      |      |      |      |
| Reduced UGR Table:                                |                 |      |      |      |      |               |      |      |      |      |
| Nordic Standard Table:                            | BK0             |      |      |      |      | BK0           |      |      |      |      |
| Correction Value                                  | 2.9             |      |      |      |      | 2.4           |      |      |      |      |

o the CIE Pub.117, data has been corrected, refers to the lamp's lumens 8.2flm.

IES Indoor Report

Photometric Filename:TR04-20-XX-01 2700K RA90 24D.IES

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Candela Tabulation

| V/H    | C0.0    | C90.0   | C180.0  | C270.0  |
|--------|---------|---------|---------|---------|
| γ 0.0  | 5222.67 | 5222.67 | 5222.67 | 5222.67 |
| γ 1.0  | 5221.21 | 5227.88 | 5194.42 | 5160.66 |
| γ 2.0  | 5174.32 | 5201.26 | 5123.81 | 5069.07 |
| γ 3.0  | 5089.81 | 5135.76 | 5018.95 | 4941.05 |
| γ 4.0  | 4971.05 | 5037.29 | 4879.34 | 4782.37 |
| γ 5.0  | 4818.67 | 4906.30 | 4706.24 | 4591.03 |
| γ 6.0  | 4626.63 | 4740.62 | 4506.37 | 4369.43 |
| γ 7.0  | 4405.92 | 4543.38 | 4278.62 | 4122.40 |
| γ 8.0  | 4159.71 | 4321.88 | 4030.98 | 3855.80 |
| γ 9.0  | 3892.85 | 4076.90 | 3768.72 | 3576.85 |
| γ 10.0 | 3612.12 | 3815.42 | 3493.73 | 3282.43 |
| γ 11.0 | 3314.68 | 3539.60 | 3204.71 | 2977.48 |
| γ 12.0 | 3006.38 | 3250.33 | 2906.94 | 2673.72 |
| γ 13.0 | 2698.50 | 2952.37 | 2605.34 | 2370.25 |
| γ 14.0 | 2390.90 | 2658.07 | 2312.34 | 2087.45 |
| γ 15.0 | 2100.76 | 2370.39 | 2045.19 | 1827.34 |
| γ 16.0 | 1835.55 | 2102.22 | 1796.82 | 1586.98 |
| γ 17.0 | 1589.88 | 1851.83 | 1566.02 | 1364.97 |
| γ 18.0 | 1364.17 | 1618.57 | 1352.26 | 1164.08 |
| γ 19.0 | 1160.24 | 1400.64 | 1156.59 | 986.23  |
| γ 20.0 | 980.39  | 1207.67 | 985.44  | 833.81  |
| γ 21.0 | 823.19  | 1039.20 | 841.19  | 704.15  |
| γ 22.0 | 693.06  | 898.65  | 722.35  | 601.41  |
| γ 23.0 | 589.46  | 781.84  | 625.17  | 519.84  |
| γ 24.0 | 507.86  | 684.96  | 544.68  | 451.17  |
| γ 25.0 | 443.90  | 602.80  | 477.18  | 393.32  |
| γ 26.0 | 390.46  | 528.31  | 417.78  | 342.23  |
| γ 27.0 | 340.14  | 464.65  | 366.02  | 297.54  |
| γ 28.0 | 297.70  | 412.37  | 323.16  | 261.38  |
| γ 29.0 | 261.93  | 366.86  | 285.65  | 231.62  |
| γ 30.0 | 233.12  | 326.59  | 252.72  | 206.18  |
| γ 31.0 | 209.23  | 290.80  | 224.48  | 183.63  |
| γ 32.0 | 188.84  | 258.55  | 198.73  | 163.97  |
| γ 33.0 | 171.05  | 228.94  | 175.85  | 145.48  |
| γ 34.0 | 154.05  | 201.12  | 154.82  | 129.50  |
| γ 35.0 | 138.76  | 177.18  | 136.55  | 115.69  |
| γ 36.0 | 124.04  | 155.35  | 120.26  | 102.75  |
| γ 37.0 | 111.03  | 136.64  | 105.71  | 91.62   |
| γ 38.0 | 99.34   | 120.14  | 92.85   | 81.95   |
| γ 39.0 | 88.45   | 105.47  | 81.31   | 73.51   |
| γ 40.0 | 80.01   | 92.32   | 70.74   | 66.45   |
| γ 41.0 | 72.13   | 80.34   | 61.54   | 59.98   |
| γ 42.0 | 65.21   | 71.07   | 53.88   | 54.34   |
| γ 43.0 | 59.12   | 61.27   | 47.83   | 49.58   |
| γ 44.0 | 53.84   | 54.44   | 43.04   | 45.73   |
| γ 45.0 | 49.34   | 48.80   | 39.50   | 42.54   |
| γ 46.0 | 45.48   | 44.07   | 36.18   | 39.86   |

Candela Tabulation - (Cont.)

| V/H    | C0.0  | C90.0 | C180.0 | C270.0 |
|--------|-------|-------|--------|--------|
| γ 47.0 | 42.20 | 39.99 | 32.82  | 37.19  |
| γ 48.0 | 39.12 | 36.04 | 30.28  | 34.73  |
| γ 49.0 | 36.06 | 32.95 | 28.56  | 32.47  |
| γ 50.0 | 33.47 | 30.98 | 27.39  | 30.97  |
| γ 51.0 | 31.52 | 29.42 | 26.39  | 29.87  |
| γ 52.0 | 30.06 | 27.96 | 25.41  | 28.83  |
| γ 53.0 | 28.56 | 26.54 | 24.50  | 27.86  |
| γ 54.0 | 27.24 | 25.21 | 23.69  | 26.87  |
| γ 55.0 | 26.06 | 24.19 | 22.99  | 26.04  |
| γ 56.0 | 25.00 | 23.33 | 22.37  | 25.22  |
| γ 57.0 | 24.09 | 22.27 | 21.71  | 24.49  |
| γ 58.0 | 23.29 | 21.41 | 21.00  | 23.80  |
| γ 59.0 | 22.41 | 20.63 | 20.38  | 23.10  |
| γ 60.0 | 21.67 | 19.84 | 19.67  | 22.37  |
| γ 61.0 | 20.87 | 18.89 | 18.92  | 21.65  |
| γ 62.0 | 20.14 | 18.16 | 18.28  | 20.84  |
| γ 63.0 | 19.42 | 17.36 | 17.57  | 20.11  |
| γ 64.0 | 18.70 | 16.57 | 16.77  | 19.37  |
| γ 65.0 | 17.94 | 15.75 | 16.03  | 18.52  |
| γ 66.0 | 17.13 | 14.93 | 15.29  | 17.70  |
| γ 67.0 | 16.32 | 14.20 | 14.59  | 16.90  |
| γ 68.0 | 15.56 | 13.49 | 13.85  | 16.20  |
| γ 69.0 | 14.90 | 12.81 | 13.17  | 15.48  |
| γ 70.0 | 14.21 | 12.20 | 12.57  | 14.63  |
| γ 71.0 | 13.54 | 11.64 | 11.99  | 13.91  |
| γ 72.0 | 12.88 | 11.03 | 11.35  | 13.33  |
| γ 73.0 | 12.22 | 10.40 | 10.77  | 12.59  |
| γ 74.0 | 11.59 | 9.89  | 10.23  | 12.08  |
| γ 75.0 | 11.09 | 9.42  | 9.68   | 11.39  |
| γ 76.0 | 10.47 | 8.88  | 9.12   | 10.74  |
| γ 77.0 | 9.98  | 8.45  | 8.63   | 10.23  |
| γ 78.0 | 9.38  | 7.93  | 8.14   | 9.53   |
| γ 79.0 | 8.94  | 7.47  | 7.62   | 8.98   |
| γ 80.0 | 8.45  | 7.08  | 7.18   | 8.40   |
| γ 81.0 | 7.94  | 6.74  | 6.72   | 7.88   |
| γ 82.0 | 7.43  | 6.33  | 6.24   | 7.44   |
| γ 83.0 | 7.03  | 5.88  | 5.90   | 6.87   |
| γ 84.0 | 6.51  | 5.50  | 5.38   | 6.37   |
| γ 85.0 | 6.11  | 5.18  | 5.04   | 5.97   |
| γ 86.0 | 5.62  | 4.80  | 4.72   | 5.45   |
| γ 87.0 | 5.26  | 4.48  | 4.35   | 4.98   |
| γ 88.0 | 4.84  | 4.14  | 3.96   | 4.55   |
| γ 89.0 | 4.53  | 3.87  | 3.76   | 4.16   |
| γ 90.0 | 4.11  | 3.74  | 3.63   | 3.94   |
| γ 91.0 | 3.98  | 3.63  | 3.47   | 3.78   |
| γ 92.0 | 3.94  | 3.52  | 3.37   | 3.61   |
| γ 93.0 | 3.76  | 3.46  | 3.30   | 3.52   |



Candela Tabulation - (Cont.)

| V/H     | C0.0 | C90.0 | C180.0 | C270.0 |
|---------|------|-------|--------|--------|
| γ 94.0  | 3.61 | 3.37  | 3.11   | 3.35   |
| γ 95.0  | 3.53 | 3.16  | 3.02   | 3.31   |
| γ 96.0  | 3.54 | 3.17  | 2.95   | 3.16   |
| γ 97.0  | 3.37 | 3.05  | 2.86   | 3.07   |
| γ 98.0  | 3.35 | 2.98  | 2.79   | 3.05   |
| γ 99.0  | 3.27 | 2.95  | 2.73   | 2.92   |
| γ 100.0 | 3.16 | 2.83  | 2.62   | 2.83   |
| γ 101.0 | 3.12 | 2.93  | 2.62   | 2.79   |
| γ 102.0 | 3.05 | 2.74  | 2.53   | 2.67   |
| γ 103.0 | 2.91 | 2.69  | 2.48   | 2.62   |
| γ 104.0 | 2.97 | 2.72  | 2.45   | 2.58   |
| γ 105.0 | 2.95 | 2.62  | 2.42   | 2.57   |
| γ 106.0 | 2.80 | 2.59  | 2.38   | 2.55   |
| γ 107.0 | 2.81 | 2.60  | 2.33   | 2.52   |
| γ 108.0 | 2.66 | 2.49  | 2.42   | 2.48   |
| γ 109.0 | 2.63 | 2.46  | 2.36   | 2.42   |
| γ 110.0 | 2.61 | 2.43  | 2.35   | 2.42   |
| γ 111.0 | 2.52 | 2.32  | 2.31   | 2.42   |
| γ 112.0 | 2.60 | 2.33  | 2.38   | 2.42   |
| γ 113.0 | 2.44 | 2.28  | 2.28   | 2.44   |
| γ 114.0 | 2.37 | 2.23  | 2.38   | 2.45   |
| γ 115.0 | 2.46 | 2.28  | 2.33   | 2.42   |
| γ 116.0 | 2.36 | 2.20  | 2.35   | 2.48   |
| γ 117.0 | 2.28 | 2.10  | 2.37   | 2.40   |
| γ 118.0 | 2.29 | 2.10  | 2.36   | 2.49   |
| γ 119.0 | 2.32 | 2.18  | 2.46   | 2.53   |
| γ 120.0 | 2.27 | 2.12  | 2.41   | 2.54   |
| γ 121.0 | 2.28 | 2.21  | 2.48   | 2.63   |
| γ 122.0 | 2.26 | 2.12  | 2.56   | 2.70   |
| γ 123.0 | 2.28 | 2.19  | 2.59   | 2.71   |
| γ 124.0 | 2.37 | 2.21  | 2.71   | 2.83   |
| γ 125.0 | 2.36 | 2.27  | 2.79   | 2.92   |
| γ 126.0 | 2.44 | 2.28  | 2.89   | 3.00   |
| γ 127.0 | 2.55 | 2.36  | 2.96   | 3.15   |
| γ 128.0 | 2.68 | 2.48  | 3.18   | 3.36   |
| γ 129.0 | 2.76 | 2.61  | 3.24   | 3.49   |
| γ 130.0 | 2.88 | 2.74  | 3.40   | 3.71   |
| γ 131.0 | 3.14 | 2.86  | 3.67   | 3.83   |
| γ 132.0 | 3.26 | 2.97  | 3.80   | 4.02   |
| γ 133.0 | 3.47 | 3.30  | 4.08   | 4.32   |
| γ 134.0 | 3.70 | 3.49  | 4.30   | 4.61   |
| γ 135.0 | 3.93 | 3.63  | 4.60   | 4.86   |
| γ 136.0 | 4.20 | 3.95  | 4.86   | 5.12   |
| γ 137.0 | 4.51 | 4.14  | 5.22   | 5.44   |
| γ 138.0 | 4.68 | 4.46  | 5.51   | 5.70   |
| γ 139.0 | 5.05 | 4.78  | 5.79   | 6.04   |
| γ 140.0 | 5.36 | 5.02  | 6.10   | 6.30   |

Candela Tabulation - (Cont.)

| V/H     | C0.0  | C90.0 | C180.0 | C270.0 |
|---------|-------|-------|--------|--------|
| γ 141.0 | 5.67  | 5.31  | 6.46   | 6.67   |
| γ 142.0 | 6.09  | 5.73  | 6.73   | 7.05   |
| γ 143.0 | 6.32  | 5.97  | 7.13   | 7.29   |
| γ 144.0 | 6.72  | 6.33  | 7.51   | 7.57   |
| γ 145.0 | 7.02  | 6.58  | 7.70   | 7.92   |
| γ 146.0 | 7.34  | 6.96  | 8.01   | 8.24   |
| γ 147.0 | 7.60  | 7.24  | 8.35   | 8.44   |
| γ 148.0 | 7.99  | 7.52  | 8.66   | 8.78   |
| γ 149.0 | 8.25  | 7.90  | 8.94   | 8.99   |
| γ 150.0 | 8.56  | 8.13  | 9.17   | 9.22   |
| γ 151.0 | 8.74  | 8.45  | 9.35   | 9.47   |
| γ 152.0 | 8.95  | 8.62  | 9.61   | 9.65   |
| γ 153.0 | 9.22  | 8.88  | 9.88   | 9.88   |
| γ 154.0 | 9.37  | 9.11  | 10.01  | 9.98   |
| γ 155.0 | 9.56  | 9.34  | 10.22  | 10.16  |
| γ 156.0 | 9.84  | 9.52  | 10.33  | 10.28  |
| γ 157.0 | 9.99  | 9.65  | 10.48  | 10.38  |
| γ 158.0 | 10.13 | 9.80  | 10.68  | 10.44  |
| γ 159.0 | 10.29 | 10.00 | 10.72  | 10.50  |
| γ 160.0 | 10.35 | 10.09 | 10.78  | 10.56  |
| γ 161.0 | 10.46 | 10.23 | 10.94  | 10.63  |
| γ 162.0 | 10.55 | 10.27 | 10.92  | 10.70  |
| γ 163.0 | 10.60 | 10.36 | 11.01  | 10.69  |
| γ 164.0 | 10.62 | 10.39 | 11.03  | 10.65  |
| γ 165.0 | 10.62 | 10.50 | 11.03  | 10.66  |
| γ 166.0 | 10.64 | 10.50 | 10.99  | 10.70  |
| γ 167.0 | 10.62 | 10.56 | 10.94  | 10.58  |
| γ 168.0 | 10.60 | 10.50 | 10.91  | 10.56  |
| γ 169.0 | 10.55 | 10.63 | 10.92  | 10.52  |
| γ 170.0 | 10.54 | 10.53 | 10.90  | 10.45  |
| γ 171.0 | 10.56 | 10.55 | 10.85  | 10.40  |
| γ 172.0 | 10.45 | 10.55 | 10.73  | 10.33  |
| γ 173.0 | 10.43 | 10.45 | 10.73  | 10.31  |
| γ 174.0 | 10.46 | 10.48 | 10.71  | 10.32  |
| γ 175.0 | 10.46 | 10.55 | 10.72  | 10.37  |
| γ 176.0 | 10.53 | 10.53 | 10.65  | 10.37  |
| γ 177.0 | 10.42 | 10.53 | 10.64  | 10.36  |
| γ 178.0 | 10.51 | 10.51 | 10.65  | 10.37  |
| γ 179.0 | 10.47 | 10.57 | 10.60  | 10.40  |
| γ 180.0 | 10.56 | 10.56 | 10.56  | 10.56  |