

Report No.:

Test Time: 07/10/2024 15:47

## Luminaire Property

Luminaire Manufacturer: Lighting Line

Luminaire Description: LLP-SL13-0222+LLP-02-FM

Lamp Description: F52-40s-1208F2/W5 1m Number of Lamps: 1

Lumens per Lamp: 936

Voltage: 24.0 V

Current: 0.370 A

Power: 8.88 W

Power Factor: 1.000

## Photometric Results

CIE Class: Direct

Measurement Flux: 676.2 lm

Downward Ratio: 65.92%

Total Rated Lamp Lumens: 936.0 lm

Efficiency: 72.24%

Upward Ratio: 6.32%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 160.1, 194.1, 172.3, 170.7

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 111.8, 120.1, 116.6, 116.2

Luminaire Efficacy Rating (LER): 76.20

Central Intensity: 202.74 cd

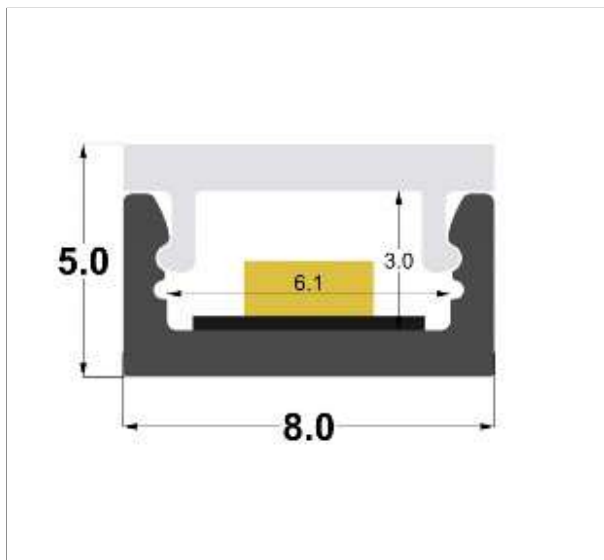
Max. Intensity: 202.87 cd

Pos of Max. Intensity: H90 V0

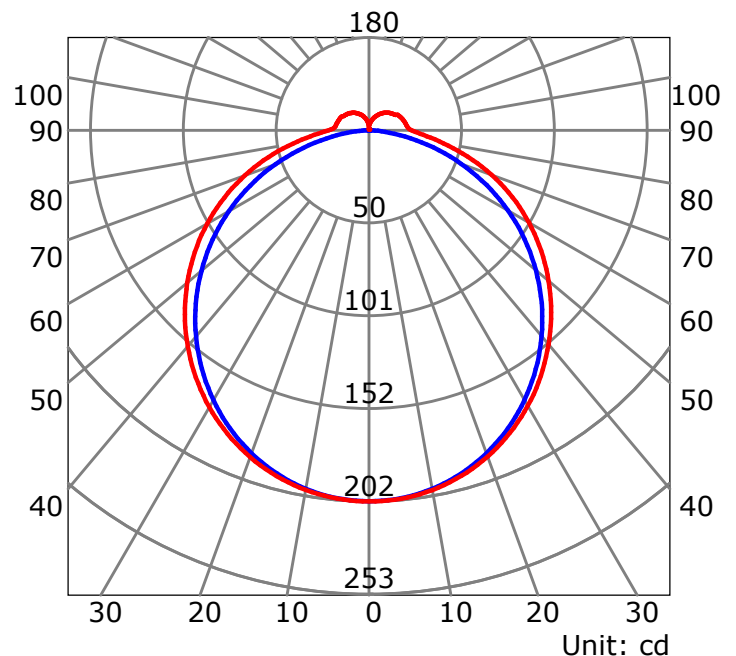
S/MH(C0/C180): 1.25

S/MH(C90/C270): 1.28

Picture Of Luminaire



Luminous Intensity Distribution Curve



— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

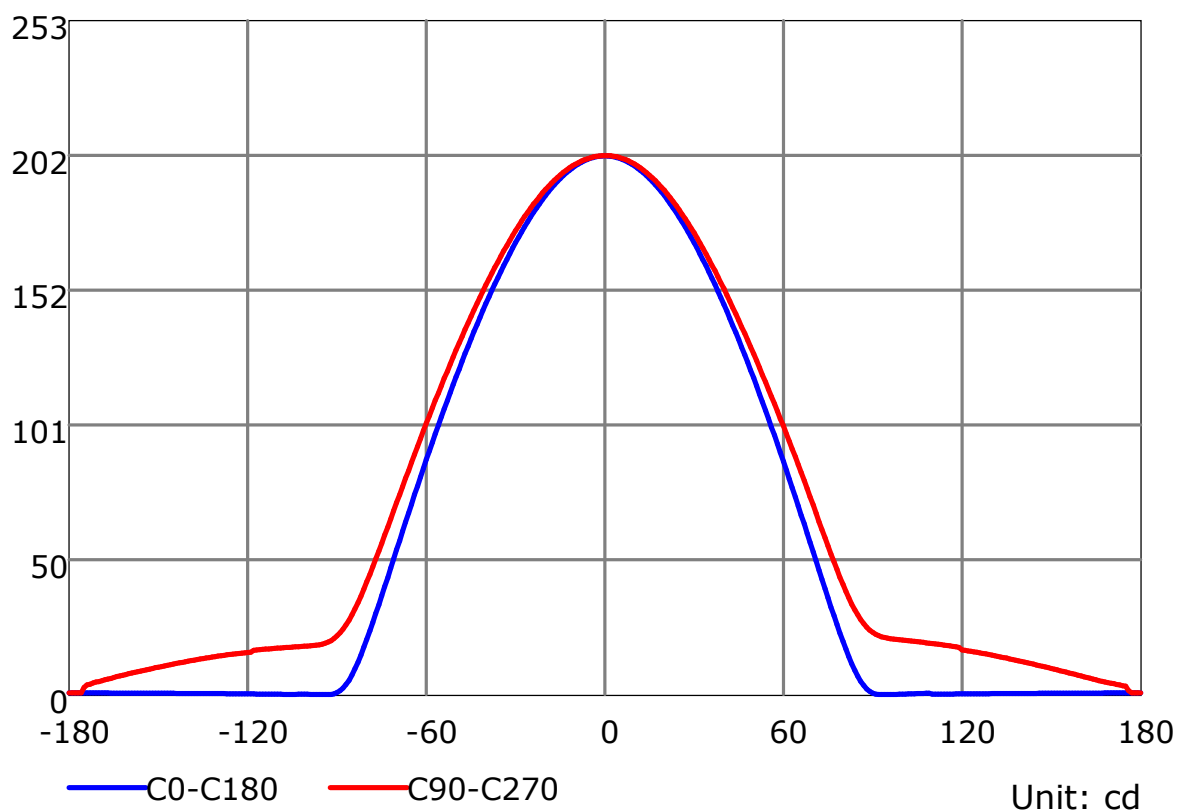
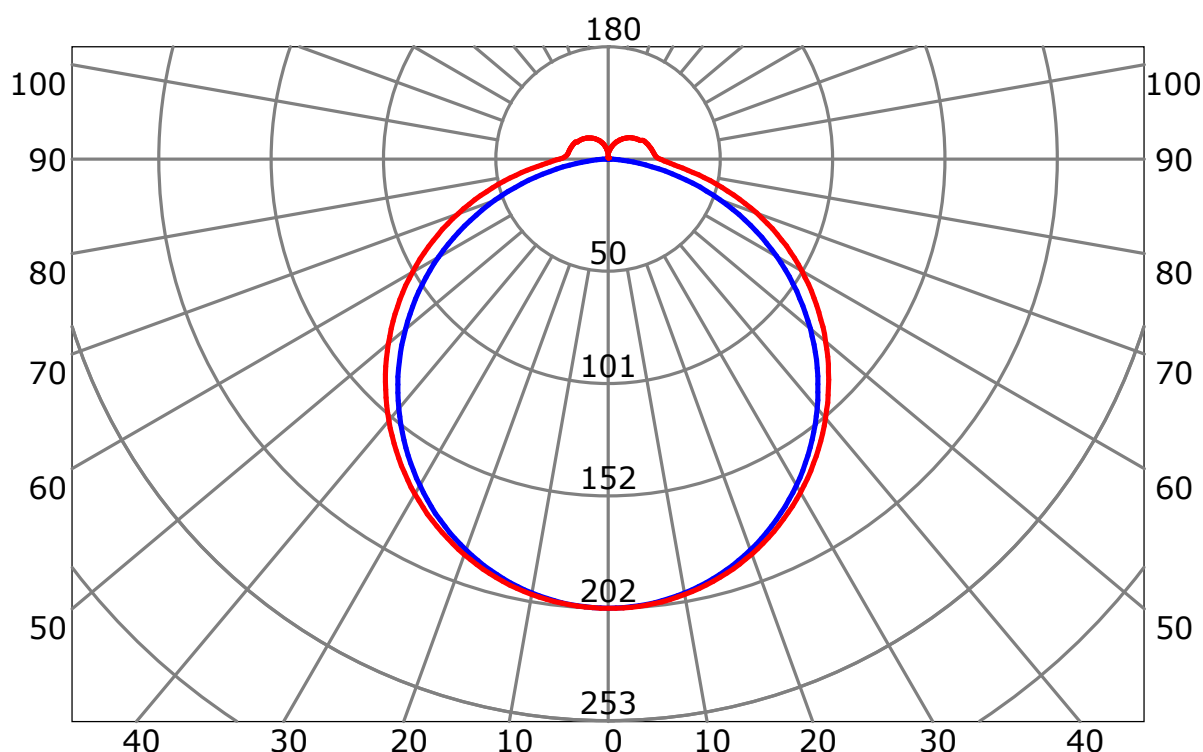
Test Device: GPM-1800B

Distance: 7.792 m

Humidity:

Inspector:

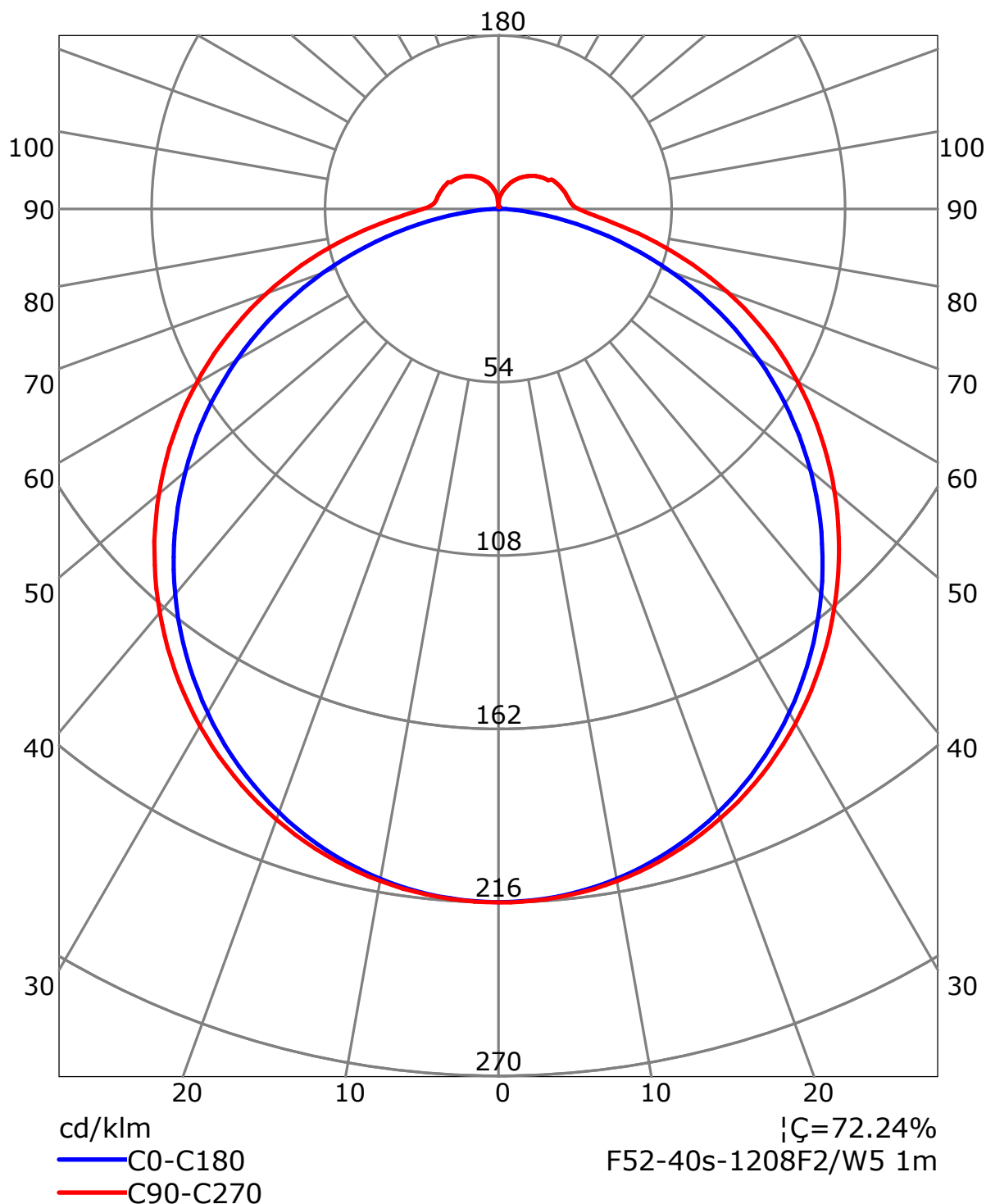
## Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

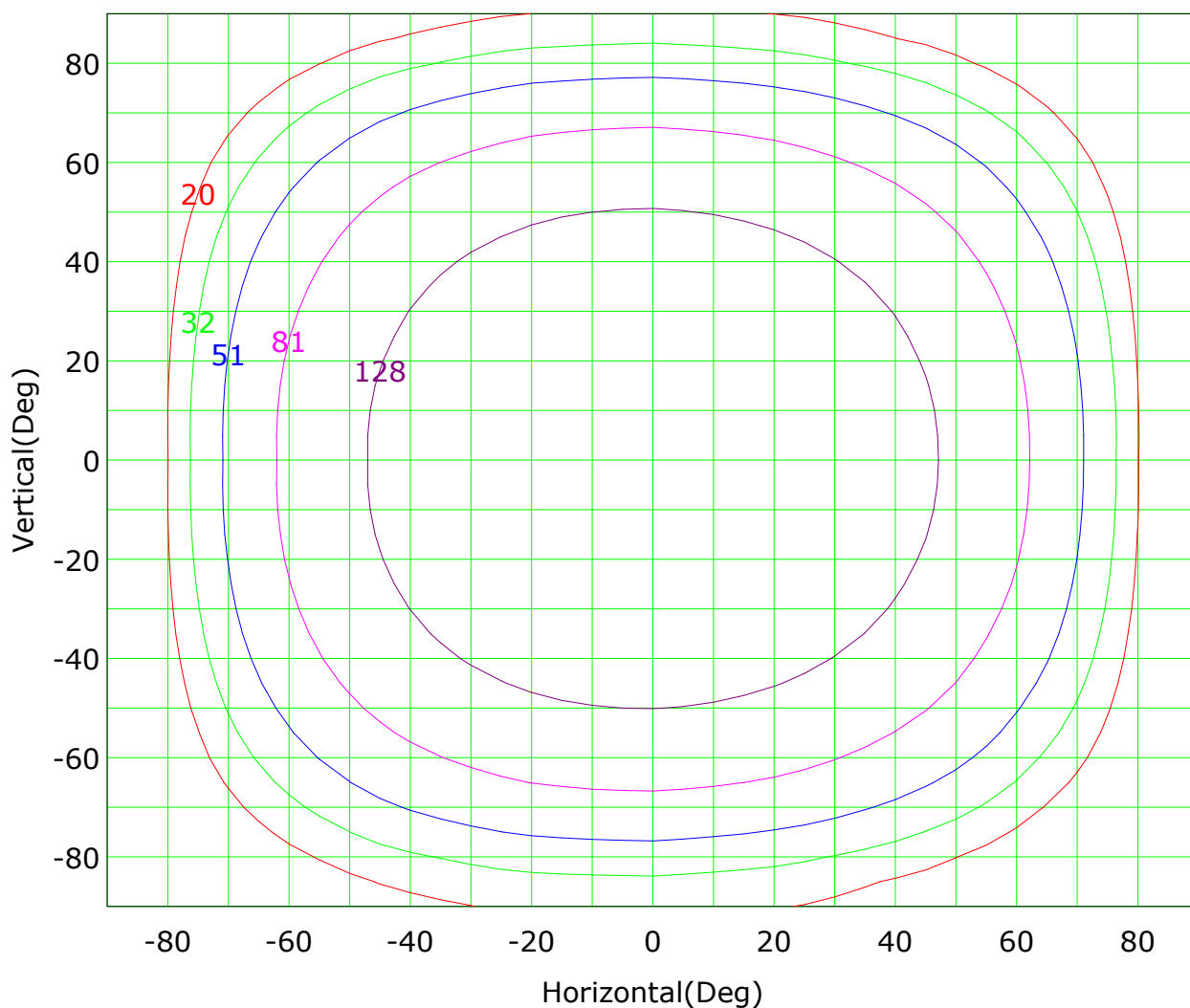
## Luminous Intensity Distribution Curve(cd/klm)



C Plane (°):0.0-360.0: 22.5  
 Test Lab:  
 Test Type: TYPE C  
 Temperature:  
 Operator:

Gamma Plane (°):0.0-180.0:1.0  
 Test Device: GPM-1800B  
 Distance: 7.792 m  
 Humidity:  
 Inspector:

## Isocandela (rectangle)



Imax (100%): 203 cd

|         |        |         |        |
|---------|--------|---------|--------|
| ( 10%): | 20 cd  | ( 16%): | 32 cd  |
| ( 25%): | 51 cd  | ( 40%): | 81 cd  |
| ( 63%): | 128 cd | (100%): | 203 cd |

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

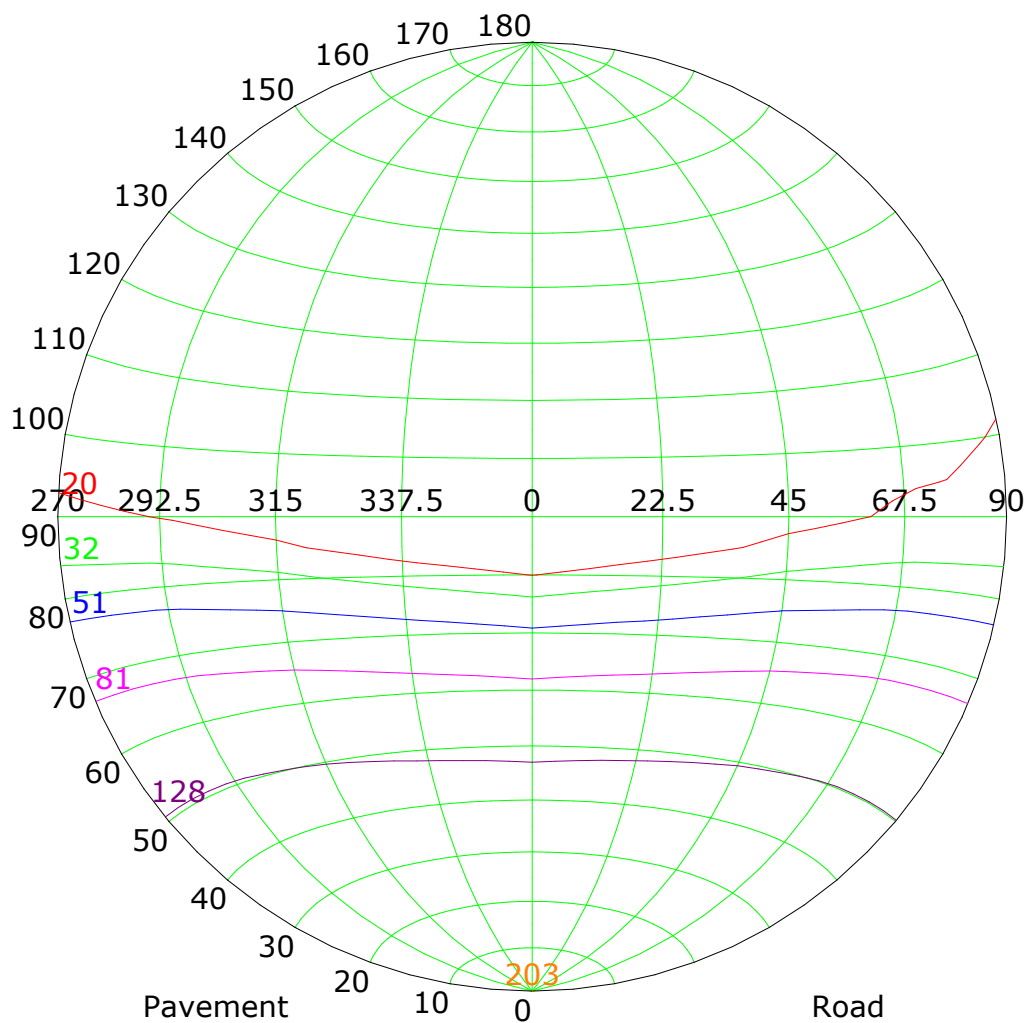
Test Device: GPM-1800B

Distance: 7.792 m

Humidity:

Inspector:

## Isocandela (sphere)



Imax (100%): 203 cd

|         |        |         |        |
|---------|--------|---------|--------|
| ( 10%): | 20 cd  | ( 16%): | 32 cd  |
| ( 25%): | 51 cd  | ( 40%): | 81 cd  |
| ( 63%): | 128 cd | (100%): | 203 cd |

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

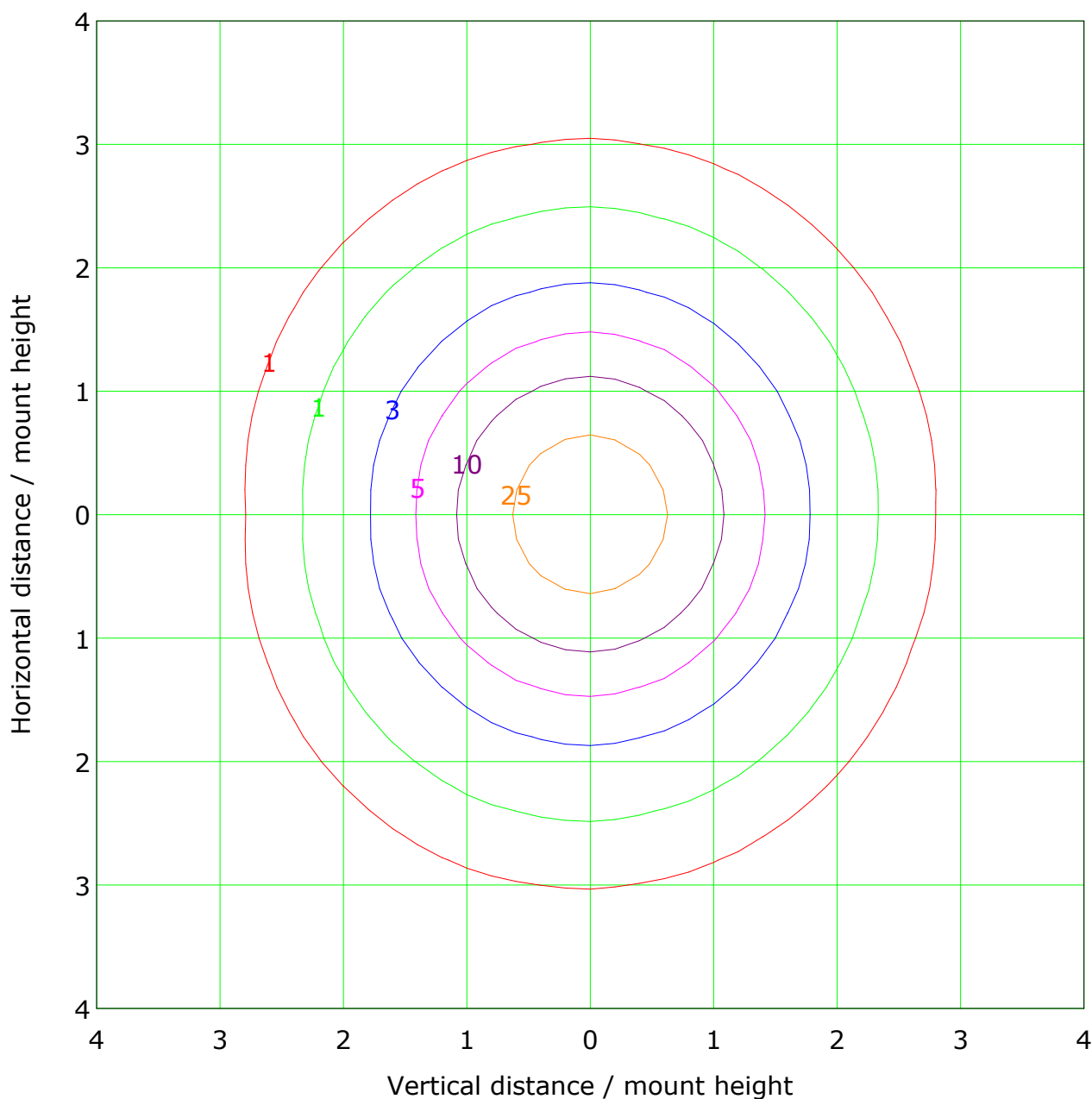
Test Device: GPM-1800B

Distance: 7.792 m

Humidity:

Inspector:

## IsoLux Plot



|                       |         |                        |         |
|-----------------------|---------|------------------------|---------|
| Mounting Height: 2.0m |         | Max Lux(100%): 50.7 lx |         |
| — ( 1%):              | 0.5 lx  | — ( 2%):               | 1.0 lx  |
| — ( 5%):              | 2.5 lx  | — ( 10%):              | 5.1 lx  |
| — ( 20%):             | 10.1 lx | — ( 50%):              | 25.4 lx |
| — (100%):             | 50.7 lx |                        |         |

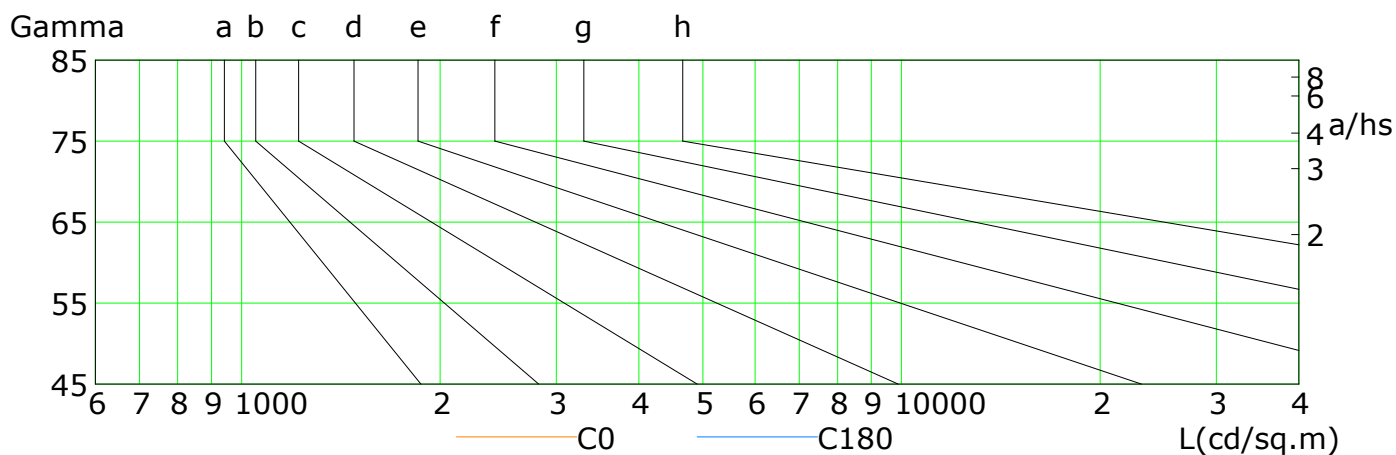
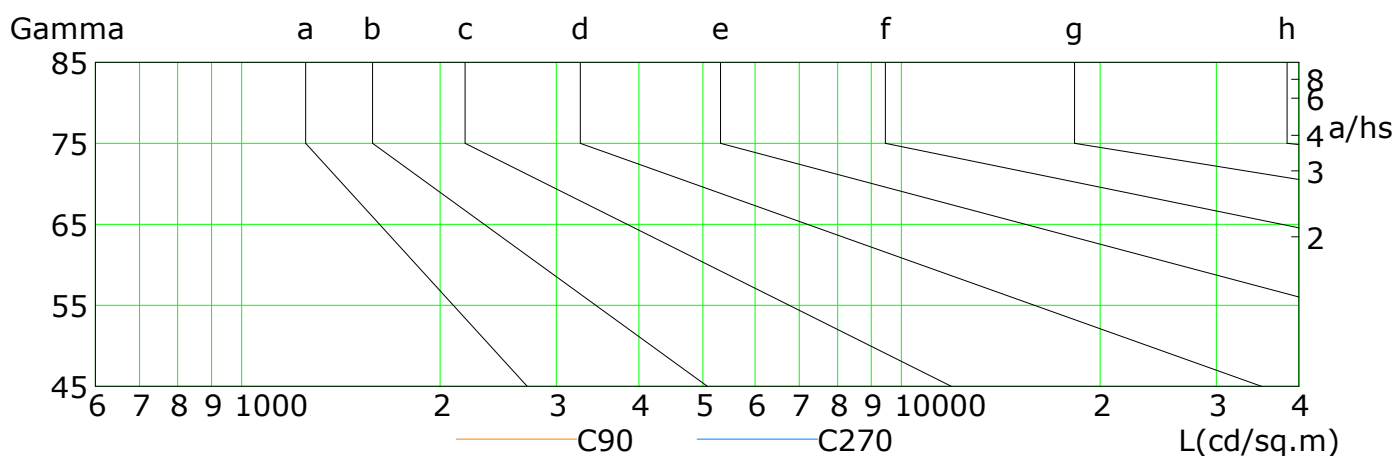
C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

## Lum Limit Curve

| Dazzle | Quality | Illuminance (lx) |      |      |       |       |       |       |       |
|--------|---------|------------------|------|------|-------|-------|-------|-------|-------|
| 1.15   | A       | 2000             | 1000 | 500  | <=300 |       |       |       |       |
| 1.50   | B       |                  | 2000 | 1000 | 500   | <=300 |       |       |       |
| 1.85   | C       |                  |      | 2000 | 1000  | 500   | <=300 |       |       |
| 2.20   | D       |                  |      |      | 2000  | 1000  | 500   | <=300 |       |
| 2.55   | E       |                  |      |      |       | 2000  | 1000  | 500   | <=300 |

a b c d e f g h

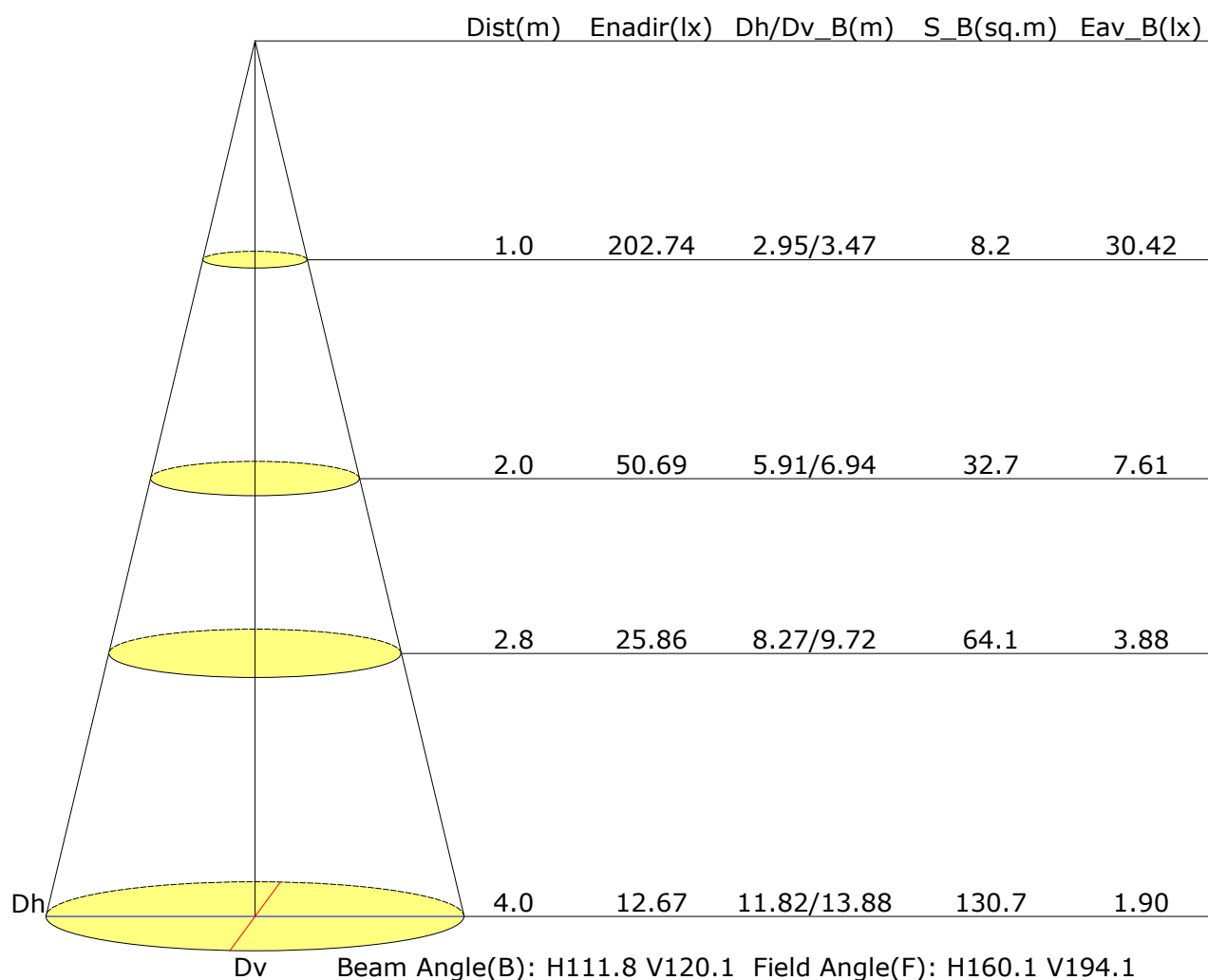


| L(cd/sq.m) | G45 | G50 | G55 | G60 | G65 | G70 | G75 | G80 | G85 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| C0         | 134 | 119 | 104 | 88  | 71  | 54  | 36  | 20  | 7   |
| C90        | 141 | 128 | 115 | 101 | 87  | 71  | 56  | 42  | 30  |
| C180       | 134 | 120 | 104 | 89  | 72  | 54  | 37  | 21  | 7   |
| C270       | 142 | 130 | 116 | 102 | 87  | 72  | 57  | 42  | 30  |

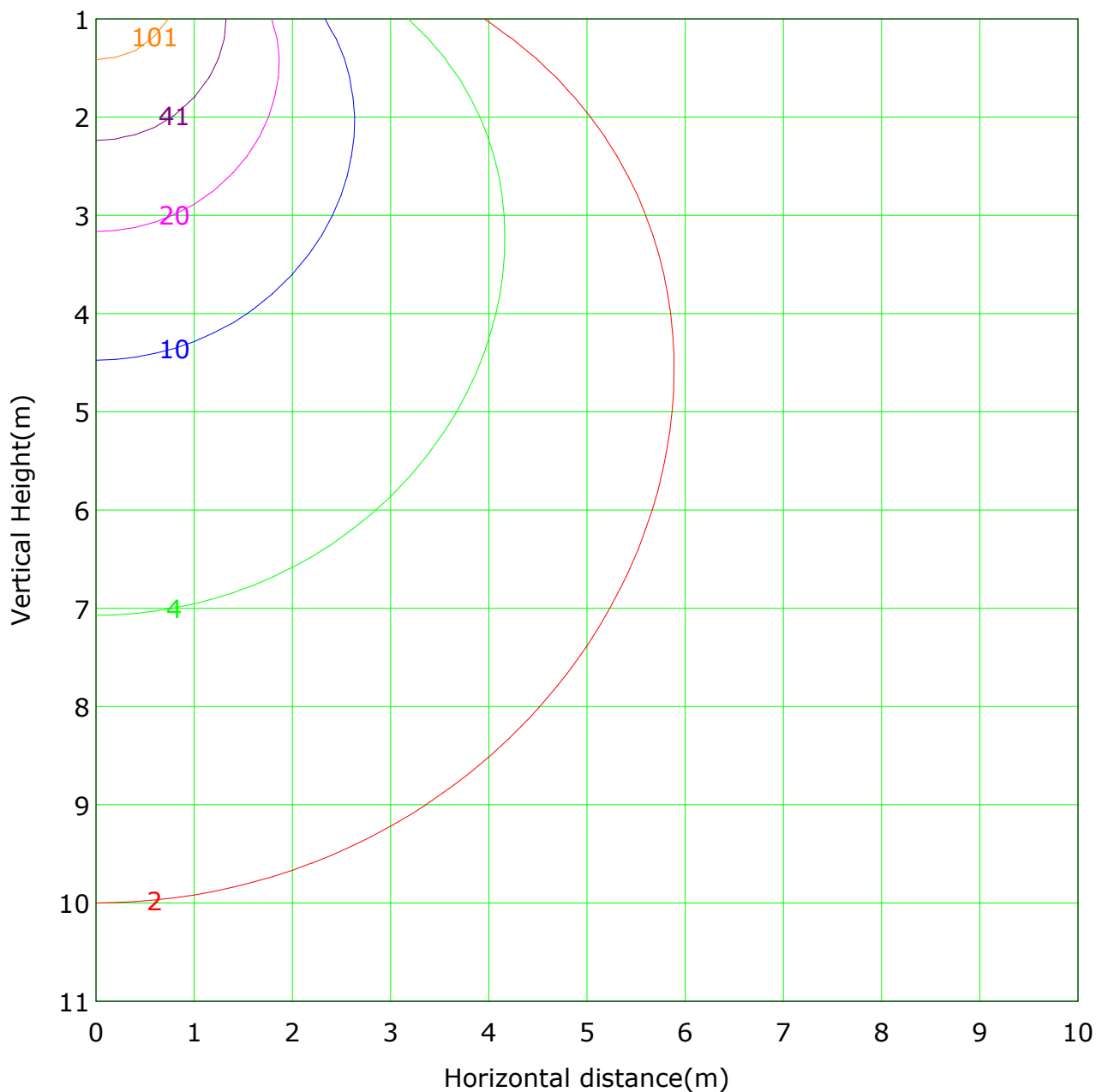
C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

## Illuminance at a Distance



## Vertical IsoLux Plot



Lowest(m): 1.0m    Highest(m): 11.0m    Max Lux: 202.7 lx

|                    |                    |
|--------------------|--------------------|
| — ( 1%): 2.0 lx    | — ( 2%): 4.1 lx    |
| — ( 5%): 10.1 lx   | — ( 10%): 20.3 lx  |
| — ( 20%): 40.5 lx  | — ( 50%): 101.4 lx |
| — (100%): 202.7 lx |                    |

Report No.:

Test Time: 08/10/2024 09:42

## Luminaire Property

Luminaire Manufacturer: Lighting Line

Luminaire Description: LLP-SL13-0222+LLP-02-FS

Lamp Description: F52-40s-1208F2/W5 1m Number of Lamps: 1

Lumens per Lamp: 936

Voltage: 24.0 V

Current: 0.369 A

Power: 8.84 W

Power Factor: 1.000

## Photometric Results

CIE Class: Semi-Direct

Measurement Flux: 707.9 lm

Downward Ratio: 67.98%

Total Rated Lamp Lumens: 936.0 lm

Efficiency: 75.63%

Upward Ratio: 7.65%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 220.0, 163.0, 180.4, 180.9

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 119.7, 108.7, 114.0, 114.1

Luminaire Efficacy Rating (LER): 80.13

Central Intensity: 208.19 cd

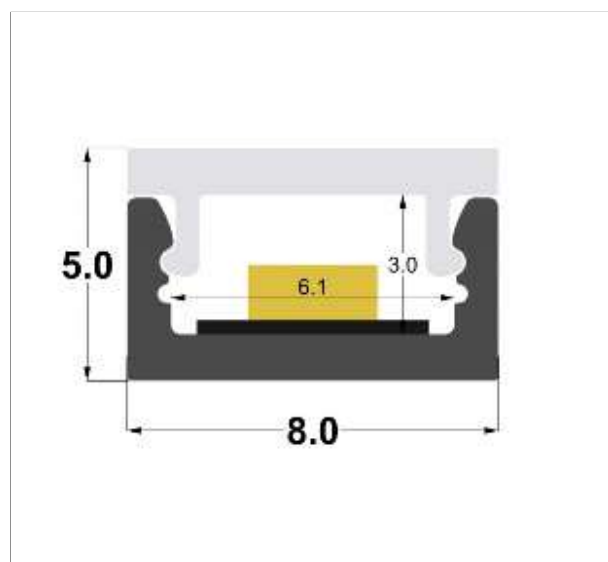
Max. Intensity: 210.87 cd

Pos of Max. Intensity: H157.5 V1

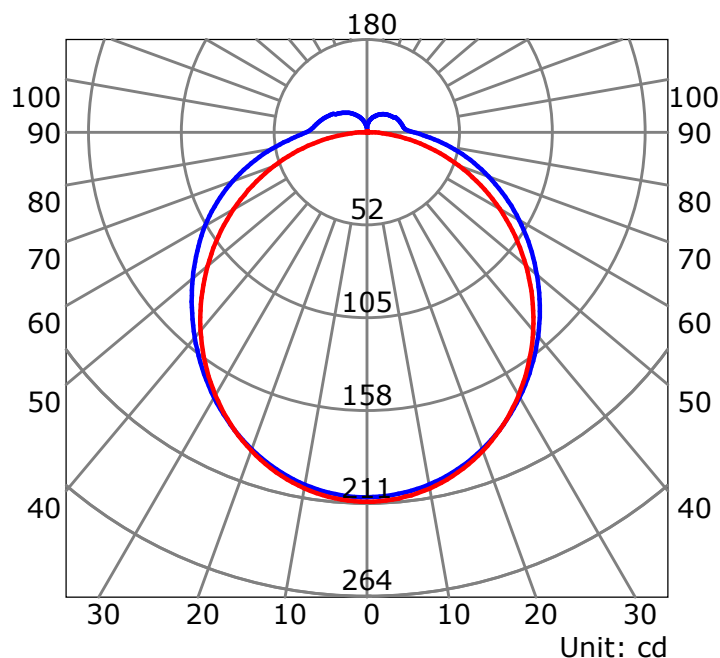
S/MH(C0/C180): 1.25

S/MH(C90/C270): 1.22

Picture Of Luminaire



Luminous Intensity Distribution Curve



— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

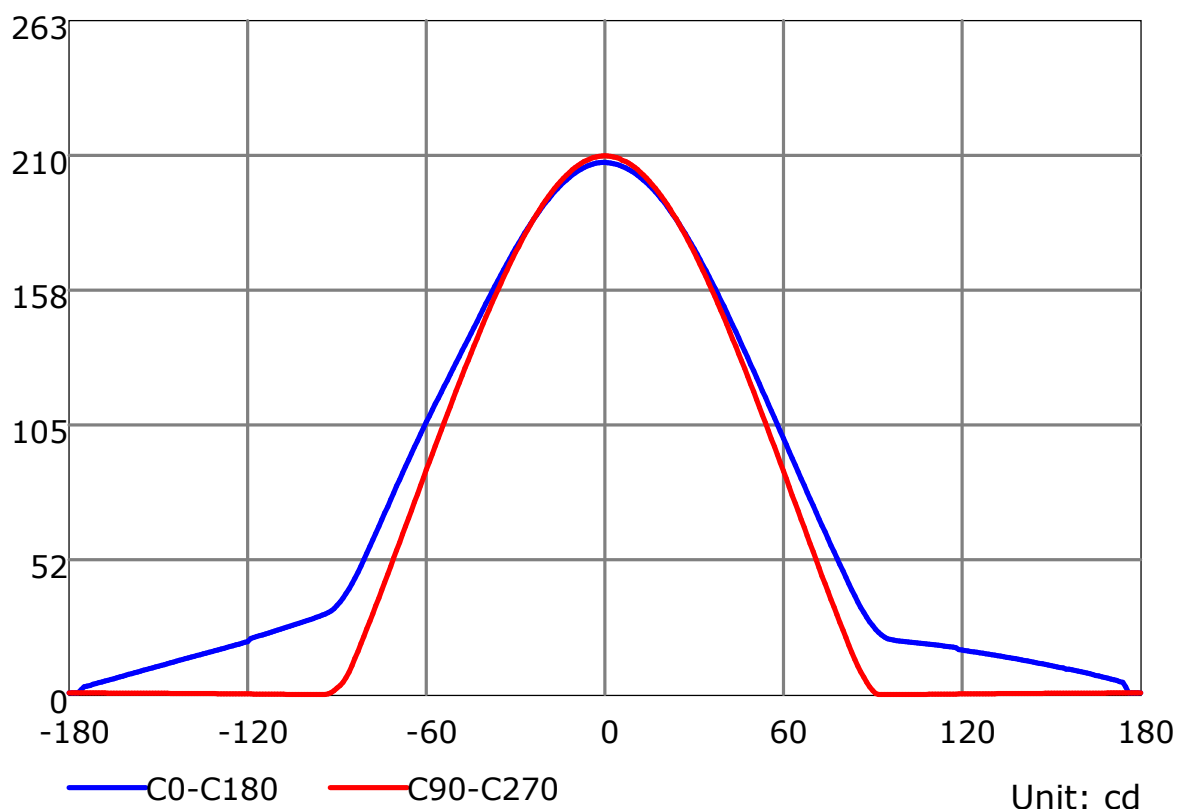
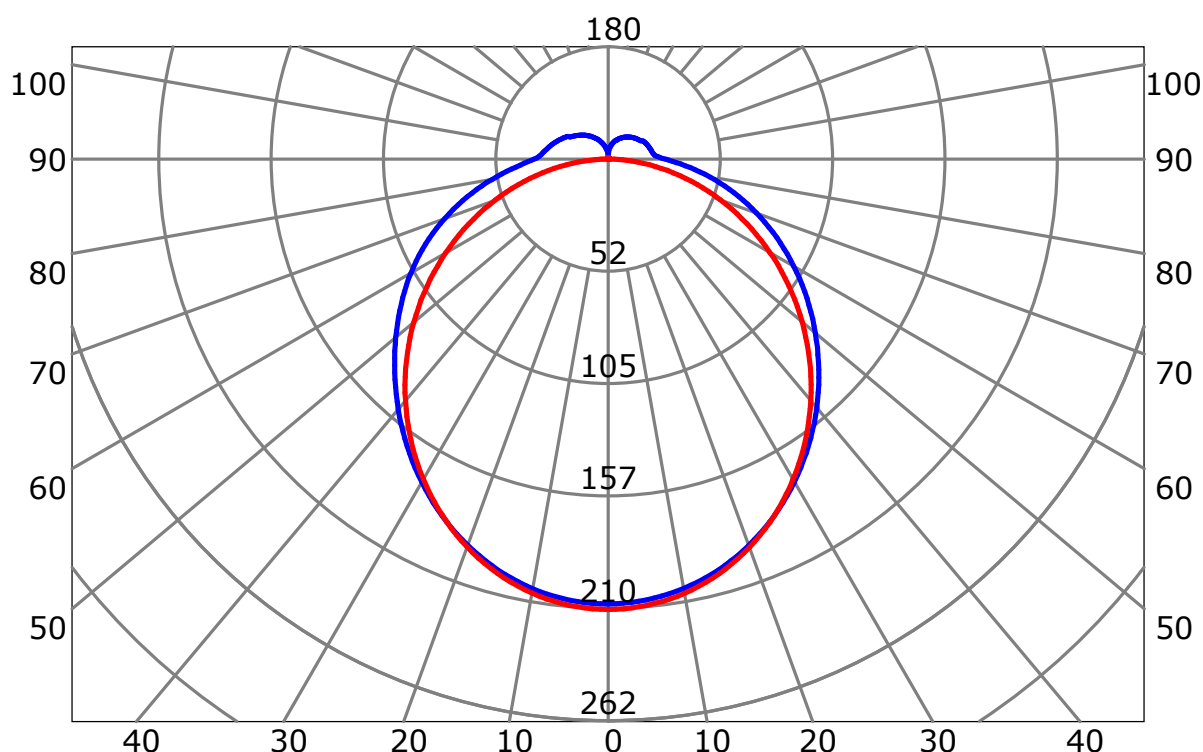
Test Device: GPM-1800B

Distance: 7.792 m

Humidity:

Inspector:

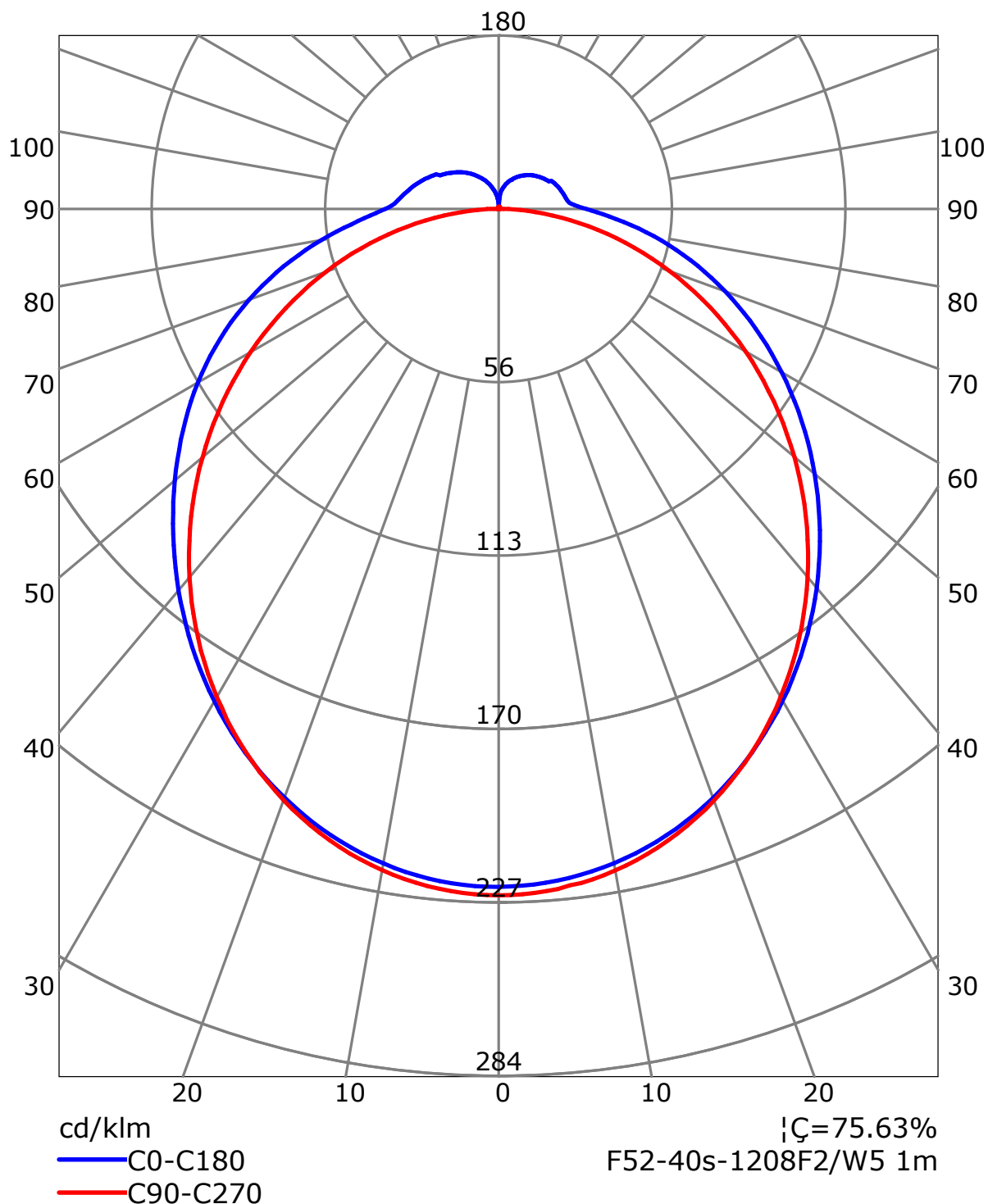
## Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

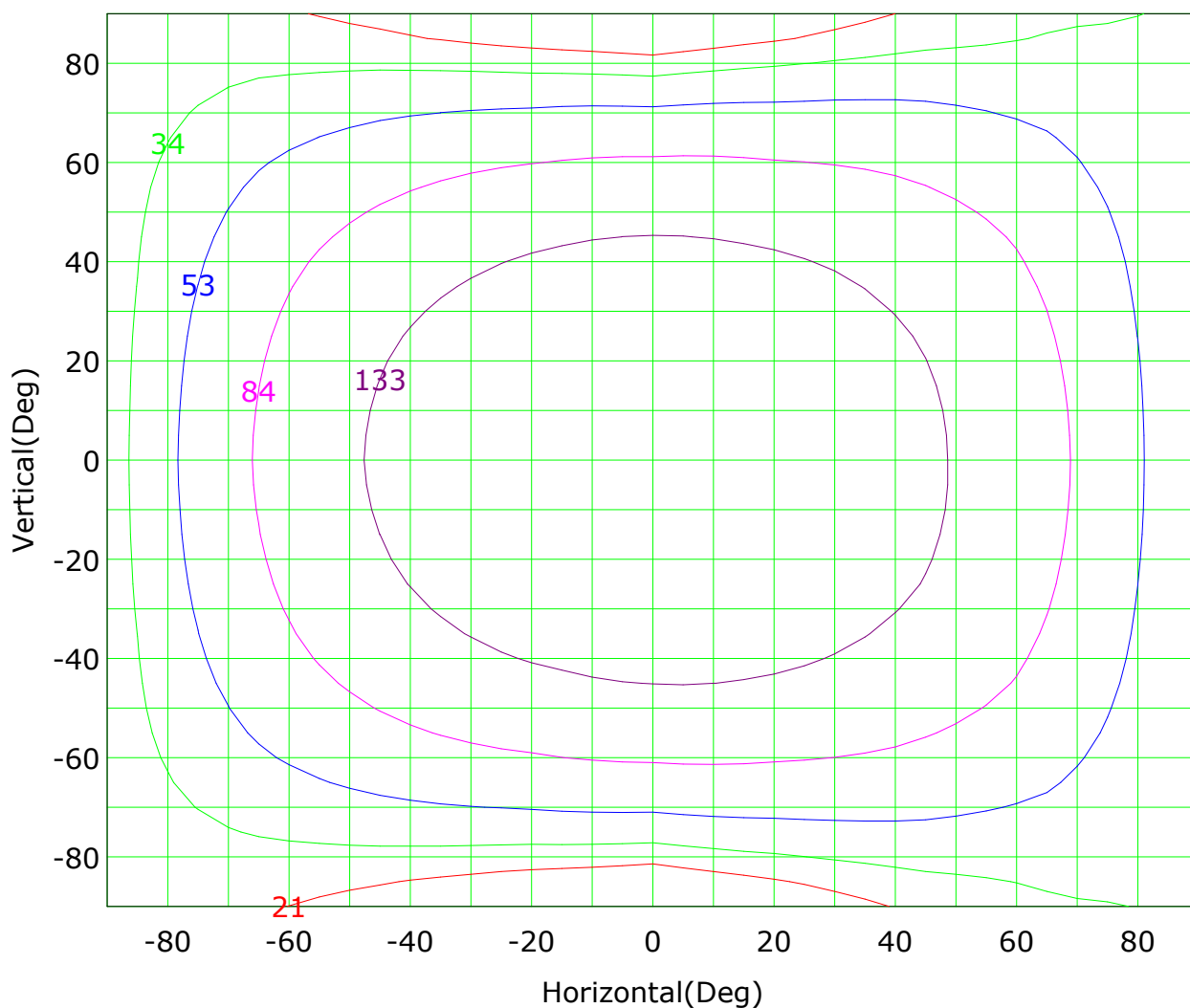
## Luminous Intensity Distribution Curve(cd/klm)



C Plane (°):0.0-360.0: 22.5  
 Test Lab:  
 Test Type: TYPE C  
 Temperature:  
 Operator:

Gamma Plane (°):0.0-180.0:1.0  
 Test Device: GPM-1800B  
 Distance: 7.792 m  
 Humidity:  
 Inspector:

## Isocandela (rectangle)



Imax (100%): 211 cd

|         |        |         |        |
|---------|--------|---------|--------|
| ( 10%): | 21 cd  | ( 16%): | 34 cd  |
| ( 25%): | 53 cd  | ( 40%): | 84 cd  |
| ( 63%): | 133 cd | (100%): | 211 cd |

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

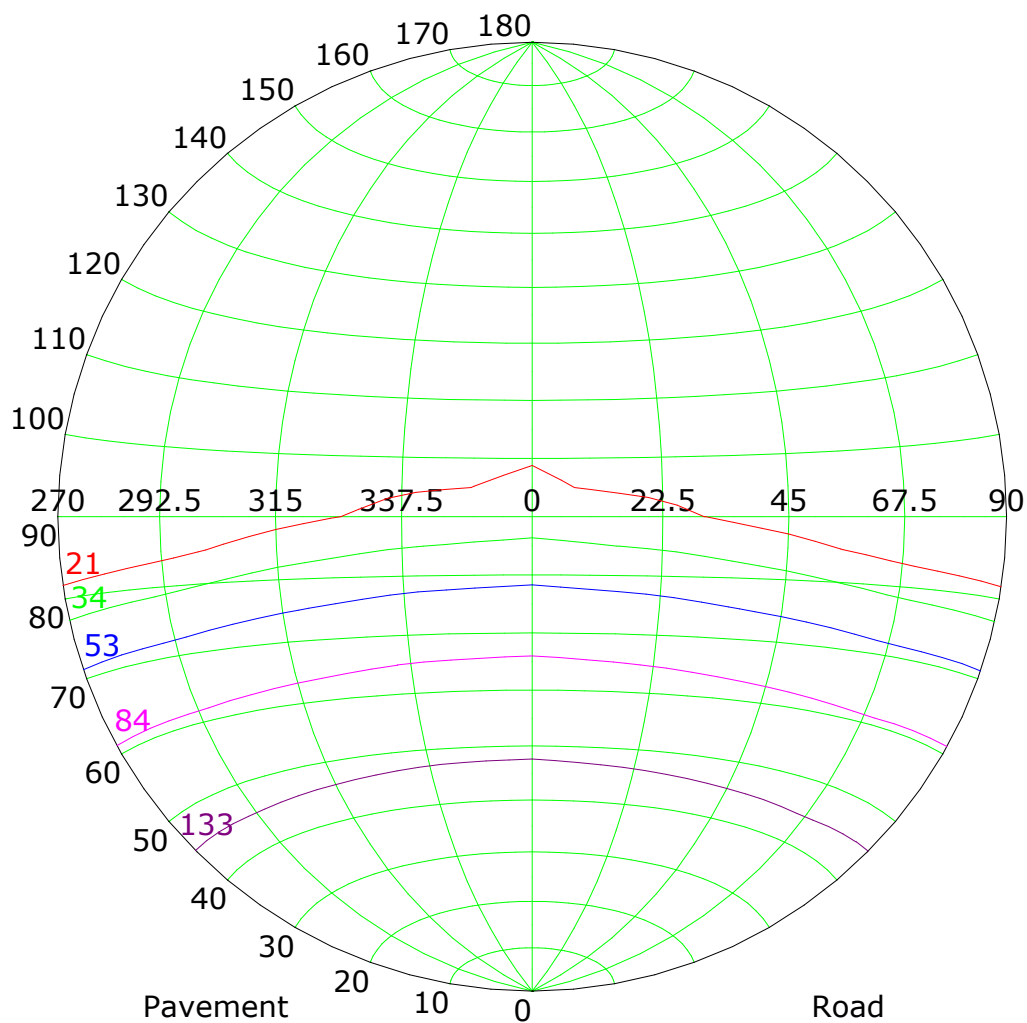
Test Device: GPM-1800B

Distance: 7.792 m

Humidity:

Inspector:

## Isocandela (sphere)



Imax (100%): 211 cd

|         |        |         |        |
|---------|--------|---------|--------|
| ( 10%): | 21 cd  | ( 16%): | 34 cd  |
| ( 25%): | 53 cd  | ( 40%): | 84 cd  |
| ( 63%): | 133 cd | (100%): | 211 cd |

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

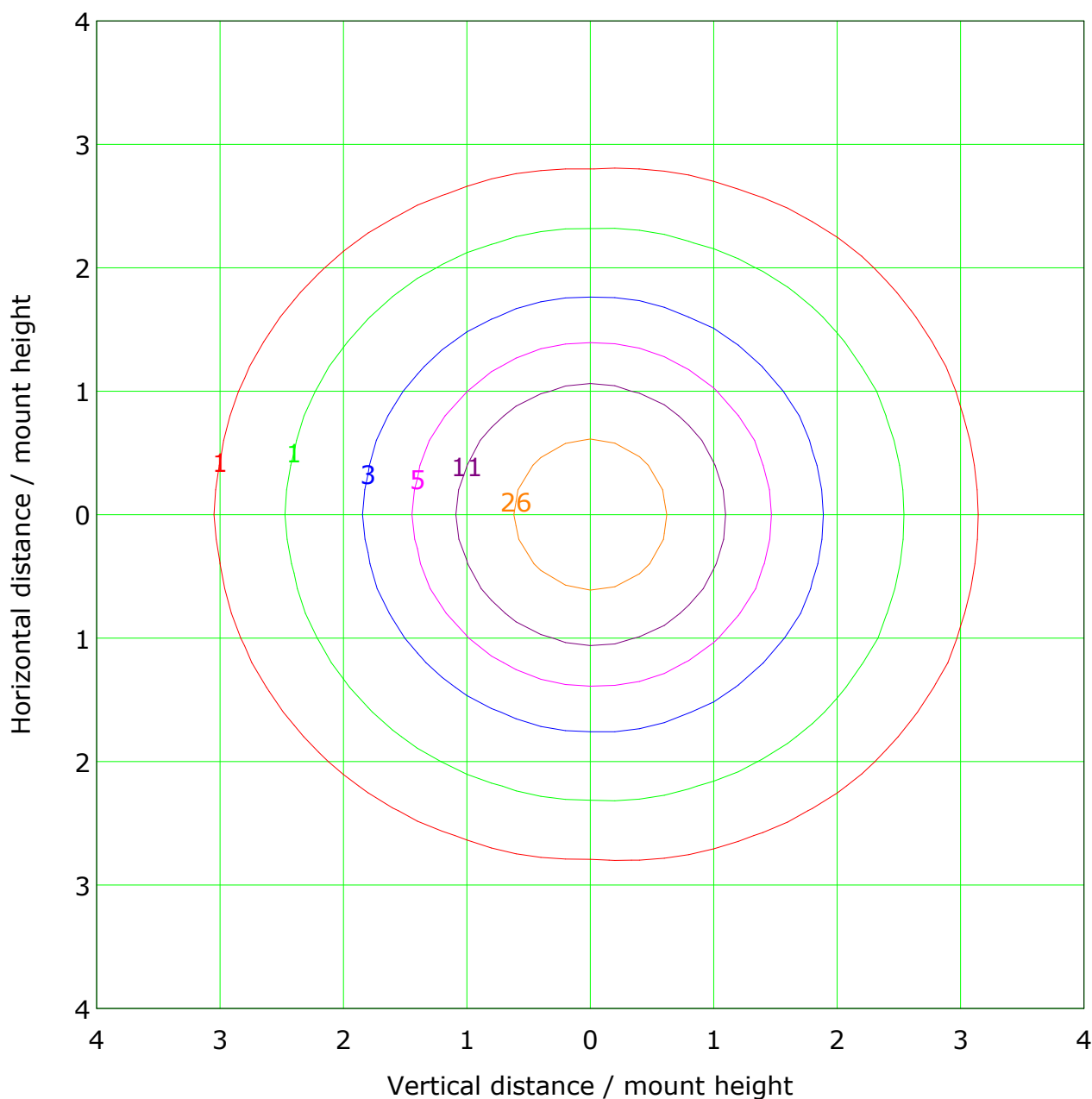
Test Device: GPM-1800B

Distance: 7.792 m

Humidity:

Inspector:

## IsoLux Plot



|                       |         |                        |         |
|-----------------------|---------|------------------------|---------|
| Mounting Height: 2.0m |         | Max Lux(100%): 52.7 lx |         |
| — ( 1%):              | 0.5 lx  | — ( 2%):               | 1.1 lx  |
| — ( 5%):              | 2.6 lx  | — ( 10%):              | 5.3 lx  |
| — ( 20%):             | 10.5 lx | — ( 50%):              | 26.4 lx |
| — (100%):             | 52.7 lx |                        |         |

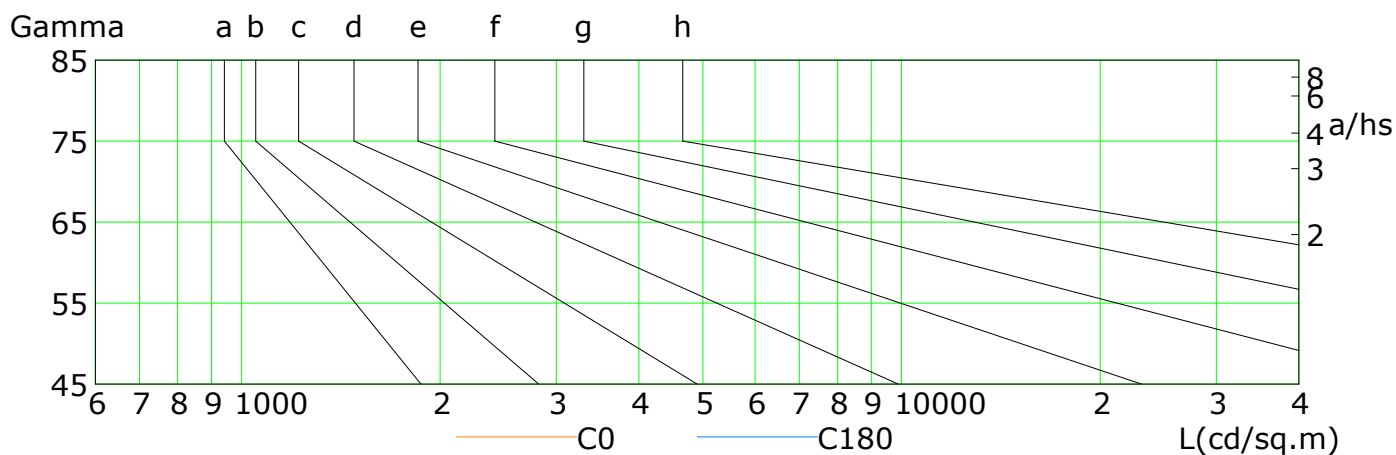
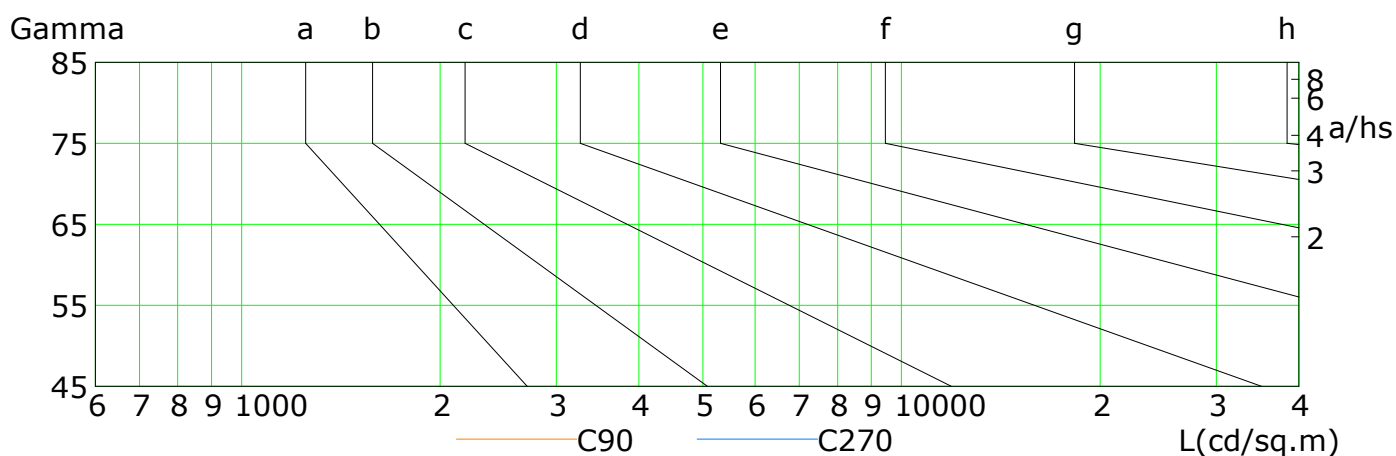
C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

## Lum Limit Curve

| Dazzle | Quality | Illuminance (lx) |      |      |       |       |       |       |       |
|--------|---------|------------------|------|------|-------|-------|-------|-------|-------|
| 1.15   | A       | 2000             | 1000 | 500  | <=300 |       |       |       |       |
| 1.50   | B       |                  | 2000 | 1000 | 500   | <=300 |       |       |       |
| 1.85   | C       |                  |      | 2000 | 1000  | 500   | <=300 |       |       |
| 2.20   | D       |                  |      |      | 2000  | 1000  | 500   | <=300 |       |
| 2.55   | E       |                  |      |      |       | 2000  | 1000  | 500   | <=300 |

a b c d e f g h

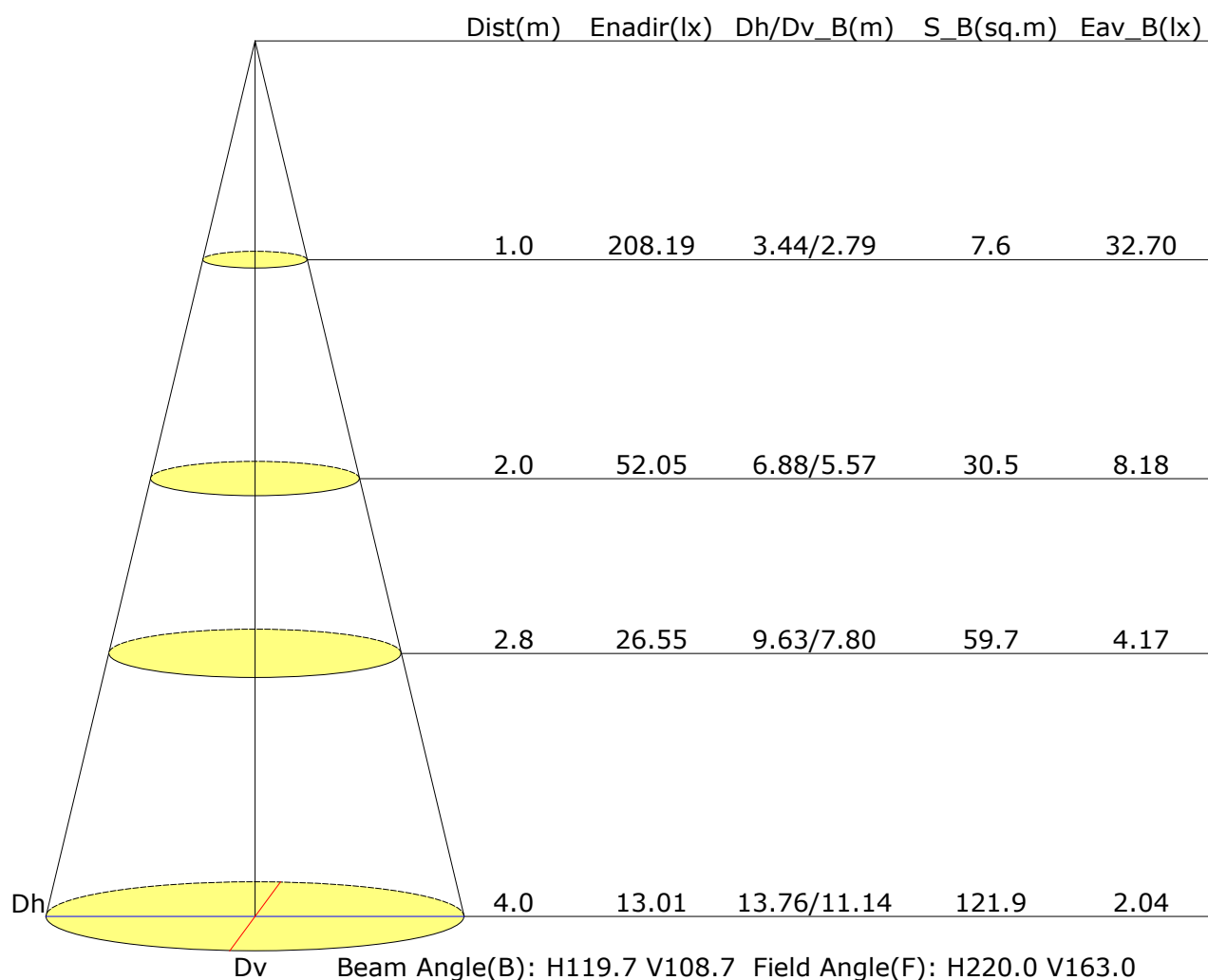


| L(cd/sq.m) | G45 | G50 | G55 | G60 | G65 | G70 | G75 | G80 | G85 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| C0         | 140 | 127 | 114 | 100 | 87  | 74  | 61  | 48  | 36  |
| C90        | 133 | 119 | 103 | 87  | 72  | 56  | 40  | 25  | 11  |
| C180       | 141 | 130 | 118 | 107 | 94  | 82  | 68  | 55  | 43  |
| C270       | 134 | 119 | 103 | 88  | 72  | 56  | 41  | 26  | 11  |

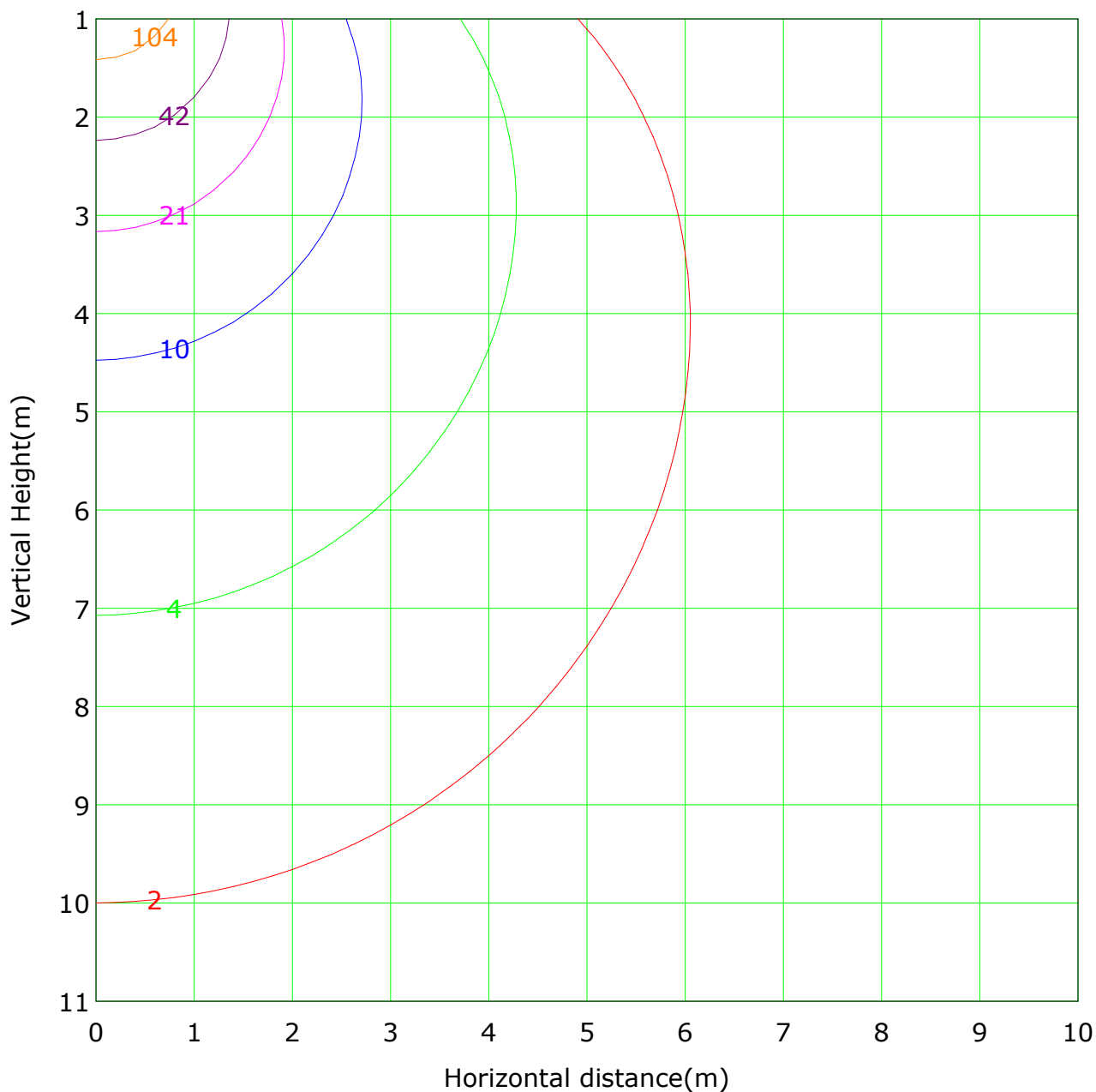
C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-180.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

## Illuminance at a Distance



## Vertical IsoLux Plot



Lowest(m): 1.0m    Highest(m): 11.0m    Max Lux: 208.2 lx

|                  |                  |
|------------------|------------------|
| ( 1%): 2.1 lx    | ( 2%): 4.2 lx    |
| ( 5%): 10.4 lx   | ( 10%): 20.8 lx  |
| ( 20%): 41.6 lx  | ( 50%): 104.1 lx |
| (100%): 208.2 lx |                  |

Report No.:

Test Time: 08/10/2024 10:46

## Luminaire Property

Luminaire Manufacturer: Lighting Line

Luminaire Description: LLP-SL13-0222+LLP-22-FM

Lamp Description: F52-40s-1208F2/W5 1m Number of Lamps: 1

Lumens per Lamp: 936

Voltage: 24.0 V

Current: 0.370 A

Power: 8.88 W

Power Factor: 1.000

## Photometric Results

CIE Class: Direct

Measurement Flux: 694.8 lm

Downward Ratio: 74.23%

Total Rated Lamp Lumens: 936.0 lm

Efficiency: 74.23%

Upward Ratio: 0.00%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 162.9, 160.2, 161.7, 161.8

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 112.6, 112.4, 112.5, 112.5

Luminaire Efficacy Rating (LER): 78.29

Central Intensity: 243.37 cd

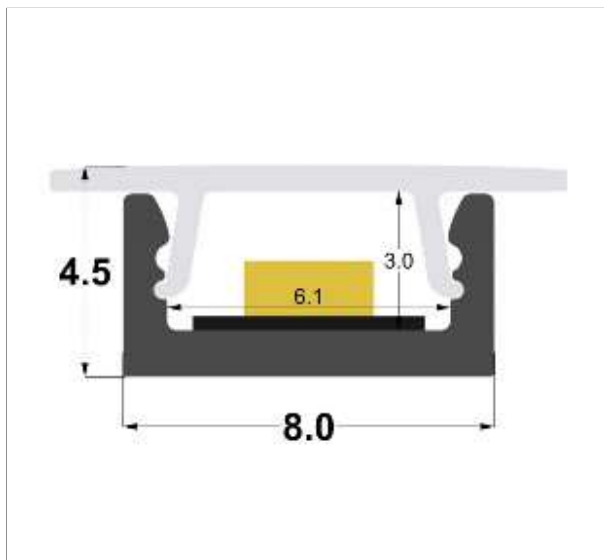
Max. Intensity: 243.42 cd

Pos of Max. Intensity: H180 V1

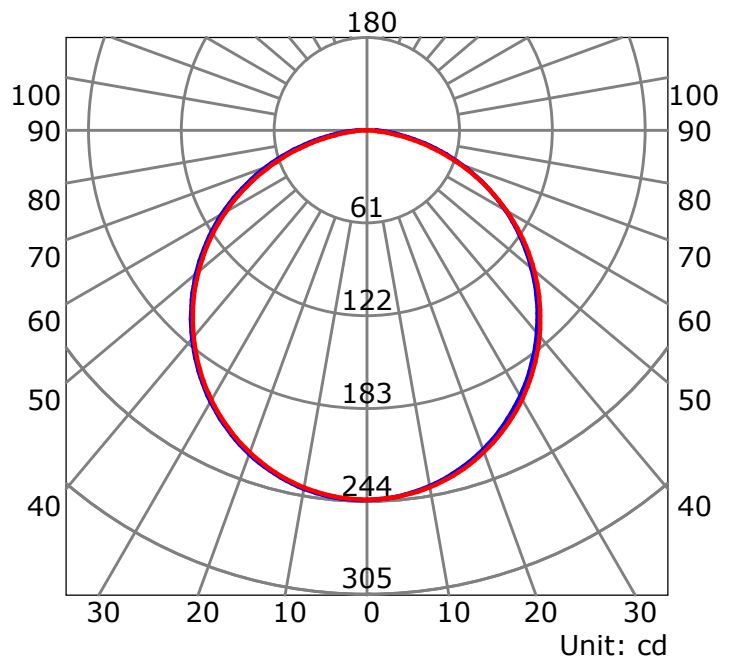
S/MH(C0/C180): 1.25

S/MH(C90/C270): 1.25

Picture Of Luminaire



Luminous Intensity Distribution Curve



— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-90.0:1.0

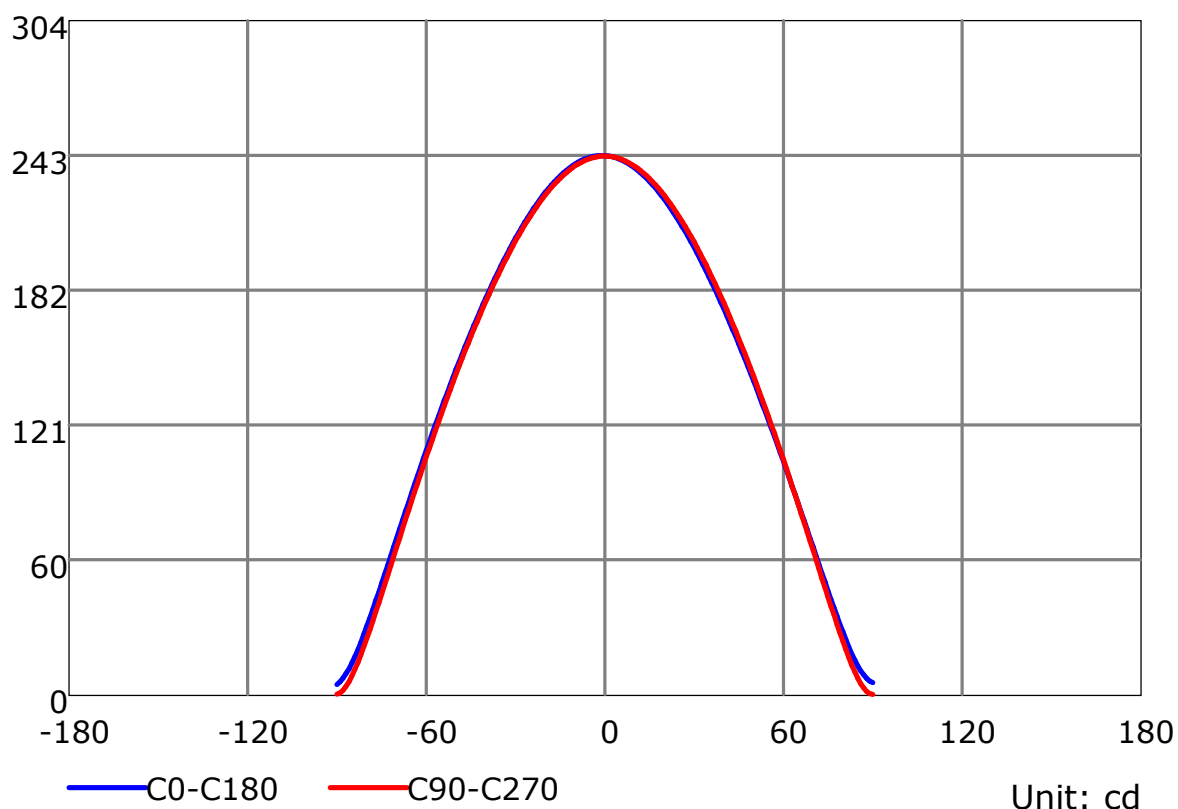
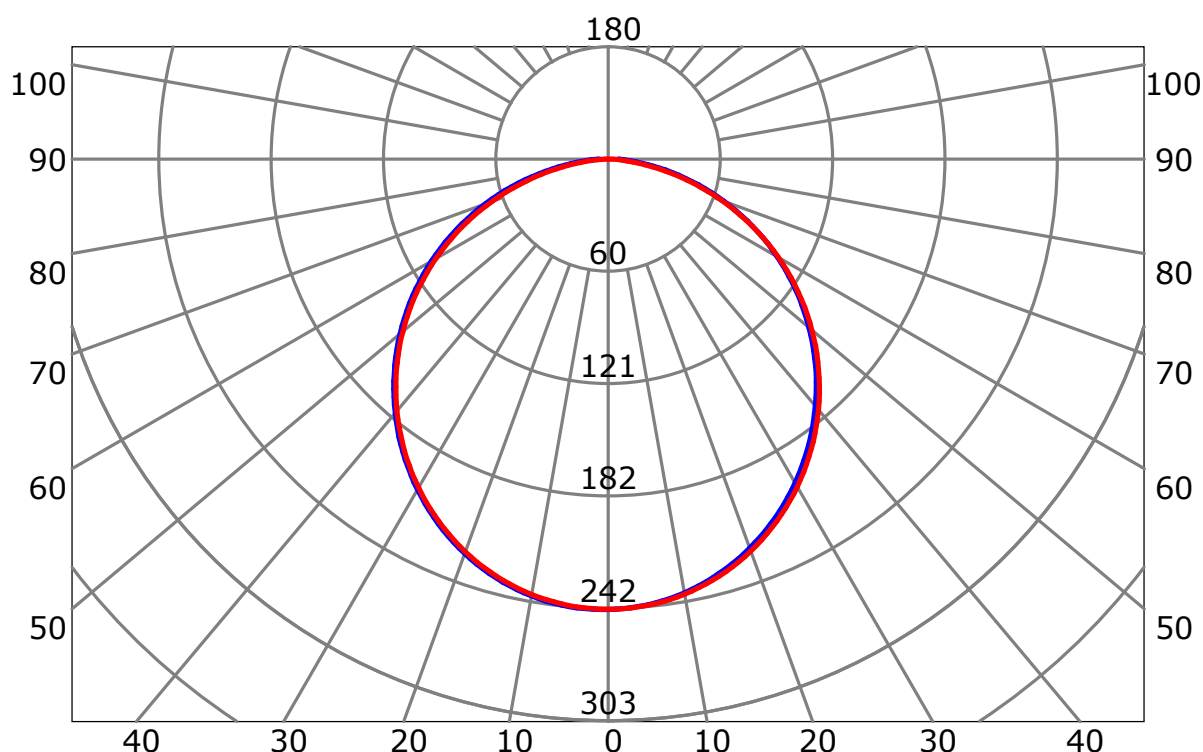
Test Device: GPM-1800B

Distance: 7.792 m

Humidity:

Inspector:

## Luminous Intensity Distribution Curve

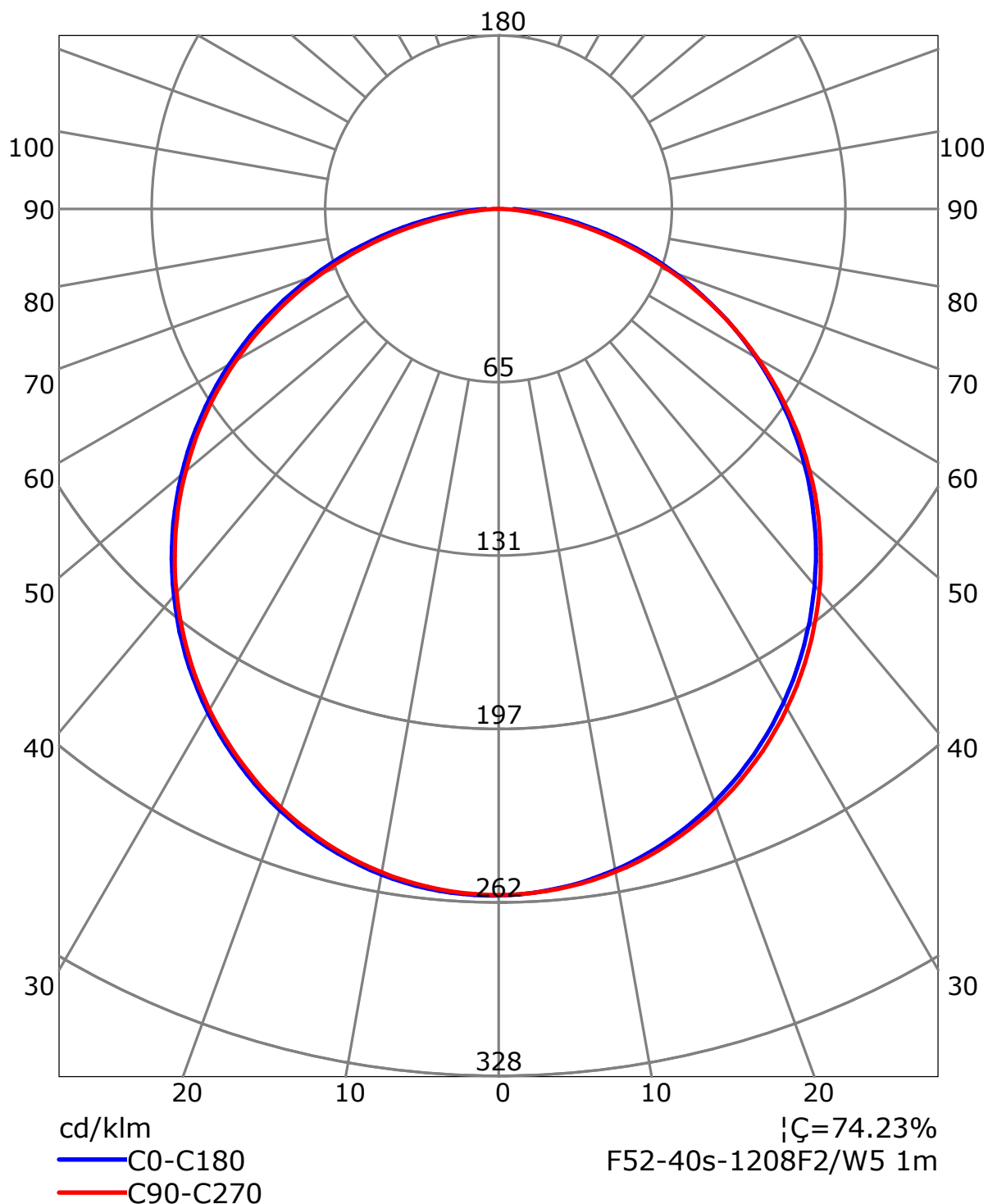


Unit: cd

C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-90.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

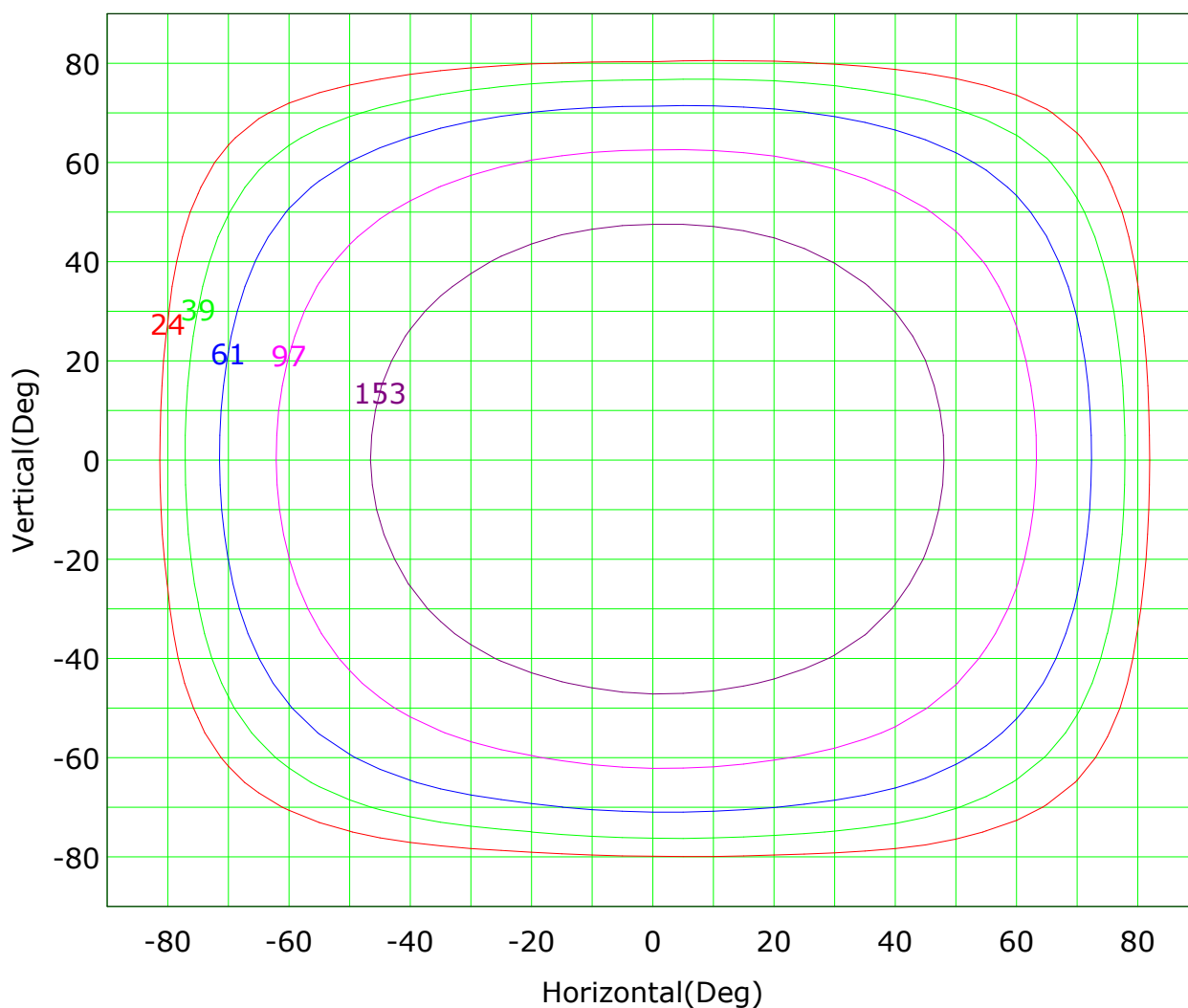
## Luminous Intensity Distribution Curve(cd/klm)



C Plane (°):0.0-360.0: 22.5  
 Test Lab:  
 Test Type: TYPE C  
 Temperature:  
 Operator:

Gamma Plane (°):0.0-90.0:1.0  
 Test Device: GPM-1800B  
 Distance: 7.792 m  
 Humidity:  
 Inspector:

## Isocandela (rectangle)



Imax (100%): 243 cd

|         |        |         |        |
|---------|--------|---------|--------|
| ( 10%): | 24 cd  | ( 16%): | 39 cd  |
| ( 25%): | 61 cd  | ( 40%): | 97 cd  |
| ( 63%): | 153 cd | (100%): | 243 cd |

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-90.0:1.0

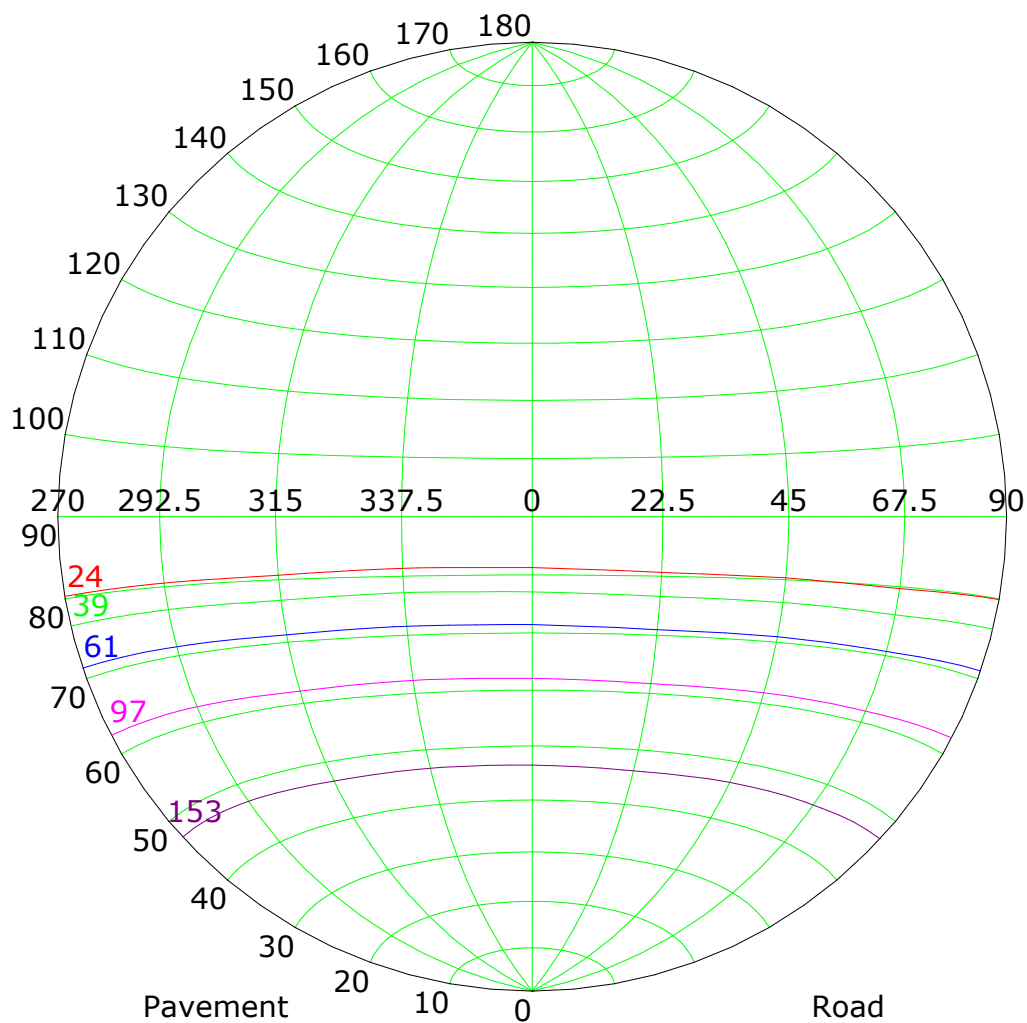
Test Device: GPM-1800B

Distance: 7.792 m

Humidity:

Inspector:

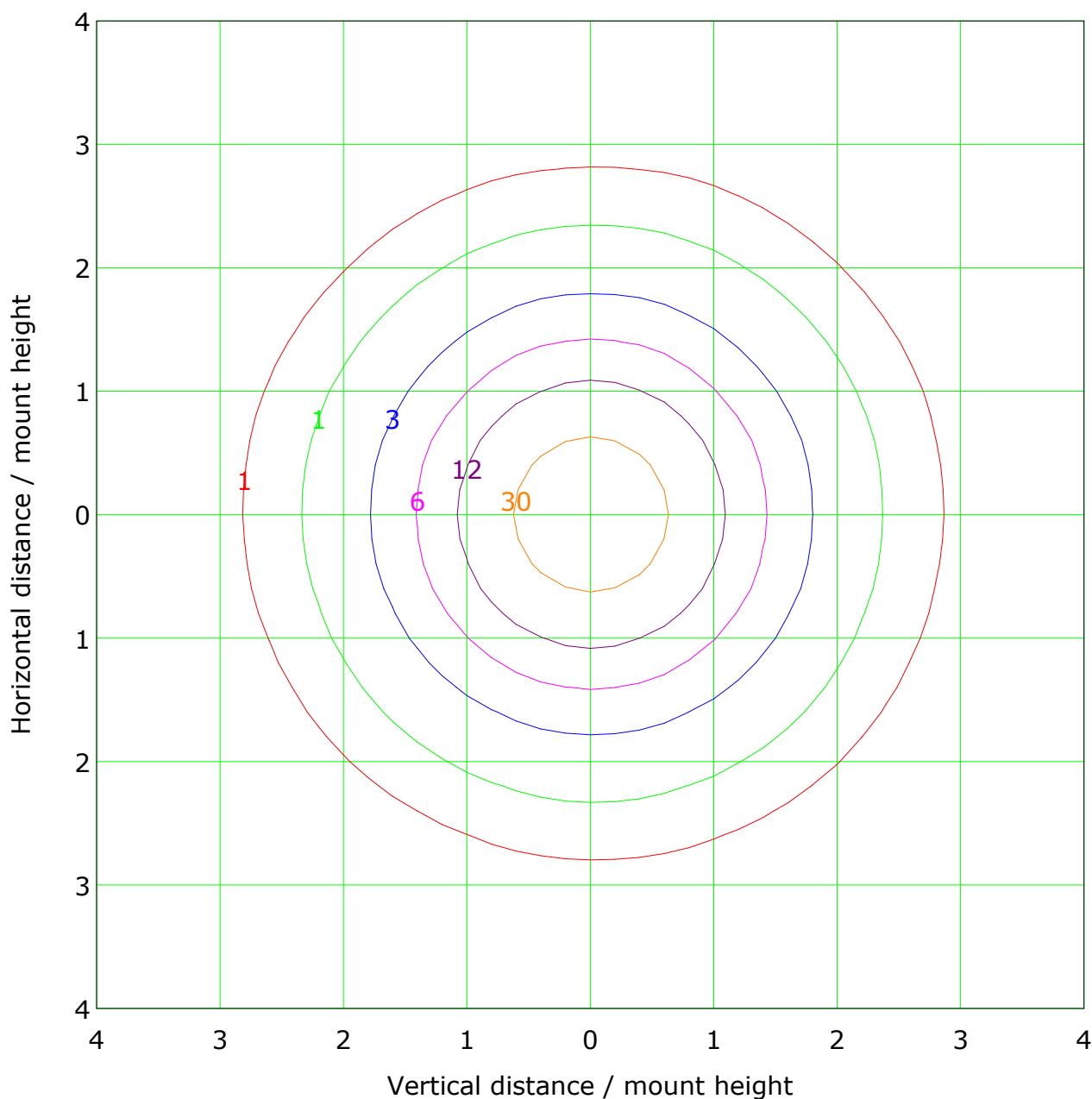
## Isocandela (sphere)



Imax (100%): 243 cd

|         |        |         |        |
|---------|--------|---------|--------|
| ( 10%): | 24 cd  | ( 16%): | 39 cd  |
| ( 25%): | 61 cd  | ( 40%): | 97 cd  |
| ( 63%): | 153 cd | (100%): | 243 cd |

## IsoLux Plot



|                       |         |                        |         |
|-----------------------|---------|------------------------|---------|
| Mounting Height: 2.0m |         | Max Lux(100%): 60.8 lx |         |
| ( 1%):                | 0.6 lx  | ( 2%):                 | 1.2 lx  |
| ( 5%):                | 3.0 lx  | ( 10%):                | 6.1 lx  |
| ( 20%):               | 12.2 lx | ( 50%):                | 30.4 lx |
| (100%):               | 60.8 lx |                        |         |

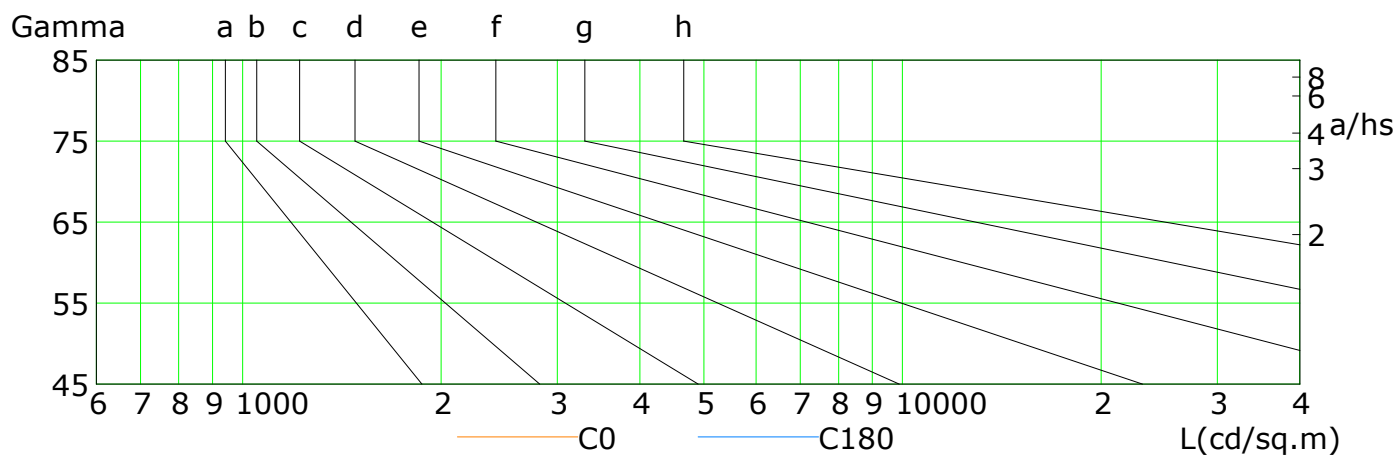
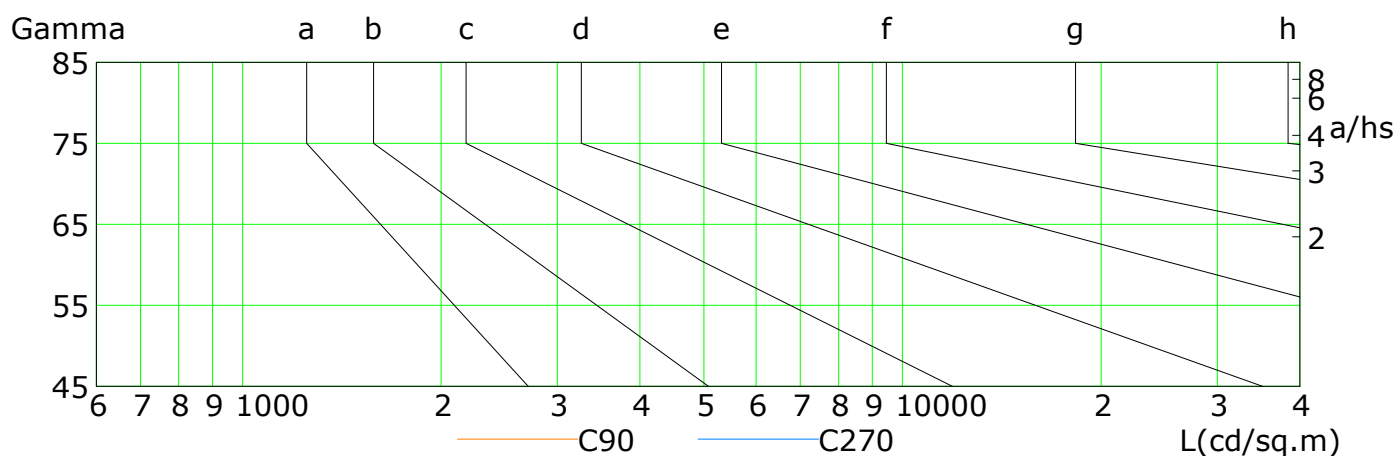
C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-90.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

## Lum Limit Curve

| Dazzle | Quality | Illuminance (lx) |      |      |       |       |       |       |       |
|--------|---------|------------------|------|------|-------|-------|-------|-------|-------|
| 1.15   | A       | 2000             | 1000 | 500  | <=300 |       |       |       |       |
| 1.50   | B       |                  | 2000 | 1000 | 500   | <=300 |       |       |       |
| 1.85   | C       |                  |      | 2000 | 1000  | 500   | <=300 |       |       |
| 2.20   | D       |                  |      |      | 2000  | 1000  | 500   | <=300 |       |
| 2.55   | E       |                  |      |      |       | 2000  | 1000  | 500   | <=300 |

a b c d e f g h

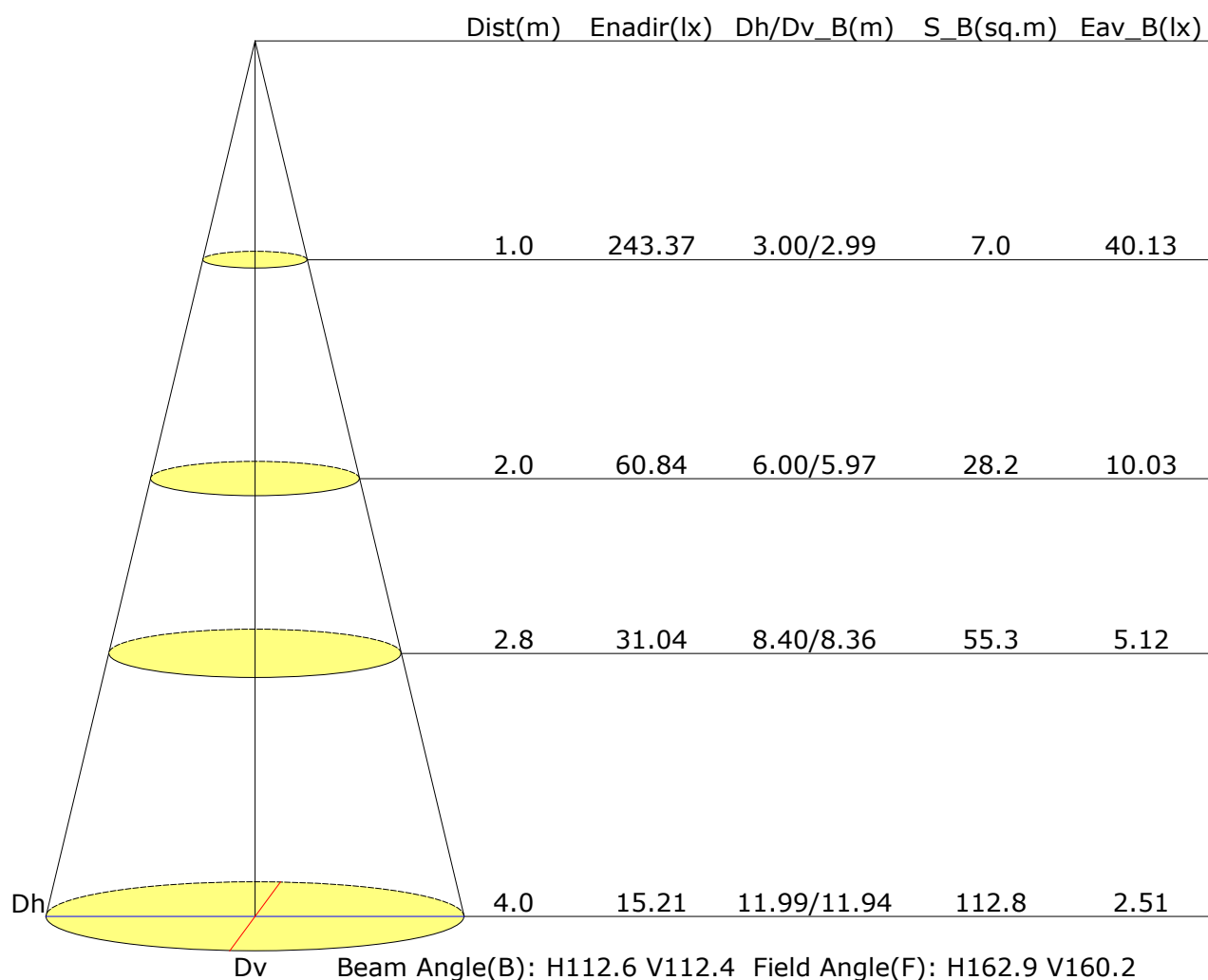


| L(cd/sq.m) | G45 | G50 | G55 | G60 | G65 | G70 | G75 | G80 | G85 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| C0         | 158 | 142 | 124 | 105 | 86  | 67  | 47  | 28  | 13  |
| C90        | 161 | 144 | 126 | 106 | 86  | 65  | 44  | 24  | 7   |
| C180       | 164 | 147 | 129 | 110 | 91  | 71  | 50  | 31  | 14  |
| C270       | 162 | 145 | 127 | 107 | 87  | 66  | 46  | 25  | 9   |

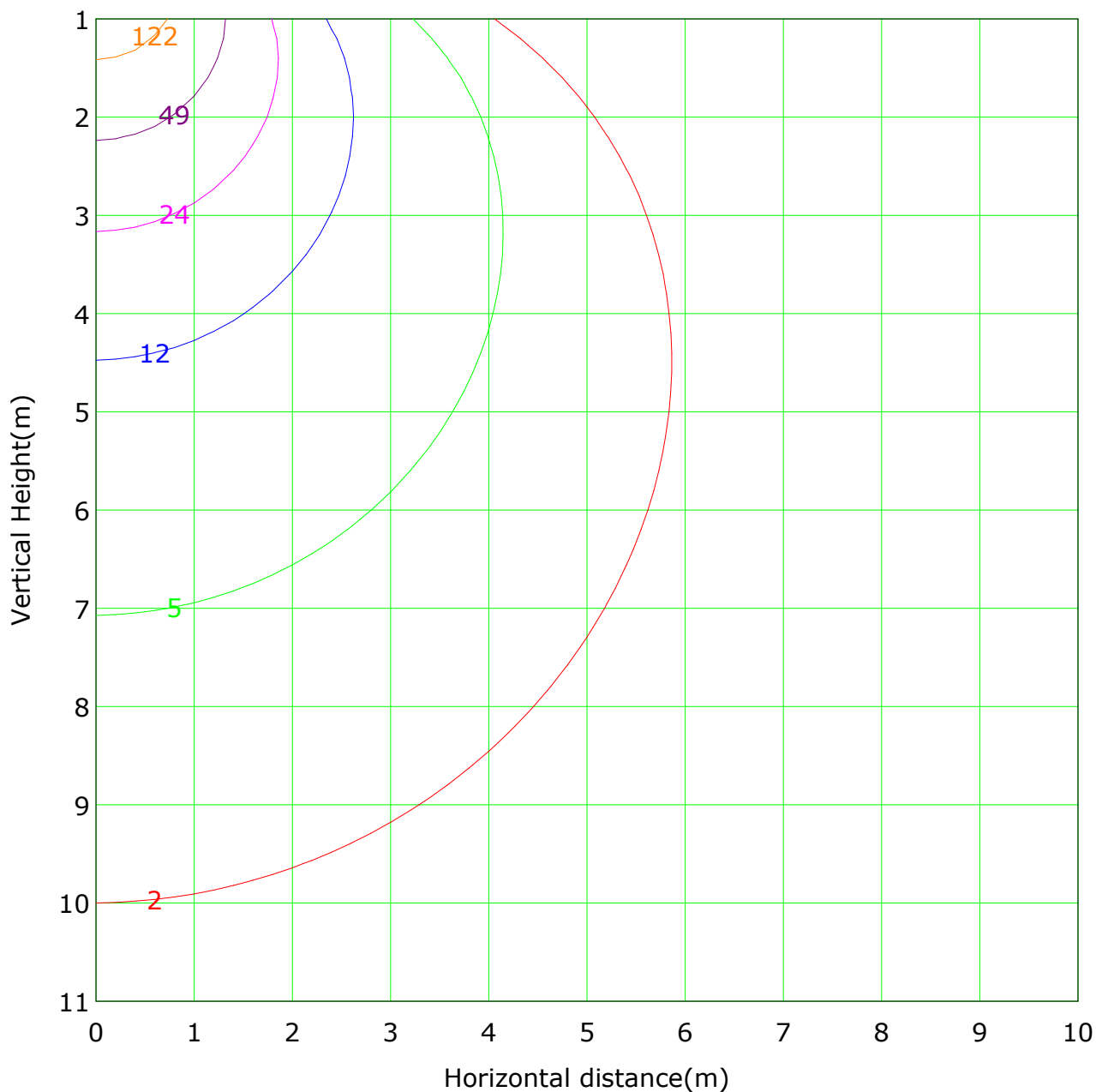
C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

Gamma Plane (°):0.0-90.0:1.0  
Test Device: GPM-1800B  
Distance: 7.792 m  
Humidity:  
Inspector:

## Illuminance at a Distance



## Vertical IsoLux Plot



Lowest(m): 1.0m    Highest(m): 11.0m    Max Lux: 243.4 lx

|                    |                    |
|--------------------|--------------------|
| — ( 1%): 2.4 lx    | — ( 2%): 4.9 lx    |
| — ( 5%): 12.2 lx   | — ( 10%): 24.3 lx  |
| — ( 20%): 48.7 lx  | — ( 50%): 121.7 lx |
| — (100%): 243.4 lx |                    |