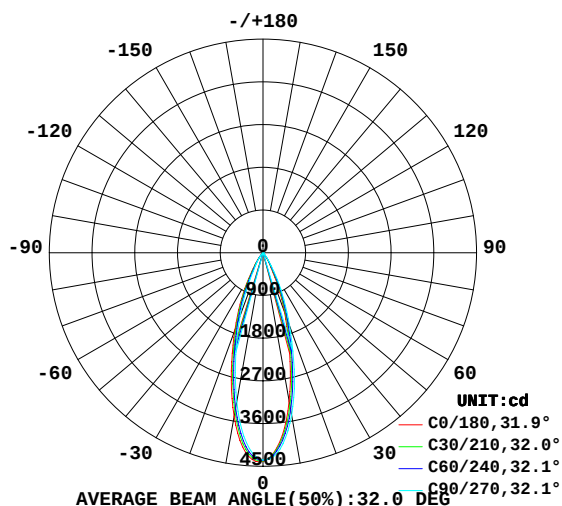


# LUMINAIRE PHOTOMETRIC TEST REPORT

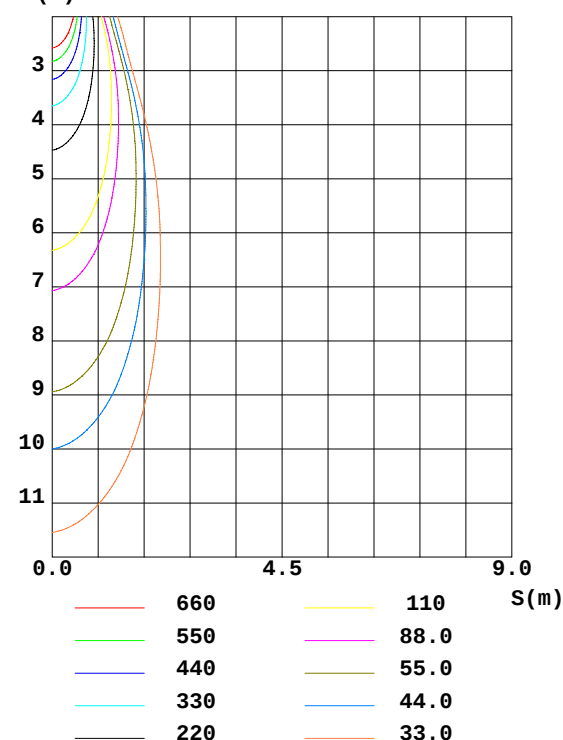
|                                     |        |                   |
|-------------------------------------|--------|-------------------|
| NAME:CL-Halo-D18-uls 3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                               | SPEC.: | SERIAL No.:       |
| MFR.:                               | SUR.:  | PROTECTION ANGLE: |

| DATA OF LAMP     |         | PHOTOMETRIC DATA Eff: 83.48 lm/W |        |                         |           |
|------------------|---------|----------------------------------|--------|-------------------------|-----------|
| MODEL            |         | Imax(cd)                         | 4409   | S/MH(C0/180)            | 0.49      |
| NOMINAL POWER(W) | 18      | LOR(%)                           | 100.0  | S/MH(C90/270)           | 0.56      |
| RATED VOLTAGE(V) | 24      | TOTAL FLUX(lm)                   | 1562.8 | $\eta$ UP, DN(C0-180)   | 0.2, 52.0 |
| NOMINAL FLUX(lm) | 1562.84 | CIE CLASS                        | DIRECT | $\eta$ UP, DN(C180-360) | 0.2, 47.6 |
| LAMPS INSIDE     | 1       | $\eta$ up(%)                     | 0.4    | CIBSE SHR NOM           | 0.50      |
| TEST VOLTAGE(V)  | 24      | $\eta$ down(%)                   | 99.6   | CIBSE SHR MAX           | 0.55      |

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

| $\gamma$ | C0                    | C45    | C90    | C135   | C180   | C225   | C270   | C315   | $\gamma$ | $\Phi$ zone | $\Phi$ total | %lum, lamp |
|----------|-----------------------|--------|--------|--------|--------|--------|--------|--------|----------|-------------|--------------|------------|
| 10       | 3175                  | 3313   | 3475   | 3558   | 3503   | 3365   | 3190   | 3066   | 0- 10    | 365.7       | 365.7        | 23.4, 23.4 |
| 20       | 1333                  | 1468   | 1638   | 1749   | 1731   | 1598   | 1411   | 1271   | 10- 20   | 649.6       | 1015         | 65, 65     |
| 30       | 305.9                 | 355.1  | 461.0  | 556.2  | 532.4  | 432.6  | 331.2  | 292.6  | 20- 30   | 399.7       | 1415         | 90.5, 90.5 |
| 40       | 34.62                 | 47.72  | 67.17  | 89.81  | 91.32  | 72.95  | 48.62  | 32.28  | 30- 40   | 123.5       | 1538         | 98.4, 98.4 |
| 50       | 3.679                 | 4.527  | 6.023  | 6.981  | 6.637  | 5.564  | 4.188  | 3.454  | 40- 50   | 15.40       | 1554         | 99.4, 99.4 |
| 60       | 0.8229                | 1.036  | 1.395  | 1.643  | 1.569  | 1.274  | 0.9405 | 0.7289 | 50- 60   | 2.380       | 1556         | 99.6, 99.6 |
| 70       | 0                     | 0      | 0      | 0.0003 | 0      | 0      | 0      | 0      | 60- 70   | 0.4120      | 1557         | 99.6, 99.6 |
| 80       | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 70- 80   | 0.0000      | 1557         | 99.6, 99.6 |
| 90       | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 80- 90   | 0           | 1557         | 99.6, 99.6 |
| 100      | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 90-100   | 0           | 1557         | 99.6, 99.6 |
| 110      | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 100-110  | 0           | 1557         | 99.6, 99.6 |
| 120      | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 110-120  | 0           | 1557         | 99.6, 99.6 |
| 130      | 0.1787                | 0.1486 | 0.0994 | 0.0285 | 0.1326 | 0.1441 | 0.1836 | 0.2621 | 120-130  | 0.0311      | 1557         | 99.6, 99.6 |
| 140      | 1.192                 | 1.062  | 0.8744 | 0.7172 | 0.8509 | 0.9511 | 1.108  | 1.265  | 130-140  | 0.3779      | 1557         | 99.6, 99.6 |
| 150      | 3.301                 | 3.077  | 2.754  | 2.503  | 2.613  | 2.816  | 3.099  | 3.313  | 140-150  | 1.150       | 1558         | 99.7, 99.7 |
| 160      | 6.061                 | 5.840  | 5.496  | 5.212  | 5.274  | 5.446  | 5.746  | 5.968  | 150-160  | 1.932       | 1560         | 99.8, 99.8 |
| 170      | 8.177                 | 7.996  | 7.783  | 7.553  | 7.652  | 7.674  | 7.847  | 7.987  | 160-170  | 1.896       | 1562         | 99.9, 99.9 |
| 180      | 8.952                 | 8.848  | 8.801  | 8.761  | 8.962  | 8.844  | 8.797  | 8.768  | 170-180  | 0.7897      | 1563         | 100, 100   |
| DEG      | LUMINOUS INTENSITY:cd |        |        |        |        |        |        |        |          | UNIT:lm     |              |            |

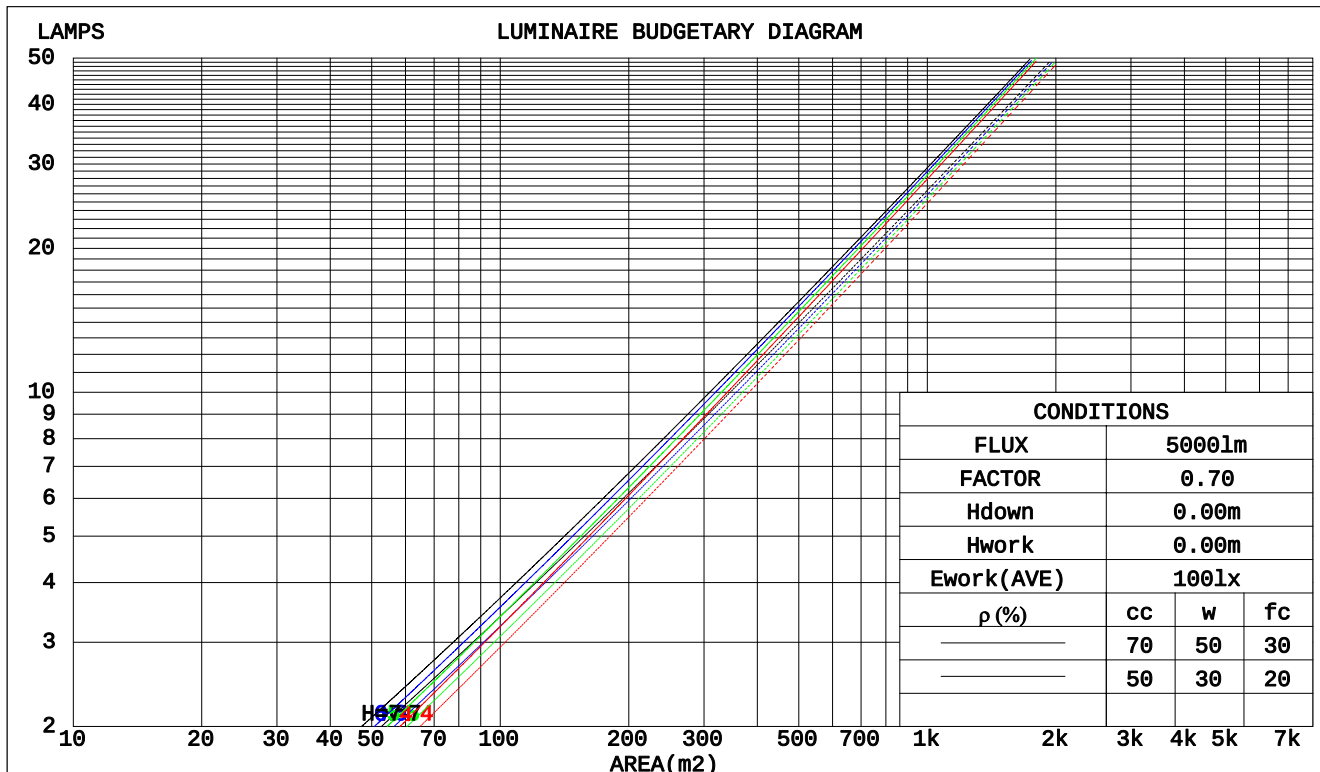
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

### CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Halo-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |

| ρcc  | 80%                   |      |      | 70%                             |      |      | 50%  |      |      | 30%  |      |      | 10%  |      |      | 0   |
|------|-----------------------|------|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|-----|
| ρw   | 50%                   | 30%  | 10%  | 50%                             | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0   |
| ρfc  | 20%                   |      |      | 20%                             |      |      | 20%  |      |      | 20%  |      |      | 20%  |      |      | 0   |
| RCR  | RCR:Room Cavity Ratio |      |      | Coefficients of Utilization(CU) |      |      |      |      |      |      |      |      |      |      |      |     |
| 0.0  | 1.19                  | 1.19 | 1.19 | 1.16                            | 1.16 | 1.16 | 1.11 | 1.11 | 1.11 | 1.06 | 1.06 | 1.06 | 1.02 | 1.02 | 1.02 | .00 |
| 1.0  | 1.12                  | 1.10 | 1.08 | 1.10                            | 1.08 | 1.06 | 1.06 | 1.04 | 1.03 | 1.02 | 1.01 | .00  | .99  | .98  | .97  | .95 |
| 2.0  | 1.06                  | 1.03 | 1.00 | 1.04                            | 1.01 | .99  | 1.01 | .99  | .97  | .98  | .96  | .95  | .95  | .94  | .93  | .91 |
| 3.0  | 1.01                  | .97  | .94  | .99                             | .96  | .93  | .97  | .94  | .91  | .94  | .92  | .90  | .92  | .90  | .88  | .87 |
| 4.0  | .96                   | .92  | .88  | .95                             | .91  | .88  | .93  | .89  | .87  | .91  | .88  | .86  | .89  | .87  | .85  | .83 |
| 5.0  | .92                   | .87  | .84  | .91                             | .86  | .83  | .89  | .85  | .82  | .87  | .84  | .82  | .86  | .83  | .81  | .80 |
| 6.0  | .88                   | .83  | .80  | .87                             | .82  | .79  | .86  | .82  | .79  | .84  | .81  | .78  | .83  | .80  | .78  | .76 |
| 7.0  | .84                   | .79  | .76  | .83                             | .79  | .76  | .82  | .78  | .75  | .81  | .78  | .75  | .80  | .77  | .75  | .73 |
| 8.0  | .81                   | .76  | .73  | .80                             | .76  | .73  | .79  | .75  | .72  | .78  | .75  | .72  | .77  | .74  | .72  | .71 |
| 9.0  | .78                   | .73  | .70  | .77                             | .73  | .70  | .76  | .72  | .69  | .75  | .72  | .69  | .75  | .71  | .69  | .68 |
| 10.0 | .75                   | .70  | .67  | .74                             | .70  | .67  | .74  | .70  | .67  | .73  | .69  | .67  | .72  | .69  | .66  | .65 |



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

WEC AND CCEC

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Halo-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |

| ρ <sub>CC</sub> | 80%                   |      |      | 70%  |      |      | 50%                             |      |      | 30%  |      |      | 10%  |      |      | 0 |  |
|-----------------|-----------------------|------|------|------|------|------|---------------------------------|------|------|------|------|------|------|------|------|---|--|
| ρ <sub>W</sub>  | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%                             | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0 |  |
| ρ <sub>fc</sub> | 20%                   |      |      | 20%  |      |      | 20%                             |      |      | 20%  |      |      | 20%  |      |      | 0 |  |
| RCR             | RCR:Room Cavity Ratio |      |      |      |      |      | Wall Exitance Coefficients(WEC) |      |      |      |      |      |      |      |      |   |  |
| 0.0             |                       |      |      |      |      |      |                                 |      |      |      |      |      |      |      |      |   |  |
| 1.0             | .150                  | .085 | .027 | .143 | .082 | .026 | .130                            | .075 | .024 | .119 | .068 | .022 | .108 | .063 | .020 |   |  |
| 2.0             | .140                  | .077 | .024 | .135 | .074 | .023 | .124                            | .069 | .021 | .115 | .064 | .020 | .106 | .060 | .019 |   |  |
| 3.0             | .132                  | .070 | .021 | .127 | .068 | .021 | .119                            | .064 | .020 | .110 | .060 | .019 | .103 | .057 | .018 |   |  |
| 4.0             | .125                  | .065 | .019 | .121 | .063 | .019 | .113                            | .060 | .018 | .106 | .057 | .017 | .100 | .054 | .017 |   |  |
| 5.0             | .119                  | .060 | .017 | .115 | .059 | .017 | .109                            | .057 | .017 | .102 | .054 | .016 | .097 | .052 | .016 |   |  |
| 6.0             | .113                  | .057 | .016 | .110 | .055 | .016 | .104                            | .053 | .016 | .099 | .051 | .015 | .094 | .049 | .015 |   |  |
| 7.0             | .108                  | .053 | .015 | .105 | .052 | .015 | .100                            | .051 | .015 | .095 | .049 | .014 | .091 | .047 | .014 |   |  |
| 8.0             | .103                  | .050 | .014 | .101 | .050 | .014 | .096                            | .048 | .014 | .092 | .047 | .013 | .088 | .045 | .013 |   |  |
| 9.0             | .099                  | .048 | .013 | .097 | .047 | .013 | .093                            | .046 | .013 | .089 | .045 | .013 | .086 | .044 | .013 |   |  |
| 10.0            | .095                  | .046 | .013 | .093 | .045 | .013 | .090                            | .044 | .012 | .086 | .043 | .012 | .083 | .042 | .012 |   |  |

| ρ <sub>CC</sub> | 80%                   |      |      | 70%  |      |      | 50%                                        |      |      | 30%  |      |      | 10%  |      |      | 0 |
|-----------------|-----------------------|------|------|------|------|------|--------------------------------------------|------|------|------|------|------|------|------|------|---|
| ρ <sub>W</sub>  | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%                                        | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0 |
| ρ <sub>fC</sub> | 20%                   |      |      | 20%  |      |      | 20%                                        |      |      | 20%  |      |      | 20%  |      |      | 0 |
| RCR             | RCR:Room Cavity Ratio |      |      |      |      |      | Ceiling Cavity Exitance Coefficients(CCEC) |      |      |      |      |      |      |      |      |   |
| 0.0             | .193                  | .193 | .193 | .165 | .165 | .165 | .113                                       | .113 | .113 | .065 | .065 | .065 | .021 | .021 | .021 |   |
| 1.0             | .172                  | .161 | .150 | .147 | .138 | .129 | .101                                       | .095 | .089 | .058 | .055 | .052 | .019 | .018 | .017 |   |
| 2.0             | .155                  | .136 | .119 | .133 | .117 | .103 | .091                                       | .081 | .072 | .052 | .047 | .042 | .017 | .015 | .014 |   |
| 3.0             | .141                  | .116 | .097 | .121 | .100 | .084 | .083                                       | .070 | .059 | .048 | .041 | .035 | .015 | .013 | .011 |   |
| 4.0             | .129                  | .101 | .080 | .111 | .088 | .069 | .076                                       | .061 | .049 | .044 | .036 | .029 | .014 | .012 | .010 |   |
| 5.0             | .120                  | .089 | .067 | .103 | .077 | .058 | .071                                       | .054 | .041 | .041 | .032 | .024 | .013 | .010 | .008 |   |
| 6.0             | .111                  | .080 | .057 | .096 | .069 | .049 | .066                                       | .048 | .035 | .038 | .028 | .021 | .012 | .009 | .007 |   |
| 7.0             | .104                  | .072 | .049 | .090 | .062 | .042 | .062                                       | .043 | .030 | .036 | .026 | .018 | .012 | .008 | .006 |   |
| 8.0             | .098                  | .065 | .042 | .084 | .056 | .037 | .058                                       | .040 | .026 | .034 | .023 | .016 | .011 | .008 | .005 |   |
| 9.0             | .093                  | .060 | .037 | .080 | .052 | .032 | .055                                       | .036 | .023 | .032 | .021 | .014 | .010 | .007 | .005 |   |
| 10.0            | .088                  | .055 | .033 | .076 | .048 | .029 | .053                                       | .034 | .020 | .031 | .020 | .012 | .010 | .007 | .004 |   |

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 $\gamma$  Test System:EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

### Uncorrected UGR Table

|                                                    |               |     |     |     |     |                  |     |     |     |     |                   |     |     |     |     |
|----------------------------------------------------|---------------|-----|-----|-----|-----|------------------|-----|-----|-----|-----|-------------------|-----|-----|-----|-----|
| NAME: Halo-D18-3000k-RA90-34D                      |               |     |     |     |     | TYPE:            |     |     |     |     | WEIGHT:           |     |     |     |     |
| DIM.:                                              |               |     |     |     |     | SPEC.:           |     |     |     |     | SERIAL No.:       |     |     |     |     |
| MFR.: VD                                           |               |     |     |     |     | SUR.:            |     |     |     |     | PROTECTION ANGLE: |     |     |     |     |
| ceiling/cavity                                     | 0.7           | 0.7 | 0.5 | 0.5 | 0.3 | 0.7              | 0.7 | 0.5 | 0.5 | 0.3 | 0.7               | 0.7 | 0.5 | 0.5 | 0.3 |
| walls                                              | 0.5           | 0.3 | 0.5 | 0.3 | 0.3 | 0.5              | 0.3 | 0.5 | 0.3 | 0.3 | 0.5               | 0.3 | 0.5 | 0.3 | 0.3 |
| working plane                                      | 0.2           | 0.2 | 0.2 | 0.2 | 0.2 | 0.2              | 0.2 | 0.2 | 0.2 | 0.2 | 0.2               | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions                                    |               |     |     |     |     | Viewed crosswise |     |     |     |     | Viewed endwise    |     |     |     |     |
| x = 2H y = 2H                                      | 1.1           | 1.9 | 1.3 | 2.0 | 2.2 | 2.4              | 3.2 | 2.6 | 3.3 | 3.5 | 2.4               | 3.2 | 2.6 | 3.3 | 3.5 |
| 3H                                                 | 1.0           | 1.7 | 1.2 | 1.8 | 2.0 | 2.3              | 2.9 | 2.5 | 3.1 | 3.3 | 2.3               | 2.9 | 2.5 | 3.1 | 3.3 |
| 4H                                                 | 0.9           | 1.5 | 1.1 | 1.8 | 2.0 | 2.2              | 2.8 | 2.4 | 3.0 | 3.3 | 2.2               | 2.8 | 2.4 | 3.0 | 3.3 |
| 6H                                                 | 0.8           | 1.4 | 1.1 | 1.6 | 1.9 | 2.1              | 2.7 | 2.4 | 2.9 | 3.2 | 2.1               | 2.7 | 2.4 | 2.9 | 3.2 |
| 8H                                                 | 0.7           | 1.3 | 1.1 | 1.6 | 1.9 | 2.0              | 2.6 | 2.3 | 2.9 | 3.1 | 2.0               | 2.6 | 2.3 | 2.9 | 3.1 |
| 12H                                                | 0.7           | 1.3 | 1.0 | 1.5 | 1.8 | 2.0              | 2.6 | 2.3 | 2.8 | 3.1 | 2.0               | 2.6 | 2.3 | 2.8 | 3.1 |
| 4H 2H                                              | 0.9           | 1.5 | 1.2 | 1.8 | 2.0 | 2.2              | 2.8 | 2.4 | 3.0 | 3.3 | 2.2               | 2.8 | 2.4 | 3.0 | 3.3 |
| 3H                                                 | 0.7           | 1.3 | 1.0 | 1.5 | 1.8 | 2.0              | 2.6 | 2.3 | 2.8 | 3.1 | 2.0               | 2.6 | 2.3 | 2.8 | 3.1 |
| 4H                                                 | 0.6           | 1.1 | 1.0 | 1.4 | 1.7 | 1.9              | 2.4 | 2.2 | 2.7 | 3.0 | 1.9               | 2.4 | 2.2 | 2.7 | 3.0 |
| 6H                                                 | 0.5           | 1.0 | 0.9 | 1.3 | 1.7 | 1.8              | 2.3 | 2.2 | 2.6 | 2.9 | 1.8               | 2.3 | 2.2 | 2.6 | 2.9 |
| 8H                                                 | 0.5           | 0.9 | 0.8 | 1.2 | 1.6 | 1.7              | 2.2 | 2.1 | 2.5 | 2.9 | 1.7               | 2.2 | 2.1 | 2.5 | 2.9 |
| 12H                                                | 0.4           | 0.8 | 0.8 | 1.2 | 1.6 | 1.7              | 2.1 | 2.1 | 2.5 | 2.8 | 1.7               | 2.1 | 2.1 | 2.5 | 2.8 |
| 8H 4H                                              | 0.5           | 0.9 | 0.8 | 1.2 | 1.6 | 1.7              | 2.2 | 2.1 | 2.5 | 2.9 | 1.7               | 2.2 | 2.1 | 2.5 | 2.9 |
| 6H                                                 | 0.3           | 0.7 | 0.8 | 1.1 | 1.5 | 1.6              | 2.0 | 2.1 | 2.4 | 2.8 | 1.6               | 2.0 | 2.1 | 2.4 | 2.8 |
| 8H                                                 | 0.3           | 0.6 | 0.7 | 1.0 | 1.5 | 1.6              | 1.9 | 2.0 | 2.3 | 2.8 | 1.6               | 1.9 | 2.0 | 2.3 | 2.8 |
| 12H                                                | 0.2           | 0.5 | 0.7 | 0.9 | 1.4 | 1.5              | 1.8 | 2.0 | 2.2 | 2.7 | 1.5               | 1.8 | 2.0 | 2.2 | 2.7 |
| 12H 4H                                             | 0.4           | 0.8 | 0.8 | 1.2 | 1.6 | 1.7              | 2.1 | 2.1 | 2.5 | 2.8 | 1.7               | 2.1 | 2.1 | 2.5 | 2.8 |
| 6H                                                 | 0.3           | 0.6 | 0.7 | 1.0 | 1.5 | 1.6              | 1.9 | 2.0 | 2.3 | 2.8 | 1.6               | 1.9 | 2.0 | 2.3 | 2.8 |
| 8H                                                 | 0.2           | 0.5 | 0.7 | 0.9 | 1.4 | 1.5              | 1.8 | 2.0 | 2.2 | 2.7 | 1.5               | 1.8 | 2.0 | 2.2 | 2.7 |
| Variations with the observer position at spacings: |               |     |     |     |     |                  |     |     |     |     |                   |     |     |     |     |
| S = 1.0H                                           | + 4.3 / -16.9 |     |     |     |     | + 4.8 / -17.1    |     |     |     |     |                   |     |     |     |     |
| 1.5H                                               | + 6.9 / -12.9 |     |     |     |     | + 7.4 / -14.5    |     |     |     |     |                   |     |     |     |     |
| 2.0H                                               | + 5.7 / -11.2 |     |     |     |     | + 7.6 / -11.0    |     |     |     |     |                   |     |     |     |     |

CIE Pub.117 Corrected 1563 lm Total Lamp Luminous Flux.(8log(F/F0) = 1.6)

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Halo-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |

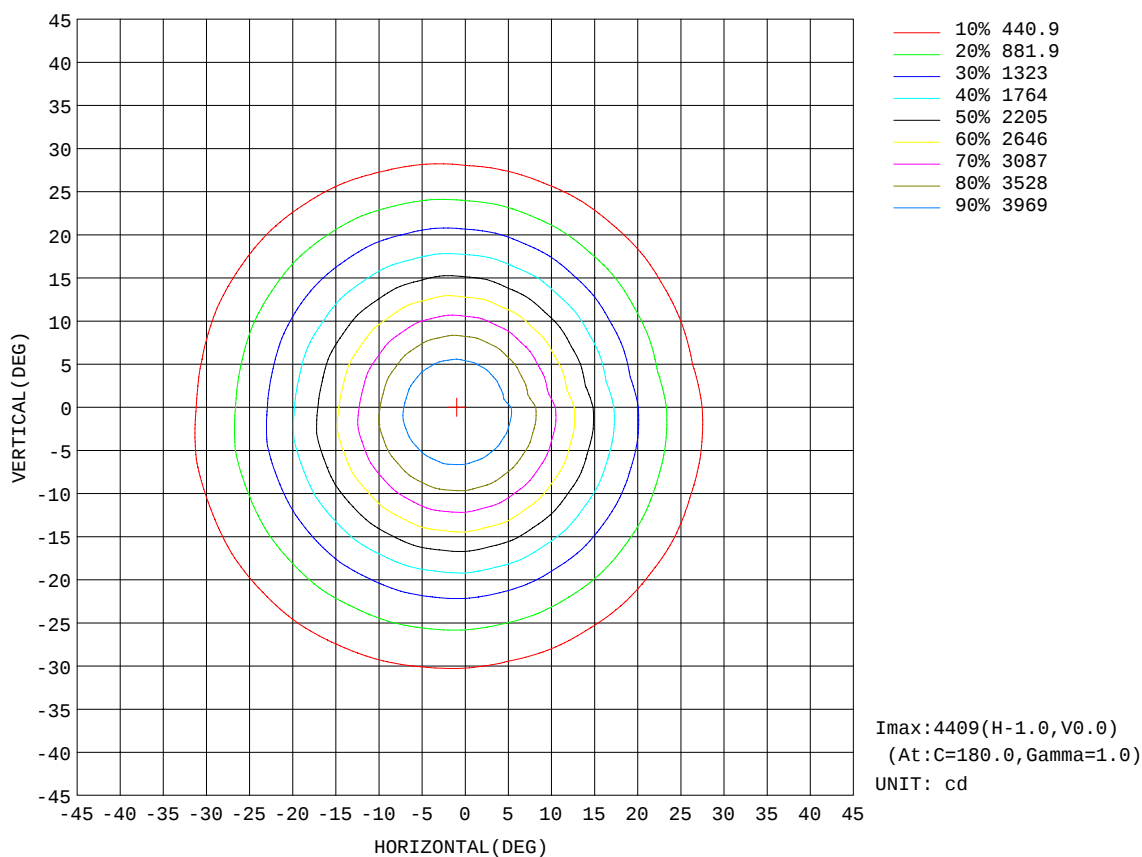
| REFLECTANCE                      |                                                     |     |     |           |     |     |     |               |     |        |
|----------------------------------|-----------------------------------------------------|-----|-----|-----------|-----|-----|-----|---------------|-----|--------|
| Ceiling                          | 0.8                                                 | 0.8 | 0.8 | 0.7       | 0.7 | 0.7 | 0.5 | 0.5           | 0.5 | 0      |
| Walls                            | 0.7                                                 | 0.5 | 0.3 | 0.7       | 0.5 | 0.3 | 0.7 | 0.5           | 0.3 | 0      |
| Working plane                    | 0.2                                                 | 0.2 | 0.2 | 0.2       | 0.2 | 0.2 | 0.2 | 0.2           | 0.2 | 0      |
| ROOM INDEX                       | UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$ |     |     |           |     |     |     |               |     |        |
| $k = 0.60$                       | 91                                                  | 85  | 81  | 90        | 85  | 81  | 89  | 84            | 81  | 78     |
| 0.80                             | 98                                                  | 92  | 89  | 97        | 92  | 89  | 96  | 91            | 88  | 85     |
| 1.00                             | 101                                                 | 96  | 93  | 101       | 96  | 93  | 99  | 96            | 92  | 89     |
| 1.25                             | 105                                                 | 100 | 97  | 104       | 100 | 97  | 102 | 99            | 96  | 92     |
| 1.50                             | 107                                                 | 103 | 100 | 106       | 102 | 100 | 104 | 101           | 99  | 94     |
| 2.00                             | 110                                                 | 106 | 103 | 108       | 105 | 102 | 106 | 103           | 101 | 96     |
| 2.50                             | 111                                                 | 108 | 105 | 110       | 106 | 104 | 106 | 104           | 102 | 96     |
| 3.00                             | 112                                                 | 109 | 107 | 111       | 108 | 106 | 107 | 105           | 104 | 97     |
| 4.00                             | 114                                                 | 112 | 110 | 112       | 110 | 108 | 109 | 107           | 106 | 99     |
| 5.00                             | 116                                                 | 114 | 112 | 113       | 112 | 110 | 109 | 108           | 107 | 100    |
| ROOM INDEX                       | UF(total)                                           |     |     |           |     |     |     |               |     | Direct |
| According to DIN EN 13032-2 2004 |                                                     |     |     | Suspended |     |     |     | SHRNOM = 1.25 |     |        |

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 $\gamma$  Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

### ISOCANDELA DIAGRAM

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Ha1o-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |

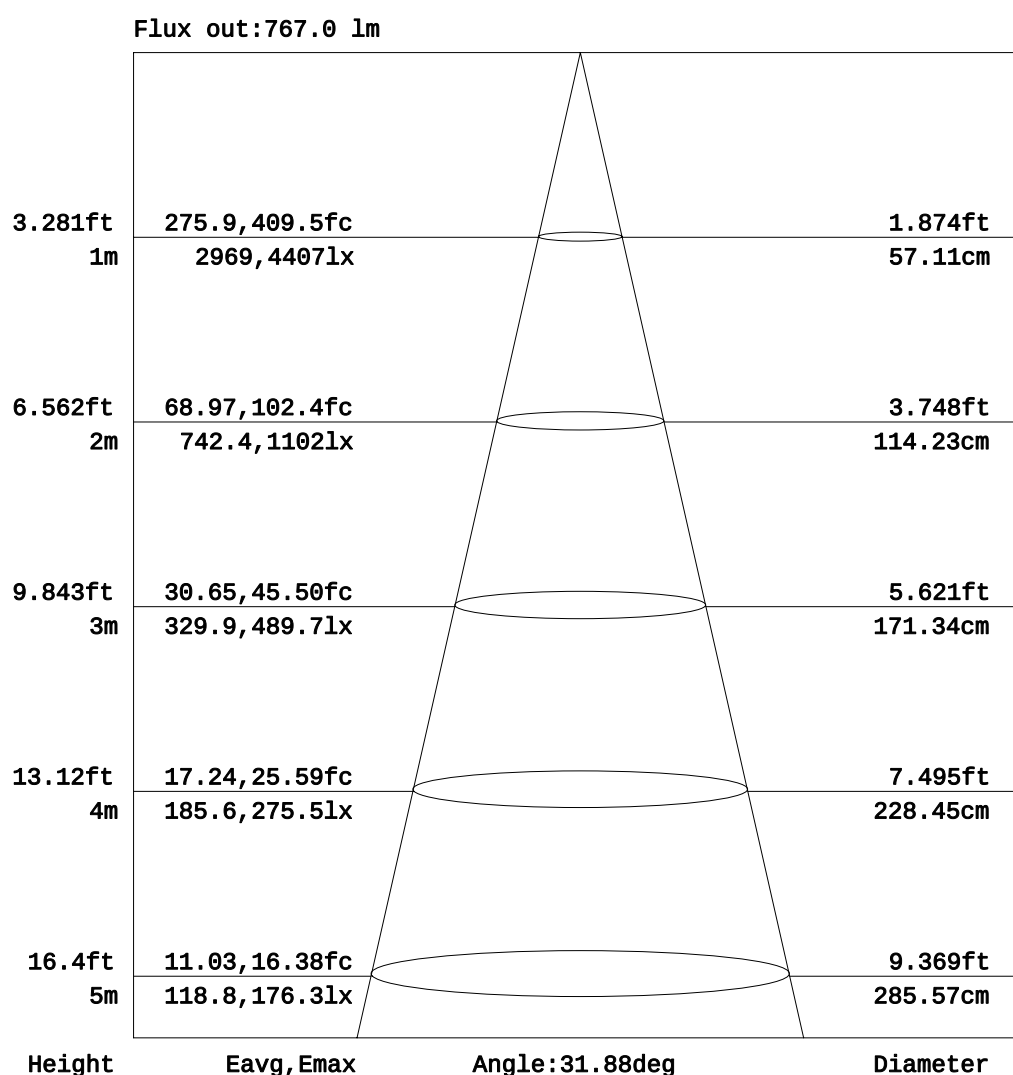


C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

### AAI Figure

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Ha1o-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |



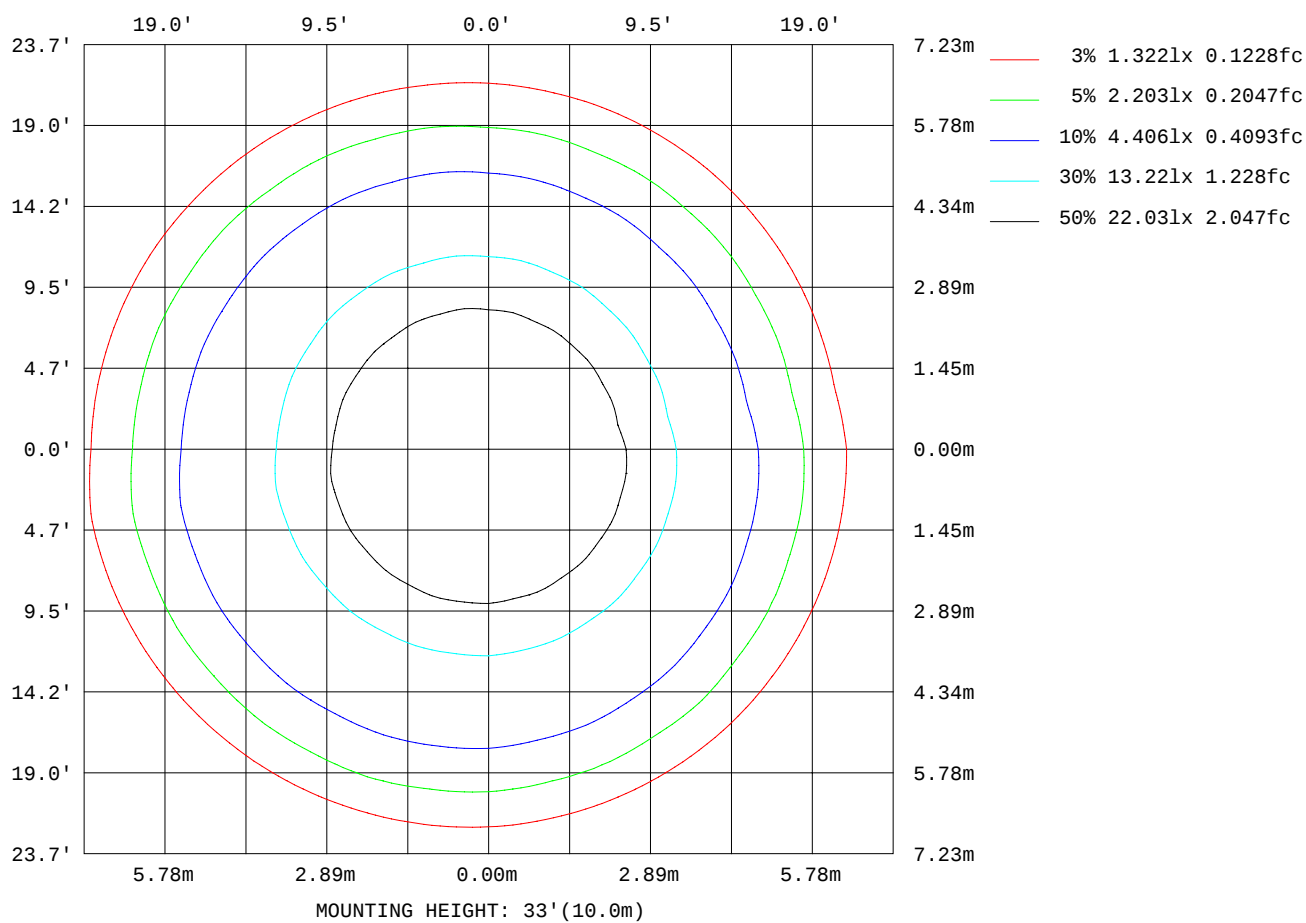
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

### ISOLUX DIAGRAM

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Ha1o-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

### Average Luminance Table(CIBSE)

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Halo-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |

| Parameter description for average Luminance            | Symbol | Value         | Unit     |
|--------------------------------------------------------|--------|---------------|----------|
| Luminance in Azimuth Plane                             | Bc     | refer Table 2 | cd/sq.m. |
| Intensity at angle Gamma in given azimuth plane        | I      | from data     | cd/klm   |
| Number of lamps                                        | N      | 1             |          |
| Output of each lamp(initial lumens as specified)       | F      | 1562.84       | lm       |
| Multiplying factor                                     | K      | 1             |          |
| Luminous area in horizontal plane used in calculations | A      | 0.1           | sq.m.    |
| Angle to the downward vertical from light centre       | Gamma  | from data     | deg      |

Table 1. Calculation parameters for determination of CIBSE LG3:1996 Average Luminance

| G   | C plane(deg) |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |
|-----|--------------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| deg | 0            | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 55  | 32           | 33 | 34 | 36 | 38 | 40 | 43 | 46 | 48 | 50 | 52  | 54  | 55  | 57  | 57  | 59  | 58  | 58  | 55  |
| 60  | 16           | 16 | 18 | 19 | 20 | 21 | 23 | 25 | 27 | 28 | 29  | 30  | 32  | 32  | 33  | 34  | 34  | 33  | 31  |
| 65  | 1            | 0  | 2  | 2  | 5  | 5  | 7  | 8  | 10 | 11 | 13  | 14  | 16  | 16  | 17  | 17  | 18  | 17  | 15  |
| 70  | 0            | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 75  | 0            | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 80  | 0            | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 85  | 0            | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

| CIBSE Category | Gamma (deg) | Average Luminance  |                   | Patch Luminance  |                   |
|----------------|-------------|--------------------|-------------------|------------------|-------------------|
|                |             | maximum calculated | specified maximum | maximum measured | specified maximum |
| Category 1     | 55 to 90    | 59                 | 200               | ---              | 500               |
| Category 2     | 65 to 90    | 18                 | 200               | ---              | 500               |
| Category 3     | 75 to 90    | 0                  | 200               | ---              | 500               |

Table 3. Tabulation of Average and Patch Luminance(cd/sq.m.) for defined CIBSE categories

No match

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

### Average Luminance Table(CIBSE)

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Halo-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |

| Parameter description for average Luminance            | Symbol | Value         | Unit     |
|--------------------------------------------------------|--------|---------------|----------|
| Luminance in Azimuth Plane                             | Bc     | refer Table 2 | cd/sq.m. |
| Intensity at angle Gamma in given azimuth plane        | I      | from data     | cd/klm   |
| Number of lamps                                        | N      | 1             |          |
| Output of each lamp(initial lumens as specified)       | F      | 1562.84       | lm       |
| Multiplying factor                                     | K      | 1             |          |
| Luminous area in horizontal plane used in calculations | A      | 0.1           | sq.m.    |
| Angle to the downward vertical from light centre       | Gamma  | from data     | deg      |

Table 1. Calculation parameters for determination of CIBSE LG3:2001 Average Luminance

| G<br>deg | C plane(deg) |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |
|----------|--------------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|          | 0            | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 55       | 32           | 33 | 34 | 36 | 38 | 40 | 43 | 46 | 48 | 50 | 52  | 54  | 55  | 57  | 57  | 59  | 58  | 58  | 55  |
| 60       | 16           | 16 | 18 | 19 | 20 | 21 | 23 | 25 | 27 | 28 | 29  | 30  | 32  | 32  | 33  | 34  | 34  | 33  | 31  |
| 65       | 1            | 0  | 2  | 2  | 5  | 5  | 7  | 8  | 10 | 11 | 13  | 14  | 16  | 16  | 17  | 17  | 18  | 17  | 15  |
| 70       | 0            | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 75       | 0            | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 80       | 0            | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 85       | 0            | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |

Table 2. Average Luminance(cd/sq.m.) for defined C plane,Gamma angle

| range<br>(deg) | Maximum<br>measured | Average Luminance(cd/sq.m)                             |                                     |                                    |                                    |
|----------------|---------------------|--------------------------------------------------------|-------------------------------------|------------------------------------|------------------------------------|
|                |                     | Maximum limit for screen type & software category used |                                     |                                    |                                    |
|                |                     | Type I,II screen<br>Some neg.s'ware                    | Type I,II screen<br>Only pos.s'ware | Type III screen<br>Some neg.s'ware | Type III screen<br>Only pos.s'ware |
| 55 to 90       | 59                  | 1000                                                   | 1500                                | 200                                | 500                                |
| 65 to 90       | 18                  | 1000                                                   | 1500                                | 200                                | 500                                |

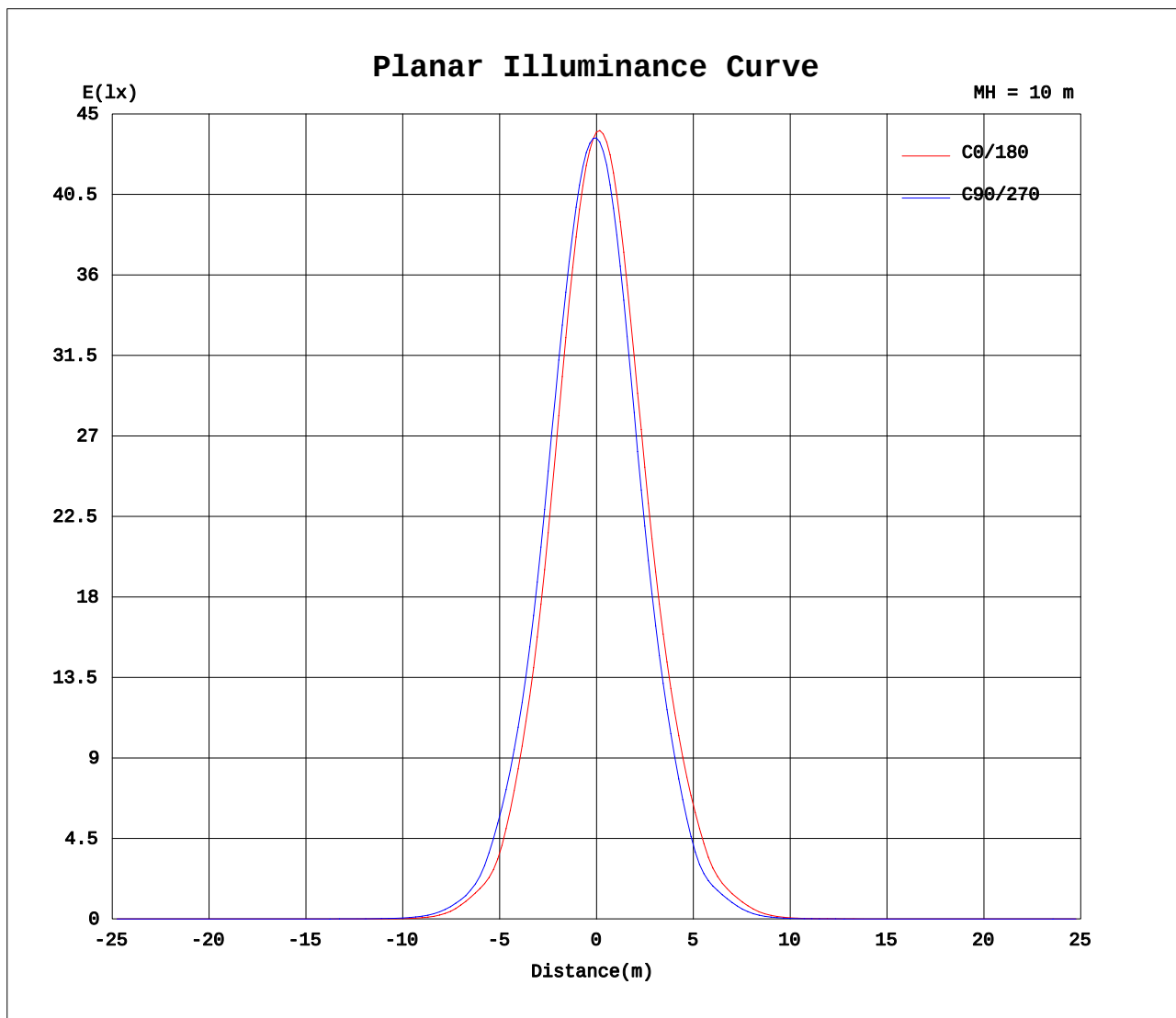
Table 3. Tabulation of average luminance(cd/sq.m.) and luminance limits

The luminaire satisfies the specified luminance criteria for  
Negative Software with Type I & II Screen(Good to Moderate treatment).

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:tang  
Test Date:2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity:65.0%  
Test Distance:7.100m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Halo-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |

Table--1

UNIT: cd

| C(°)<br>γ (°) | 0    | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  | 150  | 160  | 170  | 180  |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0             | 4399 | 4395 | 4388 | 4386 | 4381 | 4378 | 4375 | 4372 | 4369 | 4366 | 4365 | 4360 | 4359 | 4355 | 4354 | 4349 | 4349 | 4344 | 4399 |
| 5             | 4013 | 4028 | 4030 | 4049 | 4052 | 4077 | 4086 | 4113 | 4122 | 4150 | 4163 | 4188 | 4195 | 4210 | 4209 | 4220 | 4218 | 4227 | 4220 |
| 10            | 3175 | 3218 | 3225 | 3272 | 3287 | 3339 | 3360 | 3416 | 3430 | 3475 | 3490 | 3530 | 3536 | 3563 | 3553 | 3574 | 3557 | 3563 | 3503 |
| 15            | 2168 | 2213 | 2224 | 2286 | 2301 | 2370 | 2391 | 2465 | 2475 | 2540 | 2550 | 2602 | 2601 | 2640 | 2631 | 2664 | 2641 | 2658 | 2579 |
| 20            | 1333 | 1367 | 1381 | 1421 | 1443 | 1493 | 1513 | 1565 | 1590 | 1638 | 1649 | 1688 | 1703 | 1746 | 1751 | 1781 | 1773 | 1792 | 1731 |
| 25            | 680  | 713  | 734  | 774  | 801  | 845  | 873  | 911  | 934  | 972  | 993  | 1023 | 1034 | 1069 | 1080 | 1096 | 1097 | 1117 | 1066 |
| 30            | 306  | 316  | 320  | 336  | 344  | 367  | 381  | 410  | 427  | 461  | 481  | 511  | 524  | 554  | 559  | 578  | 572  | 582  | 532  |
| 35            | 142  | 145  | 150  | 155  | 161  | 167  | 173  | 181  | 189  | 197  | 206  | 215  | 226  | 237  | 249  | 259  | 267  | 277  | 257  |
| 40            | 34.6 | 37.1 | 39.2 | 42.9 | 45.3 | 50.1 | 53.6 | 58.2 | 61.6 | 67.2 | 71.0 | 77.3 | 81.2 | 88.0 | 91.6 | 97.8 | 100  | 104  | 91.3 |
| 45            | 8.48 | 8.91 | 9.41 | 10.3 | 11.0 | 12.4 | 13.4 | 15.0 | 15.9 | 17.4 | 18.3 | 19.5 | 20.2 | 21.5 | 22.0 | 23.0 | 23.2 | 23.8 | 20.9 |
| 50            | 3.68 | 3.83 | 3.93 | 4.17 | 4.35 | 4.71 | 4.97 | 5.43 | 5.68 | 6.02 | 6.25 | 6.54 | 6.69 | 6.93 | 7.03 | 7.22 | 7.16 | 7.25 | 6.64 |
| 55            | 1.83 | 1.89 | 1.96 | 2.05 | 2.16 | 2.29 | 2.46 | 2.63 | 2.76 | 2.89 | 2.96 | 3.07 | 3.14 | 3.25 | 3.29 | 3.36 | 3.34 | 3.35 | 3.13 |
| 60            | 0.82 | 0.82 | 0.90 | 0.93 | 1.02 | 1.06 | 1.17 | 1.25 | 1.35 | 1.39 | 1.47 | 1.51 | 1.59 | 1.62 | 1.67 | 1.69 | 1.69 | 1.67 | 1.57 |
| 65            | 0.03 | 0.02 | 0.09 | 0.10 | 0.19 | 0.21 | 0.30 | 0.34 | 0.44 | 0.48 | 0.57 | 0.58 | 0.67 | 0.67 | 0.73 | 0.72 | 0.75 | 0.71 | 0.64 |
| 70            | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 75            | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 80            | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.00 | 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 | 0.00 | 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 | 0.00 | 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 | 0.00 | 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 110           | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 115           | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 120           | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 125           | 0.00 | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 130           | 0.18 | 0.22 | 0.16 | 0.19 | 0.14 | 0.16 | 0.10 | 0.13 | 0.07 | 0.10 | 0.04 | 0.08 | 0.02 | 0.05 | 0.00 | 0.05 | 0.00 | 0.05 | 0.13 |
| 135           | 0.57 | 0.59 | 0.53 | 0.55 | 0.48 | 0.50 | 0.42 | 0.43 | 0.36 | 0.37 | 0.32 | 0.33 | 0.27 | 0.30 | 0.24 | 0.28 | 0.24 | 0.28 | 0.38 |
| 140           | 1.19 | 1.20 | 1.14 | 1.14 | 1.06 | 1.06 | 0.98 | 0.96 | 0.88 | 0.87 | 0.81 | 0.80 | 0.73 | 0.74 | 0.69 | 0.72 | 0.68 | 0.71 | 0.85 |
| 145           | 2.11 | 2.10 | 2.04 | 2.01 | 1.94 | 1.90 | 1.82 | 1.79 | 1.70 | 1.67 | 1.58 | 1.56 | 1.49 | 1.48 | 1.43 | 1.44 | 1.40 | 1.43 | 1.58 |
| 150           | 3.30 | 3.28 | 3.22 | 3.18 | 3.11 | 3.05 | 2.97 | 2.90 | 2.81 | 2.75 | 2.67 | 2.63 | 2.56 | 2.53 | 2.48 | 2.47 | 2.45 | 2.46 | 2.61 |
| 155           | 4.68 | 4.66 | 4.60 | 4.55 | 4.47 | 4.40 | 4.31 | 4.24 | 4.15 | 4.08 | 4.00 | 3.94 | 3.87 | 3.82 | 3.78 | 3.76 | 3.75 | 3.74 | 3.89 |
| 160           | 6.06 | 6.06 | 6.00 | 5.95 | 5.87 | 5.81 | 5.72 | 5.65 | 5.57 | 5.50 | 5.41 | 5.36 | 5.29 | 5.23 | 5.19 | 5.17 | 5.14 | 5.14 | 5.27 |
| 165           | 7.28 | 7.29 | 7.21 | 7.19 | 7.09 | 7.05 | 6.96 | 6.91 | 6.82 | 6.78 | 6.69 | 6.66 | 6.57 | 6.54 | 6.48 | 6.47 | 6.44 | 6.45 | 6.57 |
| 170           | 8.18 | 8.19 | 8.11 | 8.10 | 8.01 | 7.99 | 7.89 | 7.88 | 7.78 | 7.78 | 7.70 | 7.67 | 7.59 | 7.58 | 7.52 | 7.52 | 7.49 | 7.54 | 7.65 |
| 175           | 8.73 | 8.77 | 8.70 | 8.70 | 8.60 | 8.61 | 8.53 | 8.54 | 8.45 | 8.48 | 8.40 | 8.41 | 8.33 | 8.35 | 8.28 | 8.32 | 8.29 | 8.36 | 8.48 |
| 180           | 8.95 | 8.95 | 8.91 | 8.91 | 8.85 | 8.85 | 8.82 | 8.82 | 8.80 | 8.80 | 8.79 | 8.79 | 8.77 | 8.77 | 8.75 | 8.76 | 8.78 | 8.83 | 8.96 |

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks:

**LUMINOUS DISTRIBUTION INTENSITY DATA**

|                               |        |                   |
|-------------------------------|--------|-------------------|
| NAME: Halo-D18-3000k-RA90-34D | TYPE:  | WEIGHT:           |
| DIM.:                         | SPEC.: | SERIAL No.:       |
| MFR.: VD                      | SUR.:  | PROTECTION ANGLE: |

Table--2

UNIT: cd

| C(°)  | 190  | 200  | 210  | 220  | 230  | 240  | 250  | 260  | 270  | 280  | 290  | 300  | 310  | 320  | 330  | 340  | 350  |  |  |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| γ (°) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
| 0     | 4395 | 4388 | 4386 | 4381 | 4378 | 4375 | 4372 | 4369 | 4366 | 4365 | 4360 | 4359 | 4355 | 4354 | 4349 | 4349 | 4344 |  |  |
| 5     | 4198 | 4188 | 4159 | 4148 | 4116 | 4102 | 4067 | 4054 | 4019 | 4007 | 3978 | 3971 | 3944 | 3941 | 3920 | 3924 | 3909 |  |  |
| 10    | 3464 | 3452 | 3400 | 3389 | 3341 | 3323 | 3268 | 3247 | 3190 | 3174 | 3119 | 3112 | 3064 | 3068 | 3031 | 3051 | 3030 |  |  |
| 15    | 2531 | 2525 | 2466 | 2449 | 2388 | 2371 | 2308 | 2288 | 2224 | 2203 | 2141 | 2131 | 2083 | 2081 | 2045 | 2064 | 2042 |  |  |
| 20    | 1696 | 1688 | 1641 | 1625 | 1572 | 1550 | 1489 | 1467 | 1411 | 1390 | 1340 | 1319 | 1276 | 1267 | 1241 | 1250 | 1241 |  |  |
| 25    | 1040 | 1028 | 991  | 967  | 923  | 894  | 838  | 804  | 752  | 724  | 678  | 659  | 623  | 618  | 597  | 605  | 601  |  |  |
| 30    | 513  | 500  | 468  | 449  | 417  | 396  | 368  | 352  | 331  | 322  | 307  | 304  | 293  | 292  | 286  | 288  | 285  |  |  |
| 35    | 252  | 244  | 235  | 223  | 212  | 201  | 189  | 178  | 168  | 159  | 150  | 144  | 137  | 131  | 128  | 125  | 125  |  |  |
| 40    | 87.0 | 85.3 | 79.6 | 76.3 | 69.6 | 65.6 | 58.9 | 54.6 | 48.6 | 44.7 | 39.9 | 37.0 | 33.1 | 31.5 | 29.2 | 29.0 | 28.1 |  |  |
| 45    | 20.0 | 19.6 | 18.4 | 17.8 | 16.4 | 15.4 | 13.8 | 12.8 | 11.3 | 10.3 | 9.23 | 8.63 | 7.97 | 7.70 | 7.37 | 7.38 | 7.30 |  |  |
| 50    | 6.42 | 6.27 | 5.96 | 5.74 | 5.39 | 5.18 | 4.79 | 4.57 | 4.19 | 3.99 | 3.73 | 3.62 | 3.48 | 3.43 | 3.34 | 3.34 | 3.33 |  |  |
| 55    | 3.05 | 2.97 | 2.81 | 2.72 | 2.58 | 2.47 | 2.34 | 2.21 | 2.06 | 1.92 | 1.83 | 1.75 | 1.72 | 1.66 | 1.64 | 1.63 | 1.66 |  |  |
| 60    | 1.54 | 1.45 | 1.39 | 1.30 | 1.25 | 1.16 | 1.11 | 1.01 | 0.94 | 0.84 | 0.82 | 0.76 | 0.76 | 0.70 | 0.71 | 0.67 | 0.70 |  |  |
| 65    | 0.63 | 0.55 | 0.52 | 0.43 | 0.39 | 0.30 | 0.27 | 0.17 | 0.16 | 0.08 | 0.08 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |
| 70    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |
| 75    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |
| 80    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 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 | 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 | 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 | 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |
| 110   | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |
| 115   | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |
| 120   | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |
| 125   | 0.00 | 0.01 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.05 | 0.01 | 0.07 | 0.03 | 0.08 | 0.04 | 0.09 | 0.05 |  |  |
| 130   | 0.08 | 0.14 | 0.10 | 0.17 | 0.12 | 0.18 | 0.16 | 0.22 | 0.18 | 0.24 | 0.21 | 0.27 | 0.24 | 0.29 | 0.25 | 0.31 | 0.27 |  |  |
| 135   | 0.36 | 0.41 | 0.39 | 0.44 | 0.43 | 0.50 | 0.48 | 0.55 | 0.53 | 0.59 | 0.58 | 0.64 | 0.62 | 0.67 | 0.65 | 0.69 | 0.66 |  |  |
| 140   | 0.82 | 0.89 | 0.88 | 0.95 | 0.95 | 1.02 | 1.03 | 1.10 | 1.11 | 1.17 | 1.17 | 1.23 | 1.24 | 1.29 | 1.28 | 1.32 | 1.30 |  |  |
| 145   | 1.58 | 1.63 | 1.66 | 1.72 | 1.76 | 1.83 | 1.87 | 1.93 | 1.97 | 2.03 | 2.06 | 2.12 | 2.13 | 2.19 | 2.19 | 2.22 | 2.21 |  |  |
| 150   | 2.63 | 2.68 | 2.72 | 2.79 | 2.84 | 2.91 | 2.98 | 3.05 | 3.10 | 3.16 | 3.21 | 3.26 | 3.29 | 3.33 | 3.35 | 3.37 | 3.37 |  |  |
| 155   | 3.91 | 3.96 | 4.00 | 4.07 | 4.13 | 4.21 | 4.27 | 4.35 | 4.42 | 4.48 | 4.52 | 4.59 | 4.62 | 4.67 | 4.68 | 4.70 | 4.70 |  |  |
| 160   | 5.26 | 5.32 | 5.35 | 5.42 | 5.47 | 5.55 | 5.62 | 5.69 | 5.75 | 5.81 | 5.86 | 5.92 | 5.94 | 6.00 | 6.01 | 6.03 | 6.02 |  |  |
| 165   | 6.54 | 6.57 | 6.58 | 6.66 | 6.68 | 6.77 | 6.80 | 6.89 | 6.93 | 7.00 | 7.01 | 7.08 | 7.09 | 7.14 | 7.14 | 7.18 | 7.15 |  |  |
| 170   | 7.61 | 7.63 | 7.60 | 7.68 | 7.67 | 7.75 | 7.75 | 7.84 | 7.85 | 7.92 | 7.91 | 7.97 | 7.96 | 8.02 | 8.01 | 8.05 | 8.02 |  |  |
| 175   | 8.43 | 8.43 | 8.38 | 8.43 | 8.41 | 8.48 | 8.45 | 8.52 | 8.49 | 8.57 | 8.52 | 8.58 | 8.54 | 8.60 | 8.58 | 8.64 | 8.61 |  |  |
| 180   | 8.93 | 8.94 | 8.86 | 8.86 | 8.82 | 8.82 | 8.81 | 8.81 | 8.80 | 8.80 | 8.79 | 8.79 | 8.77 | 8.77 | 8.78 | 8.79 | 8.85 |  |  |

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: tang  
Test Date: 2022-04-08

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.262  
Humidity: 65.0%  
Test Distance: 7.100m [K=1.0000]  
Remarks: