

Report No.:

Test Time: 03/02/2020 14:20

Luminaire Property

Luminaire Manufacturer: Lighting line

Luminaire Description: LLP-SH02-03 + LLD-03-FK

Lamp Description: F52-400-60822

Number of Lamps: 2

Lumens per Lamp: 1579 lm

Voltage: 24.0 V

Current: 1.172 A

Power: 28.12 W

Power Factor: 1.000

Photometric Results

CIE Class: General Diffuse

Measurement Flux: 2390.5 lm

Downward Ratio: 37.85%

Total Rated Lamp Lumens: 3158.0 lm

Efficiency: 75.70%

Upward Ratio: 37.85%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 360.0, 360.0, 360.0, 360.0

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 360.0, 360.0, 360.0, 360.0

Luminaire Efficacy Rating (LER): 85.06

Central Intensity: 544.71 cd

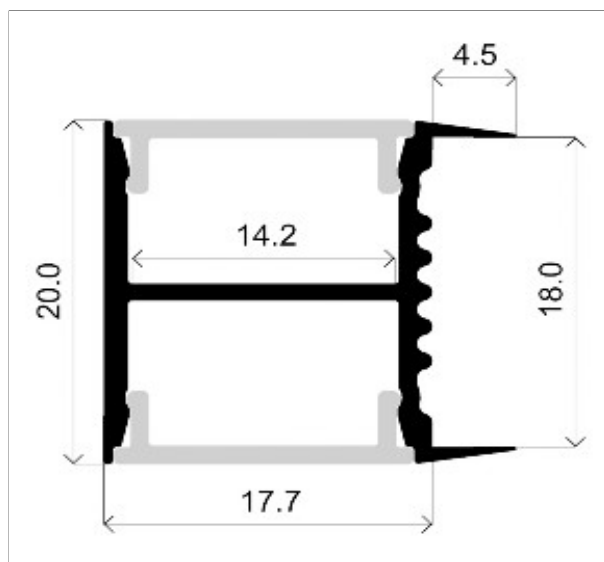
Max. Intensity: 550.05 cd

Pos of Max. Intensity: H100 V9

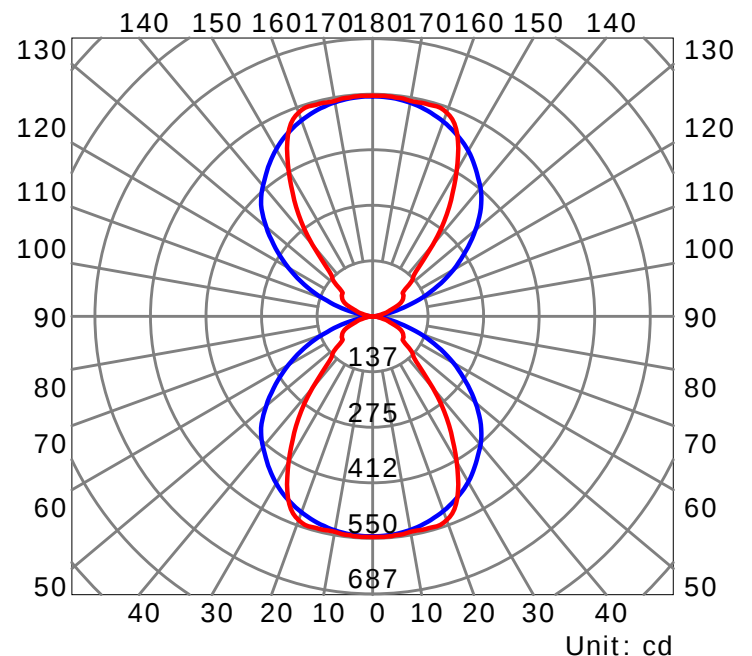
S/MH(C0/C180): 1.29

S/MH(C90/C270): 1.15

Picture Of Luminaire



Luminous Intensity Distribution Curve



— C0-C180 — C90-C270

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

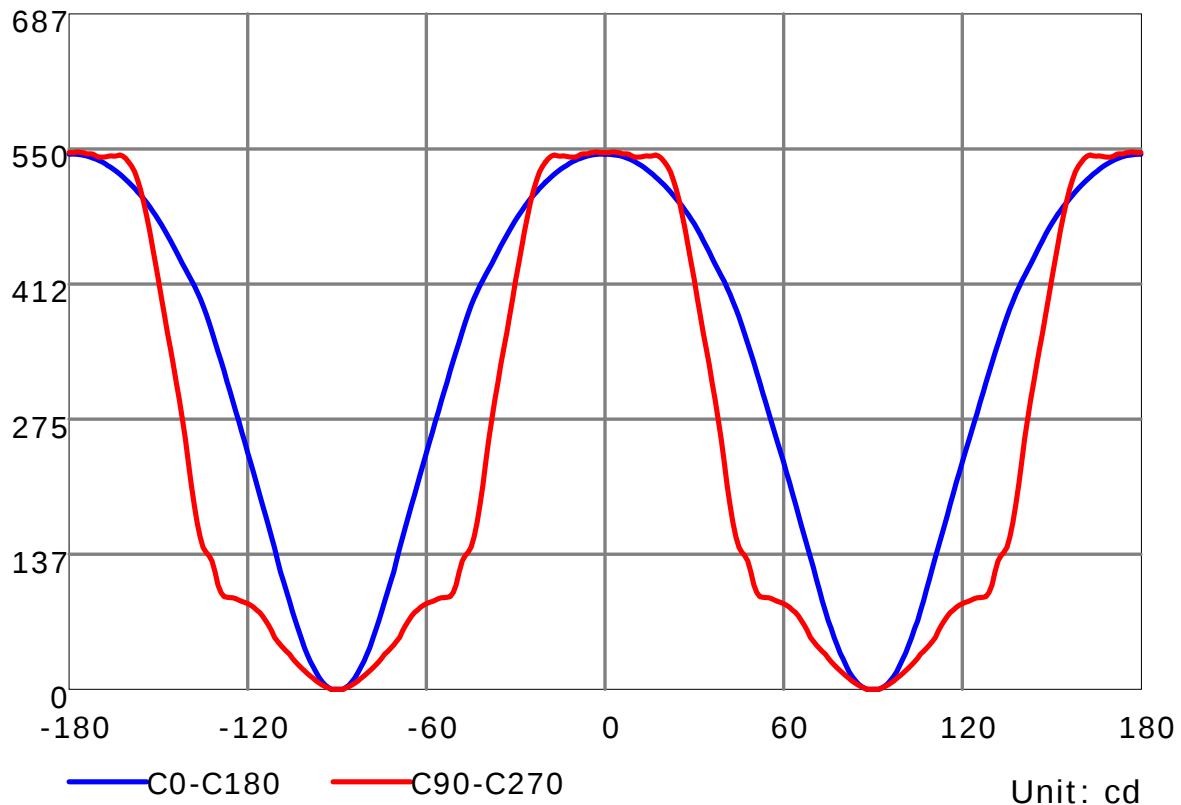
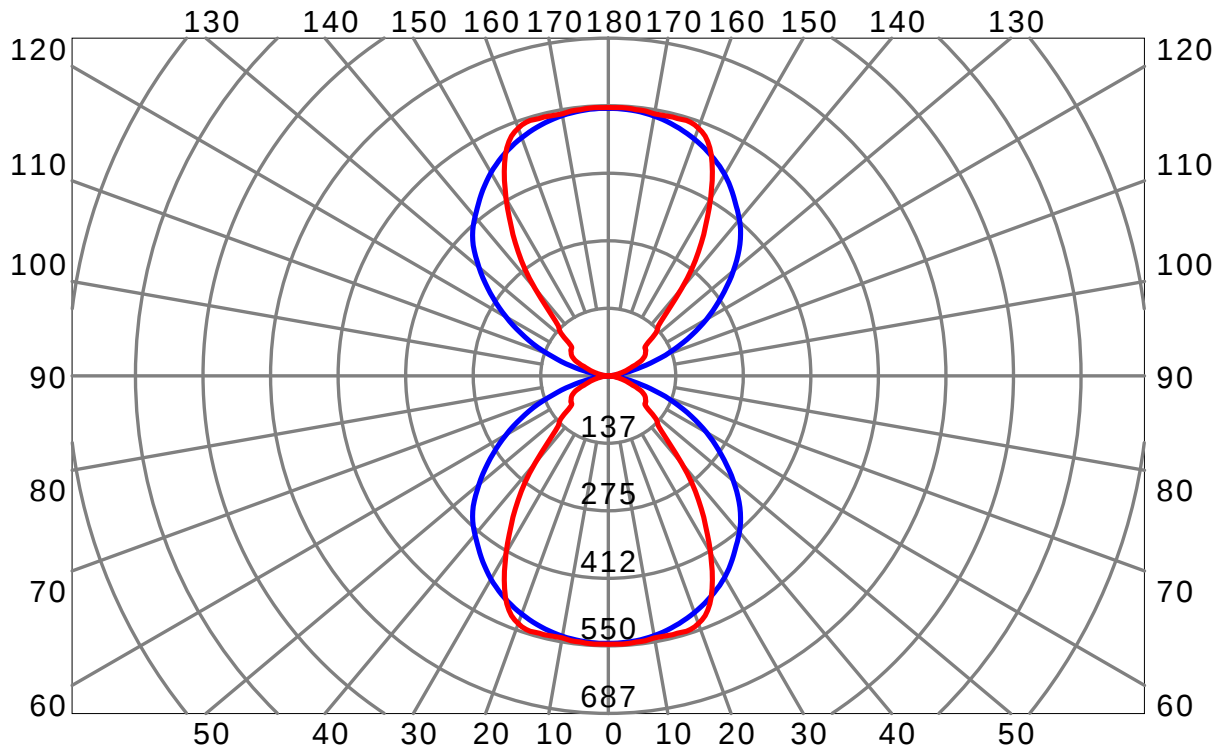
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Luminous Intensity Distribution Curve



C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

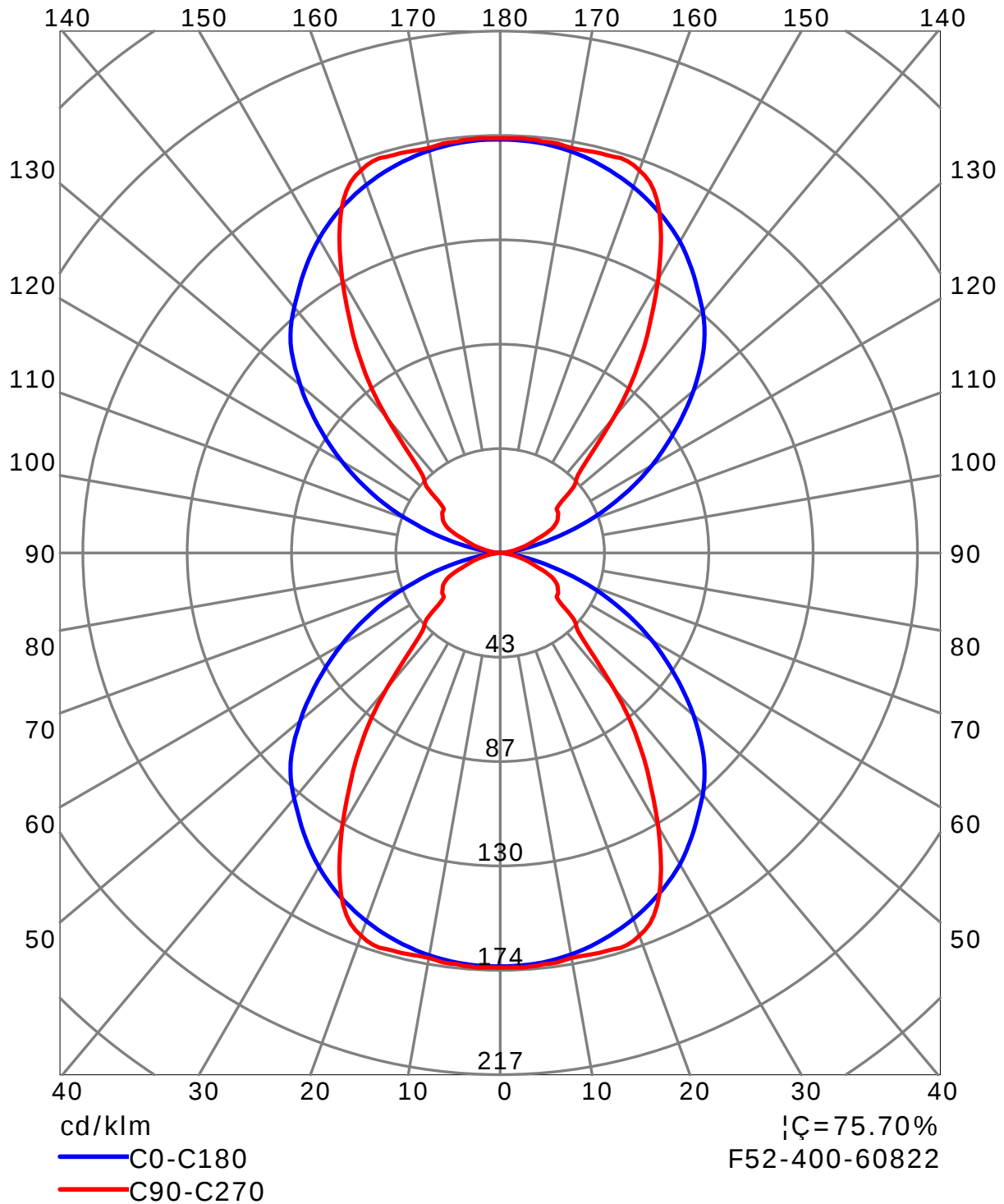
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

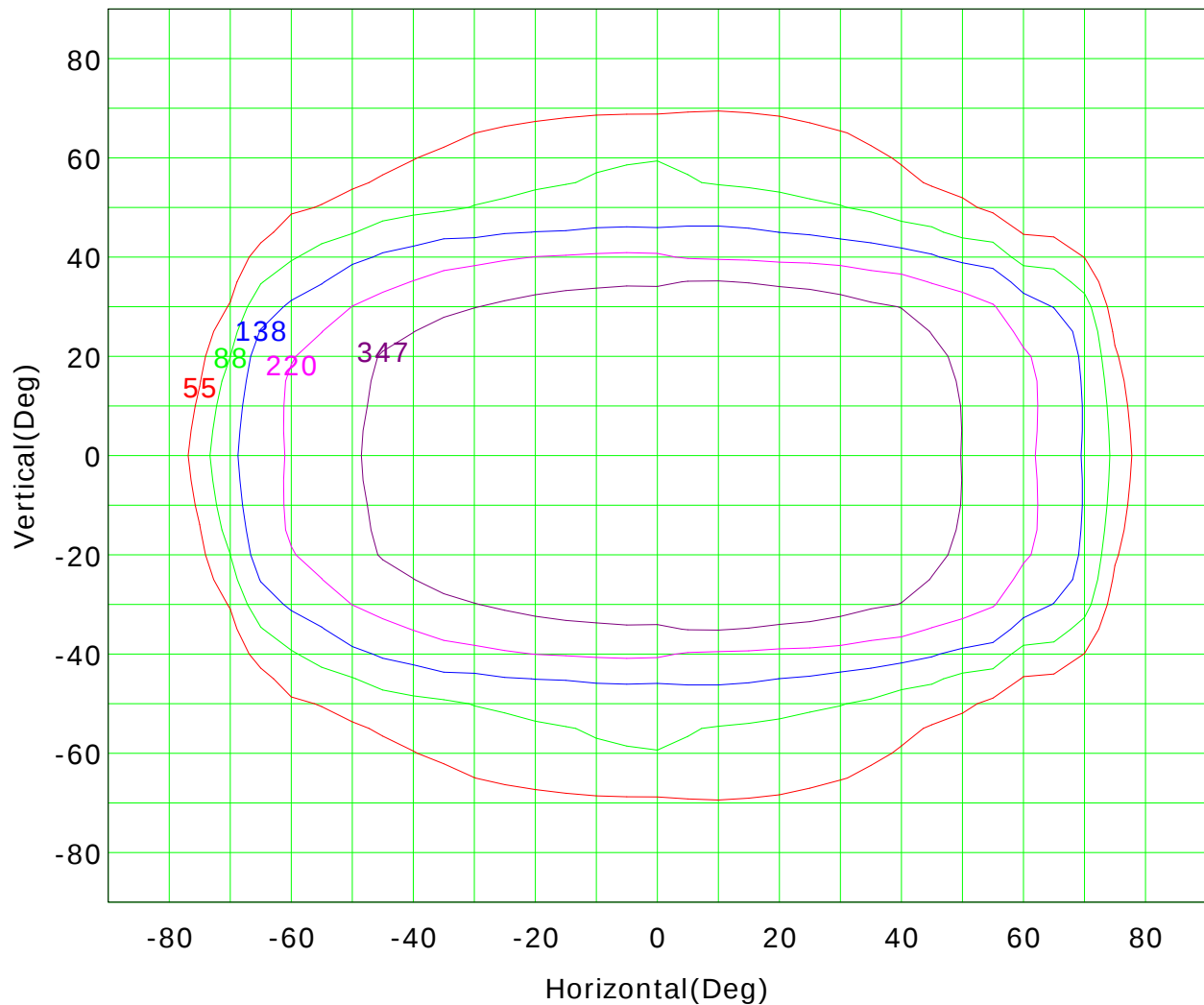
Luminous Intensity Distribution Curve(cd / klm)



C Plane (°):0.0-180.0: 10.0
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-2000
Distance: 7.970 m
Humidity:
Inspector:

Isocandela (rectangle)



I_{max} (100%): 550 cd

(10%):	55 cd	(16%):	88 cd
(25%):	138 cd	(40%):	220 cd
(63%):	347 cd	(100%):	550 cd

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

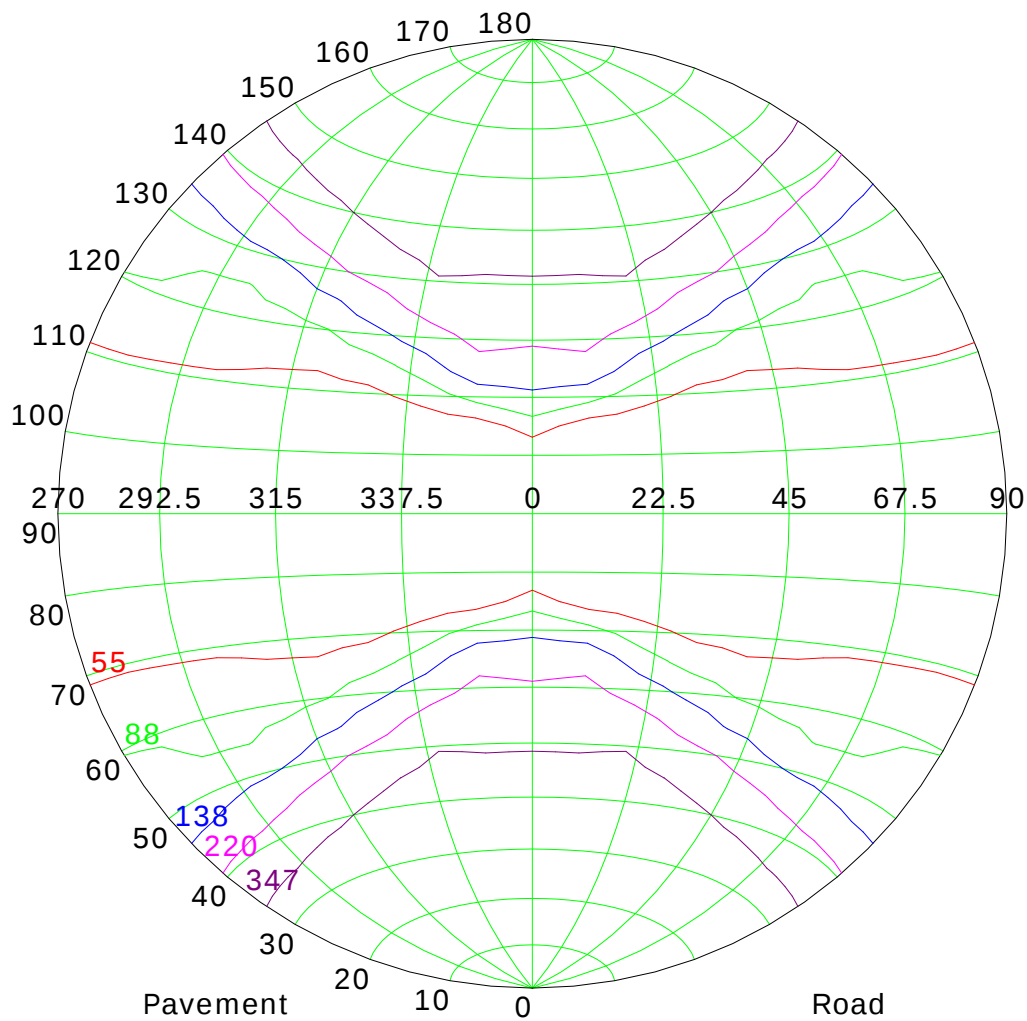
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Isocandela (sphere)



I_{max} (100%): 550 cd

(10%):	55 cd	(16%):	88 cd
(25%):	138 cd	(40%):	220 cd
(63%):	347 cd	(100%):	550 cd

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

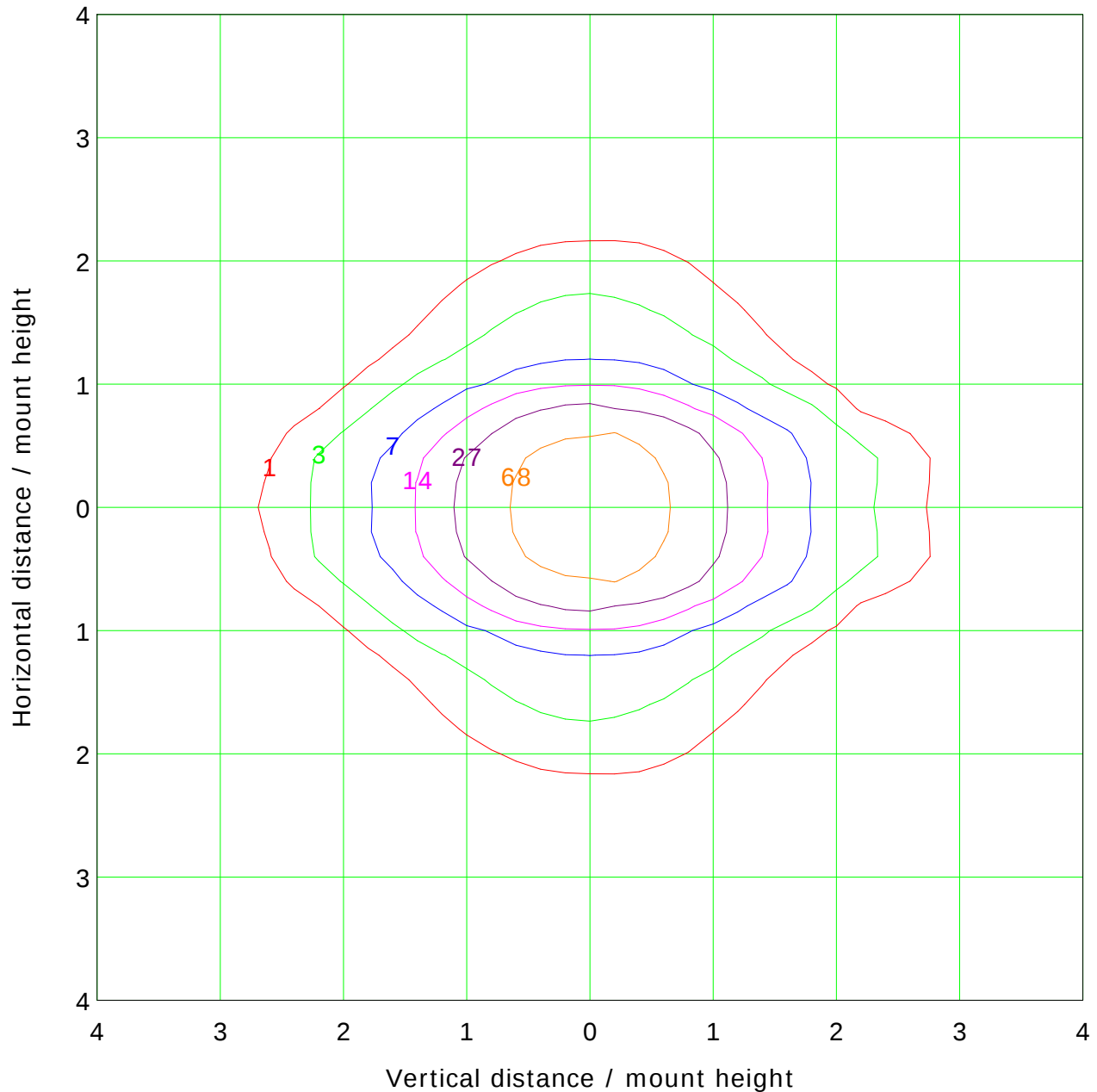
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

IsoLux Plot



Mounting Height: 2.0m		Max Lux(100%): 136.8 lx	
— (1%):	1.4 lx	— (2%):	2.7 lx
— (5%):	6.8 lx	— (10%):	13.7 lx
— (20%):	27.4 lx	— (50%):	68.4 lx
— (100%):	136.8 lx		

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-2000

Distance: 7.970 m

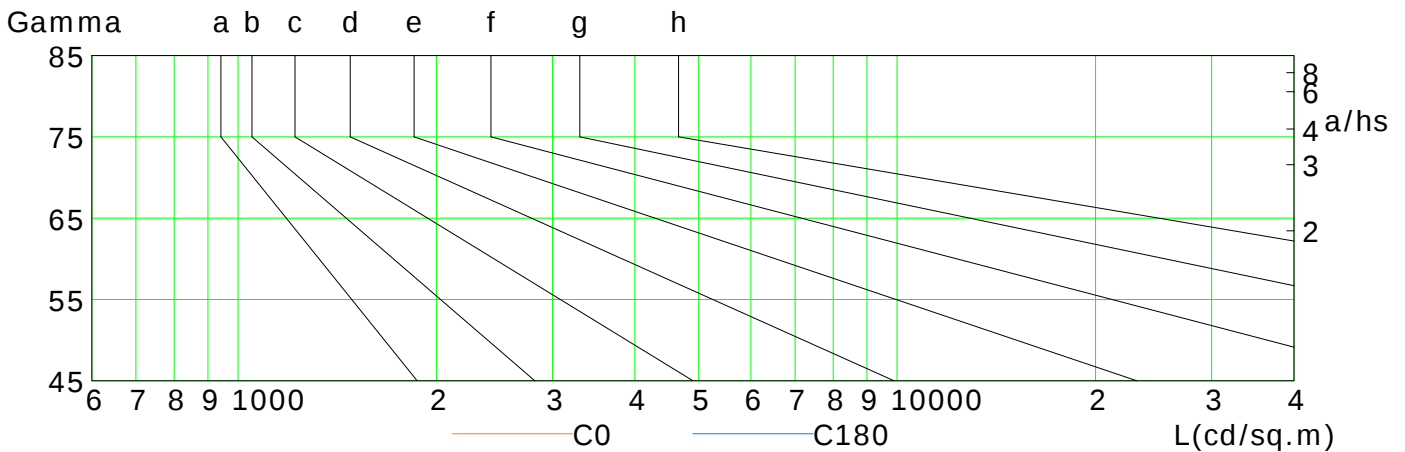
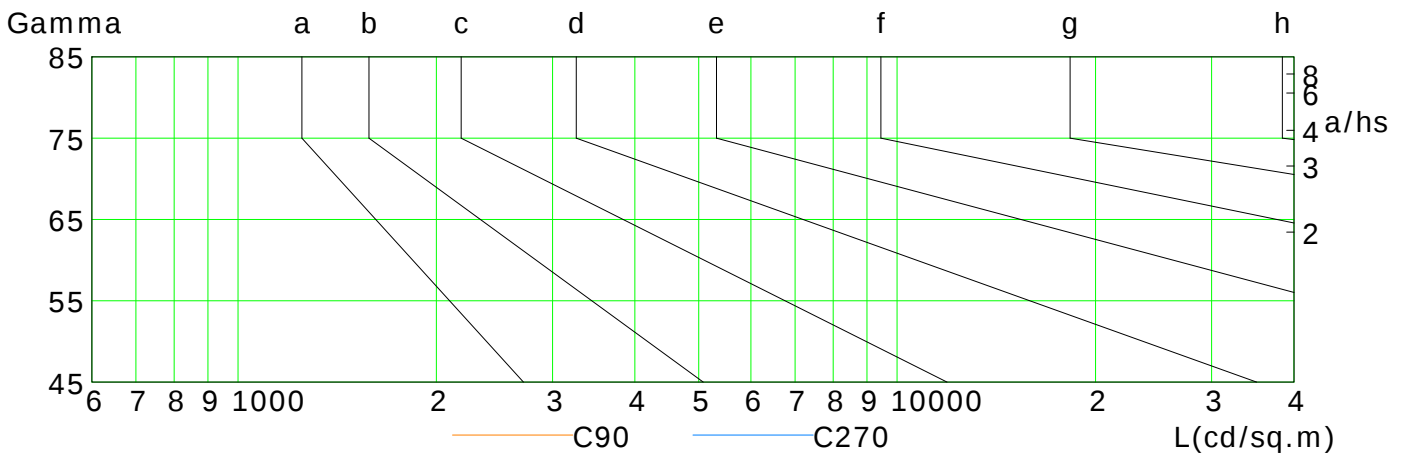
Humidity:

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	379	333	281	231	177	124	70	31	6
C90	145	106	93	87	75	49	32	16	4
C180	391	344	293	241	187	132	79	35	8
C270	145	106	93	87	75	49	32	16	4

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

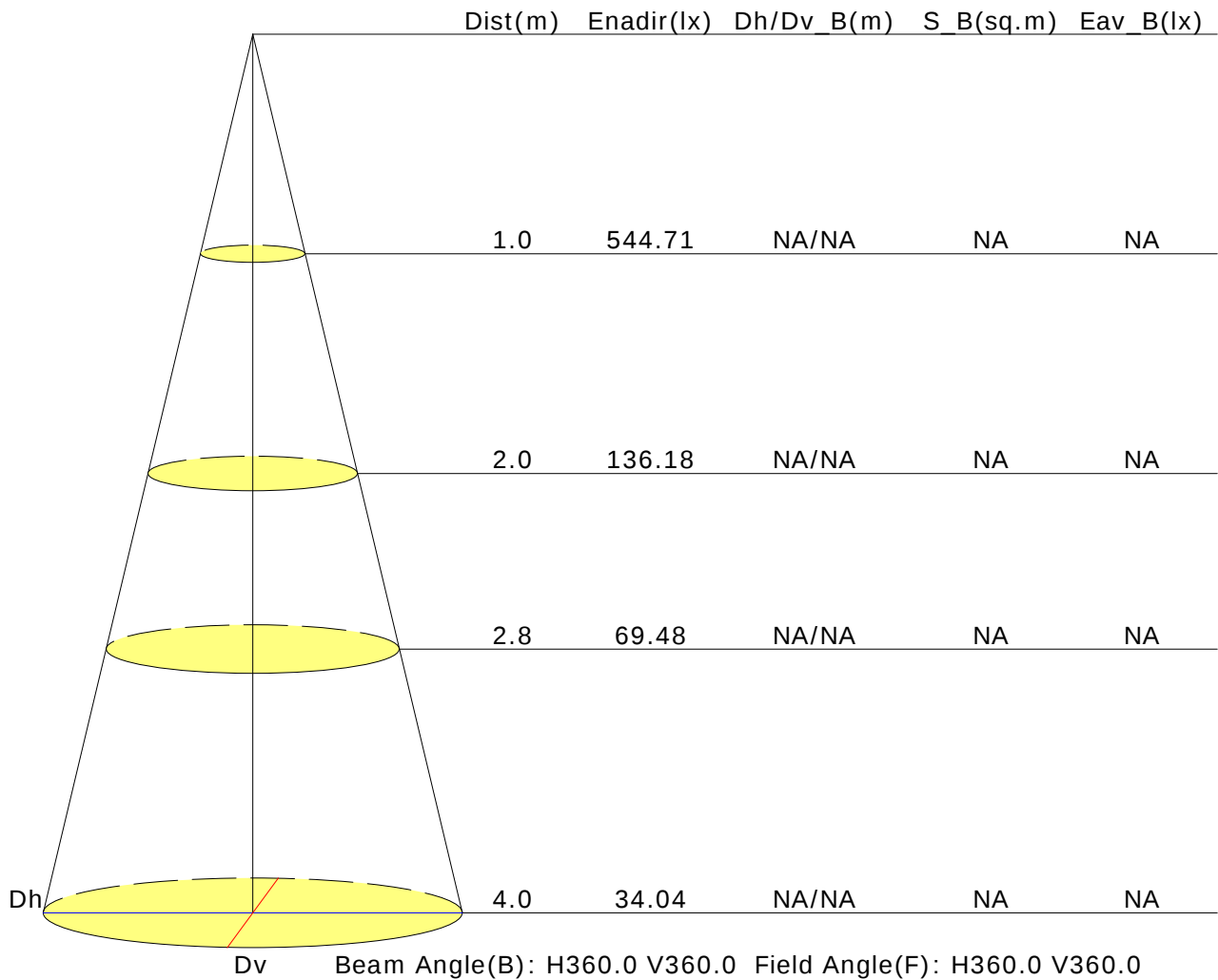
Test Device: GPM-2000

Distance: 7.970 m

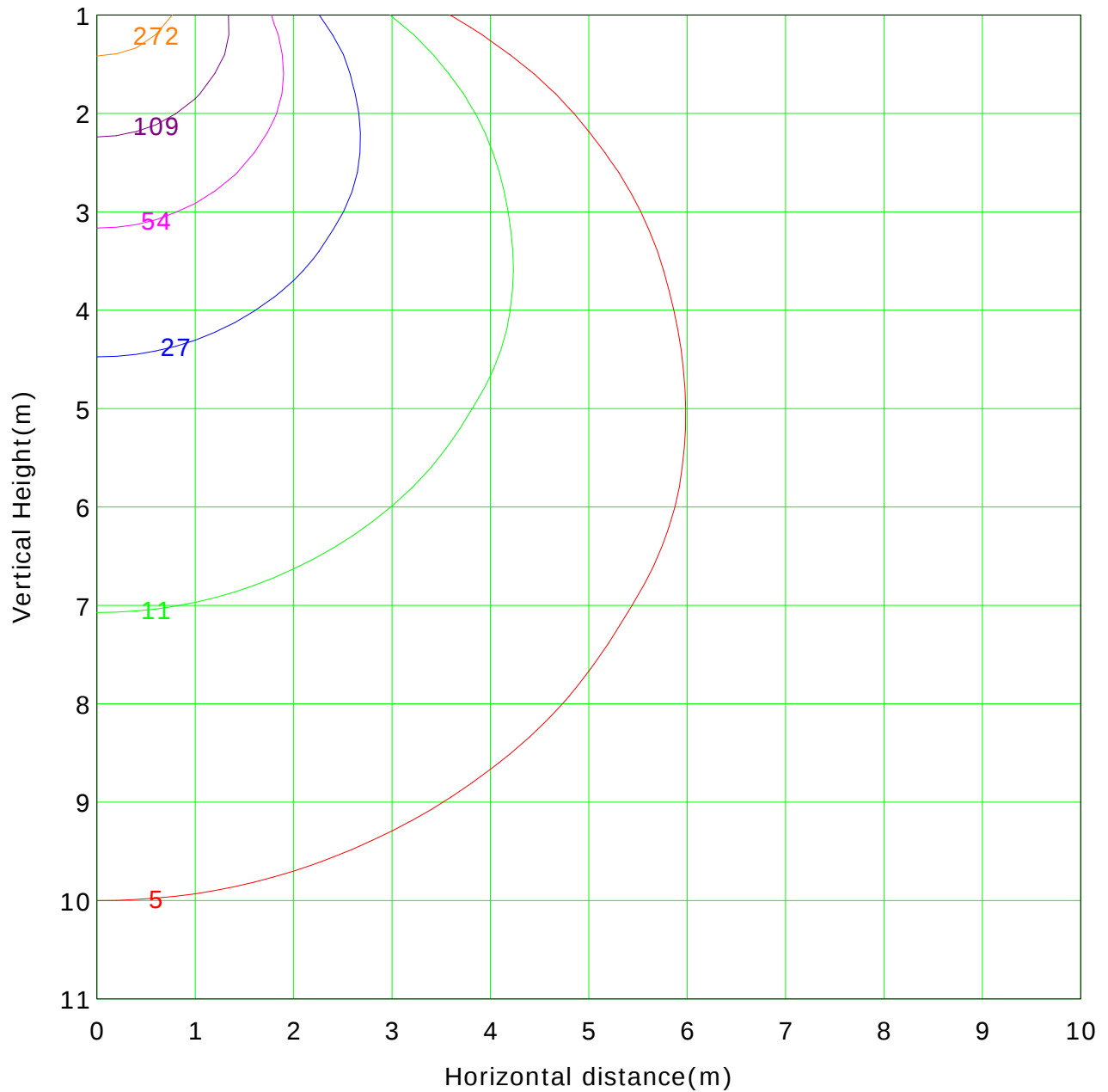
Humidity:

Inspector:

Illuminance at a Distance



Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 11.0m Max Lux: 544.7 lx

(1%): 5.4 lx	(2%): 10.9 lx
(5%): 27.2 lx	(10%): 54.5 lx
(20%): 108.9 lx	(50%): 272.4 lx
(100%): 544.7 lx	

Report No.:

Test Time: 03/02/2020 12:24

Luminaire Property

Luminaire Manufacturer: Lighting line

Luminaire Description: LLP-SH02-03 + LLD-03-FH

Lamp Description: F52-400-60822

Number of Lamps: 2

Lumens per Lamp: 1579 lm

Voltage: 24.0 V

Current: 1.184 A

Power: 28.42 W

Power Factor: 1.000

Photometric Results

CIE Class: General Diffuse

Measurement Flux: 2299.2 lm

Downward Ratio: 36.40%

Total Rated Lamp Lumens: 3158.0 lm

Efficiency: 72.81%

Upward Ratio: 36.40%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 360.0, 360.0, 360.0, 360.0

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 360.0, 360.0, 360.0, 360.0

Luminaire Efficacy Rating (LER): 80.95

Central Intensity: 541.61 cd

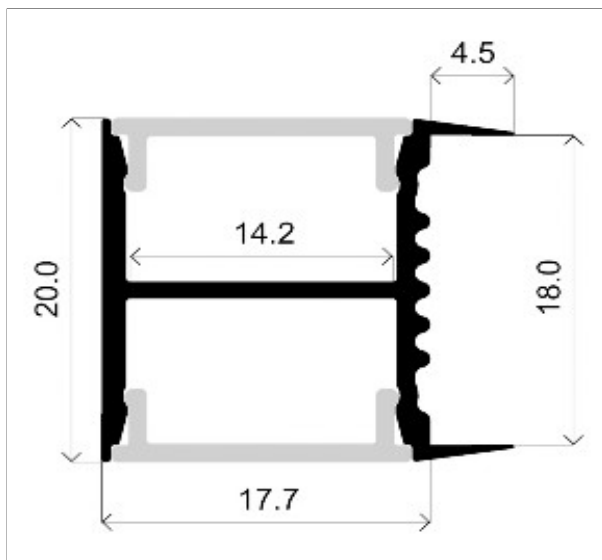
Max. Intensity: 541.61 cd

Pos of Max. Intensity: H0 V0

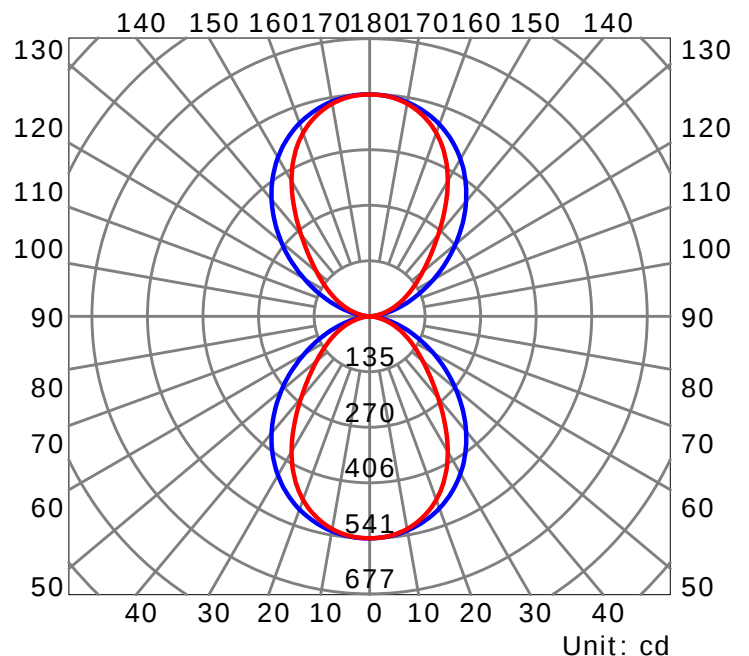
S/MH(C0/C180): 1.22

S/MH(C90/C270): 1.08

Picture Of Luminaire



Luminous Intensity Distribution Curve



— C0-C180 — C90-C270

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

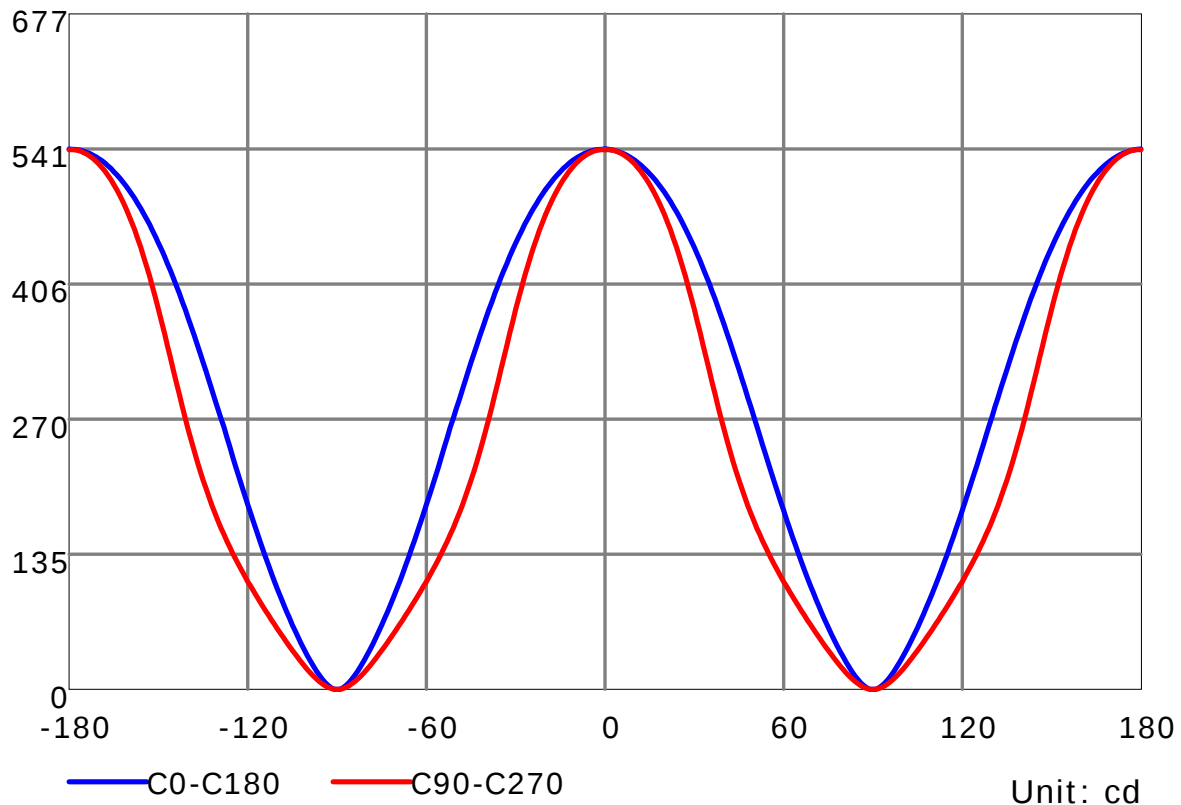
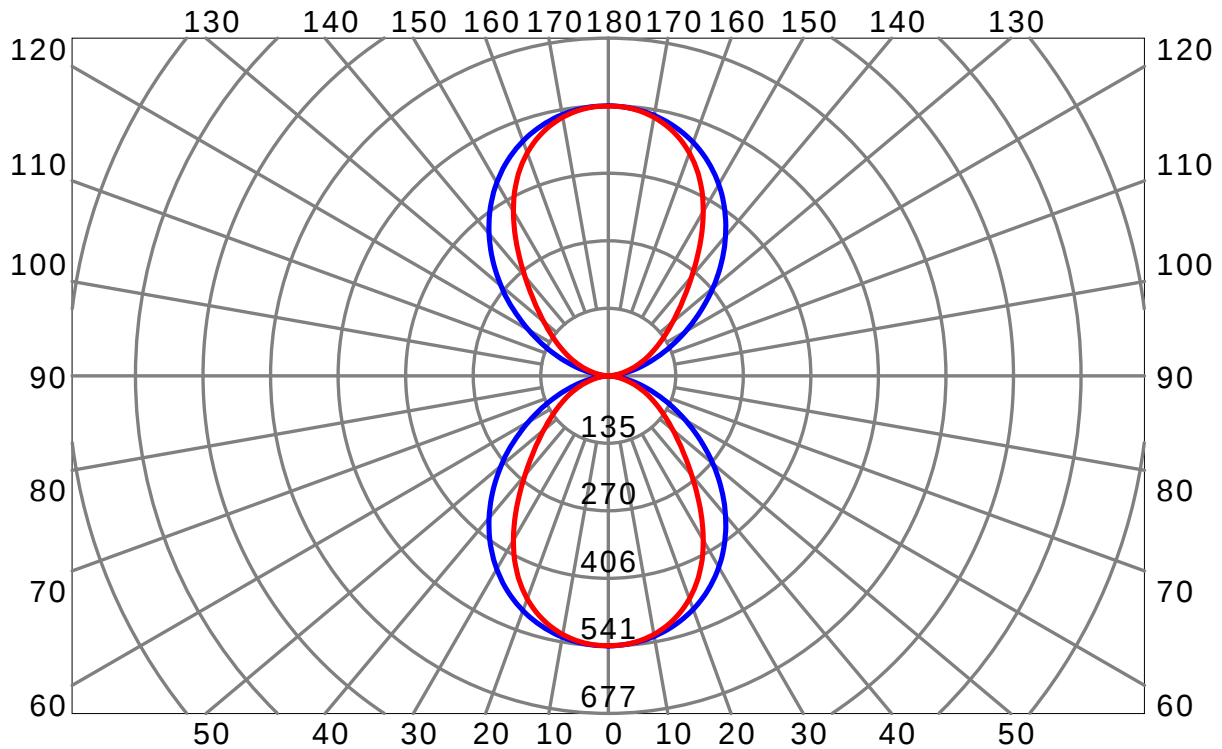
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Luminous Intensity Distribution Curve



C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

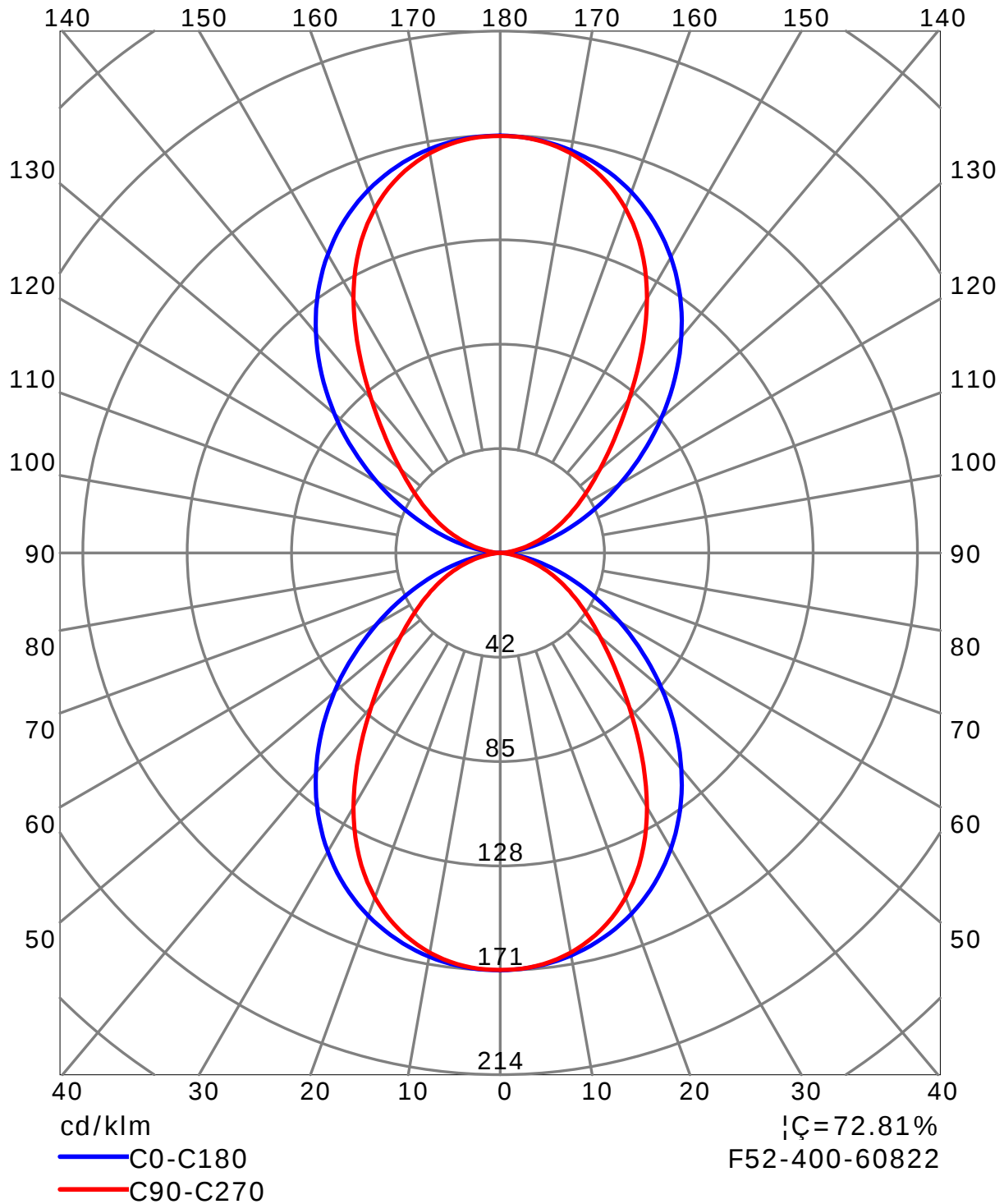
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

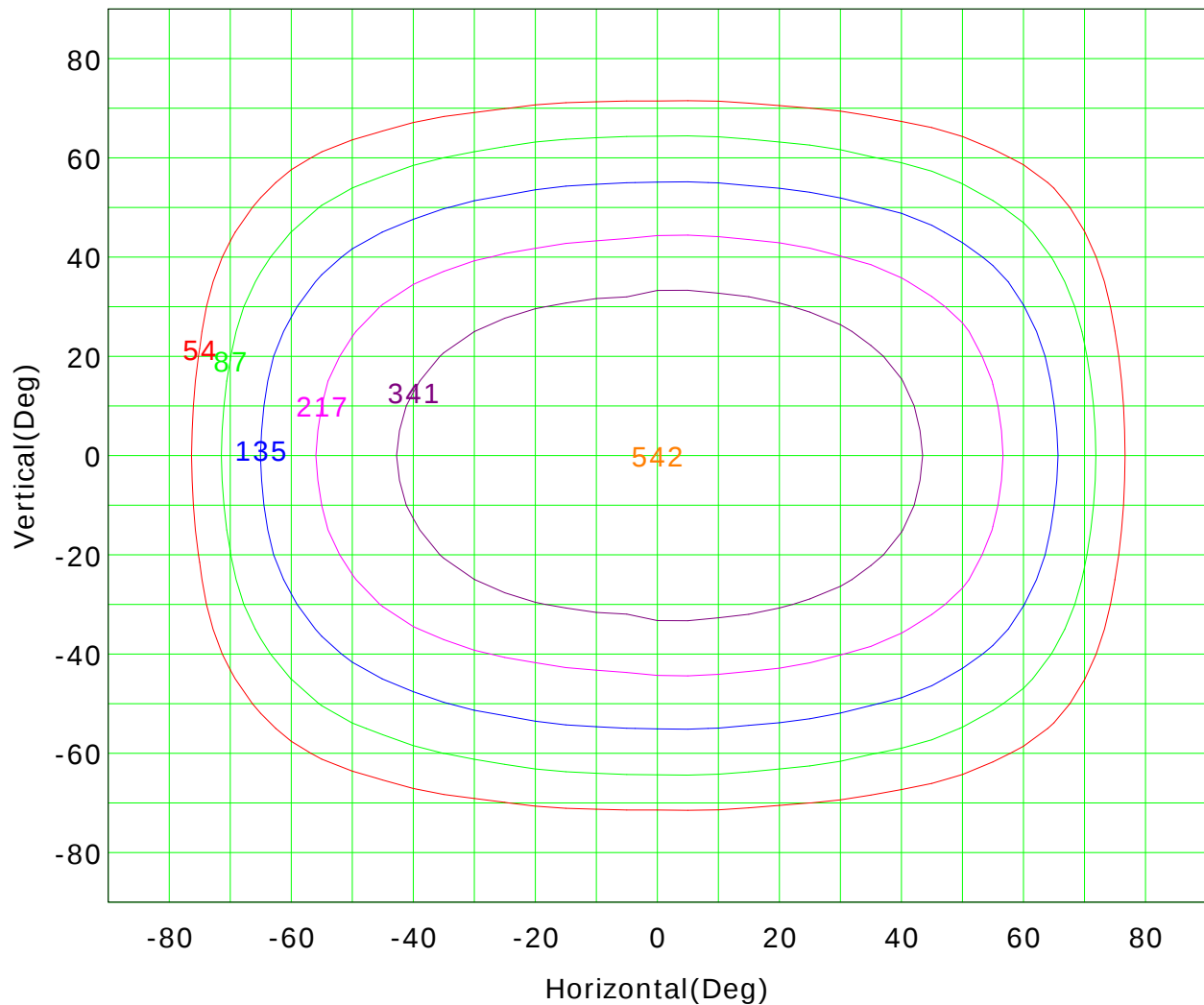
Luminous Intensity Distribution Curve(cd / klm)



C Plane (°):0.0-180.0: 10.0
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-2000
Distance: 7.970 m
Humidity:
Inspector:

Isocandela (rectangle)



I_{max} (100%): 542 cd

(10%):	54 cd	(16%):	87 cd
(25%):	135 cd	(40%):	217 cd
(63%):	341 cd	(100%):	542 cd

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

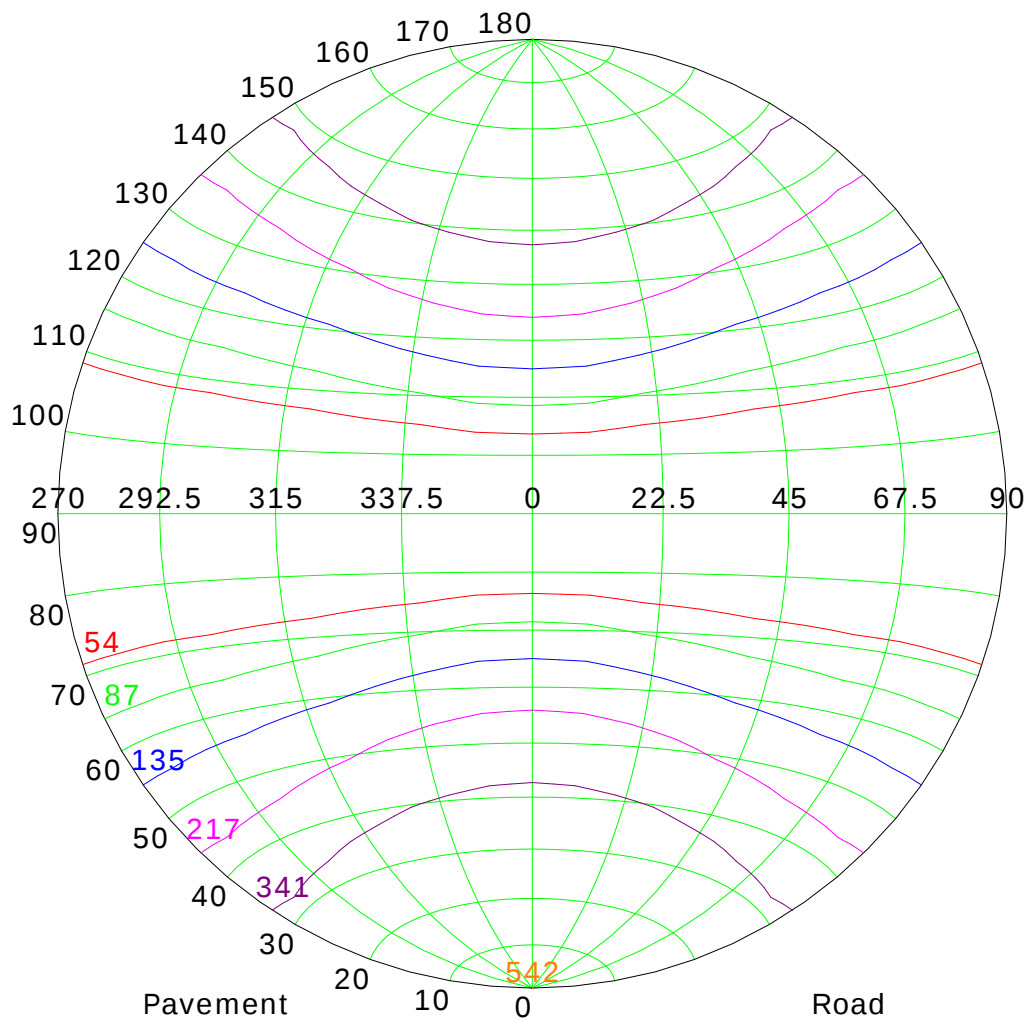
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Isocandela (sphere)



I_{max} (100%): 542 cd

(10%):	54 cd	(16%):	87 cd
(25%):	135 cd	(40%):	217 cd
(63%):	341 cd	(100%):	542 cd

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

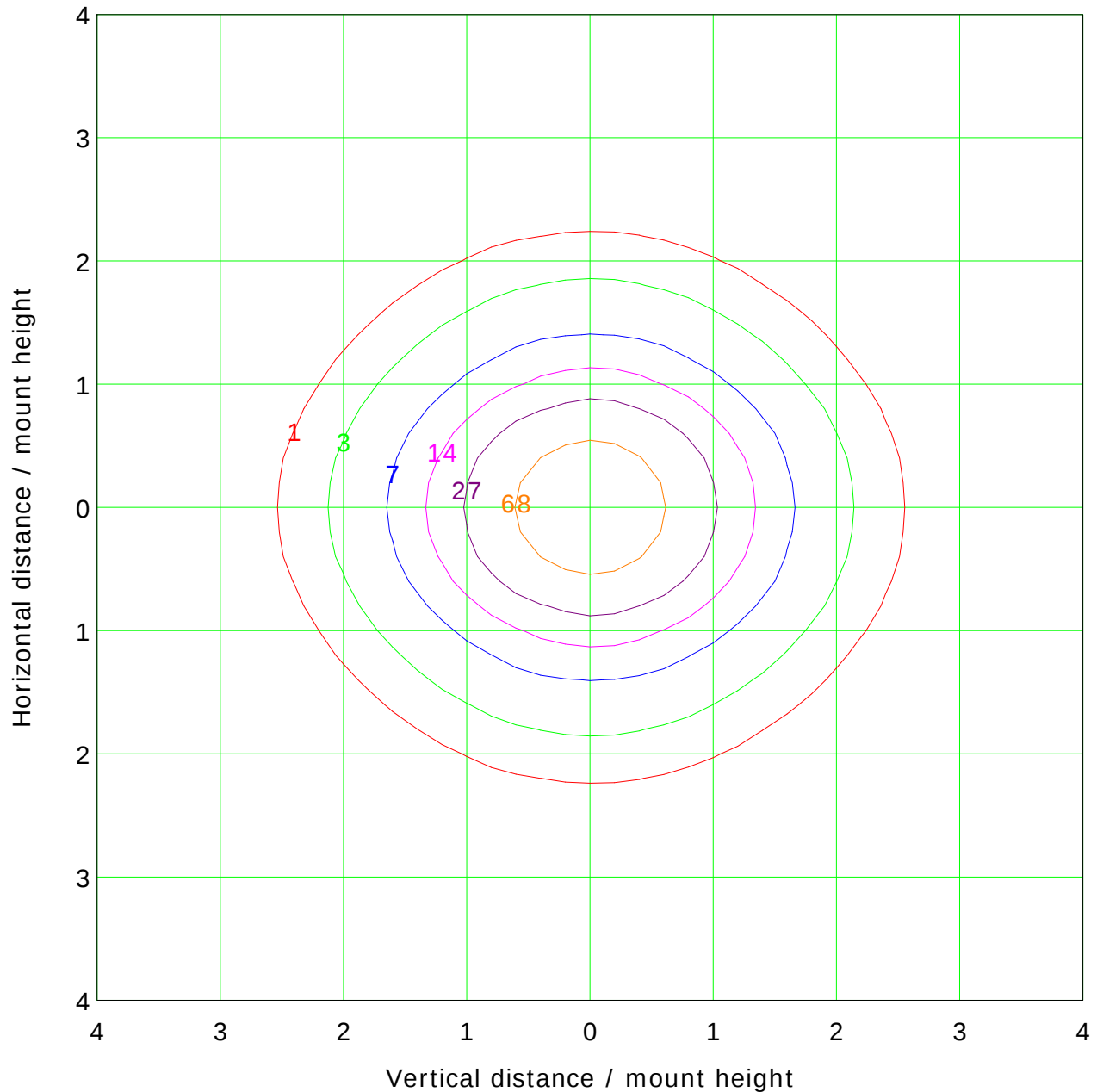
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

IsoLux Plot



Mounting Height: 2.0m		Max Lux(100%): 135.4 lx	
— (1%):	1.4 lx	— (2%):	2.7 lx
— (5%):	6.8 lx	— (10%):	13.5 lx
— (20%):	27.1 lx	— (50%):	67.7 lx
— (100%):	135.4 lx		

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-2000

Distance: 7.970 m

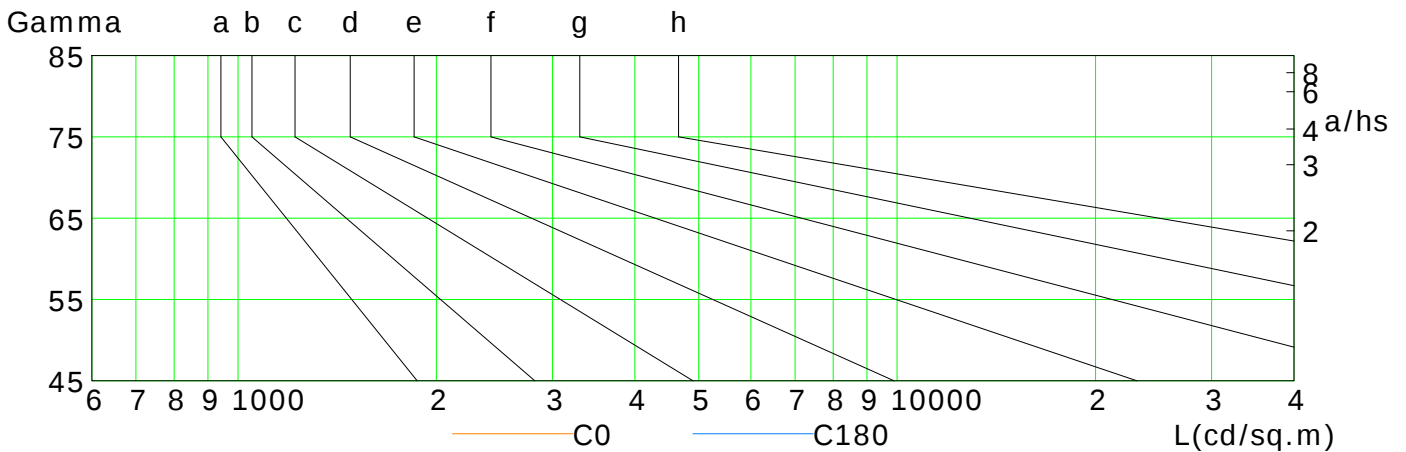
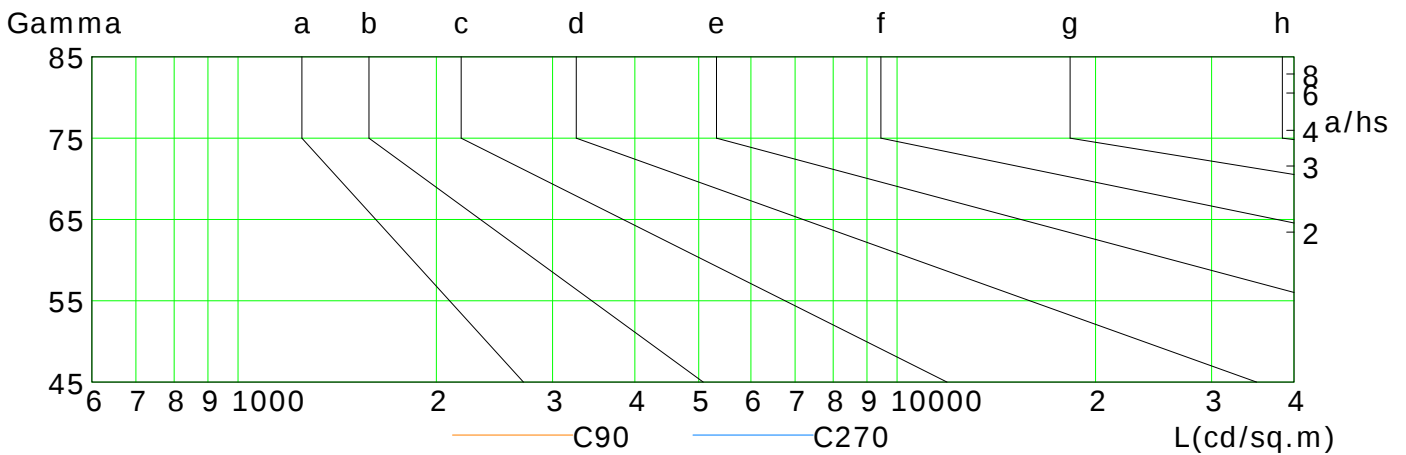
Humidity:

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	321	273	225	179	136	97	62	33	10
C90	210	169	136	108	84	60	39	20	6
C180	328	281	233	185	141	100	64	34	10
C270	210	169	136	108	84	60	39	20	6

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

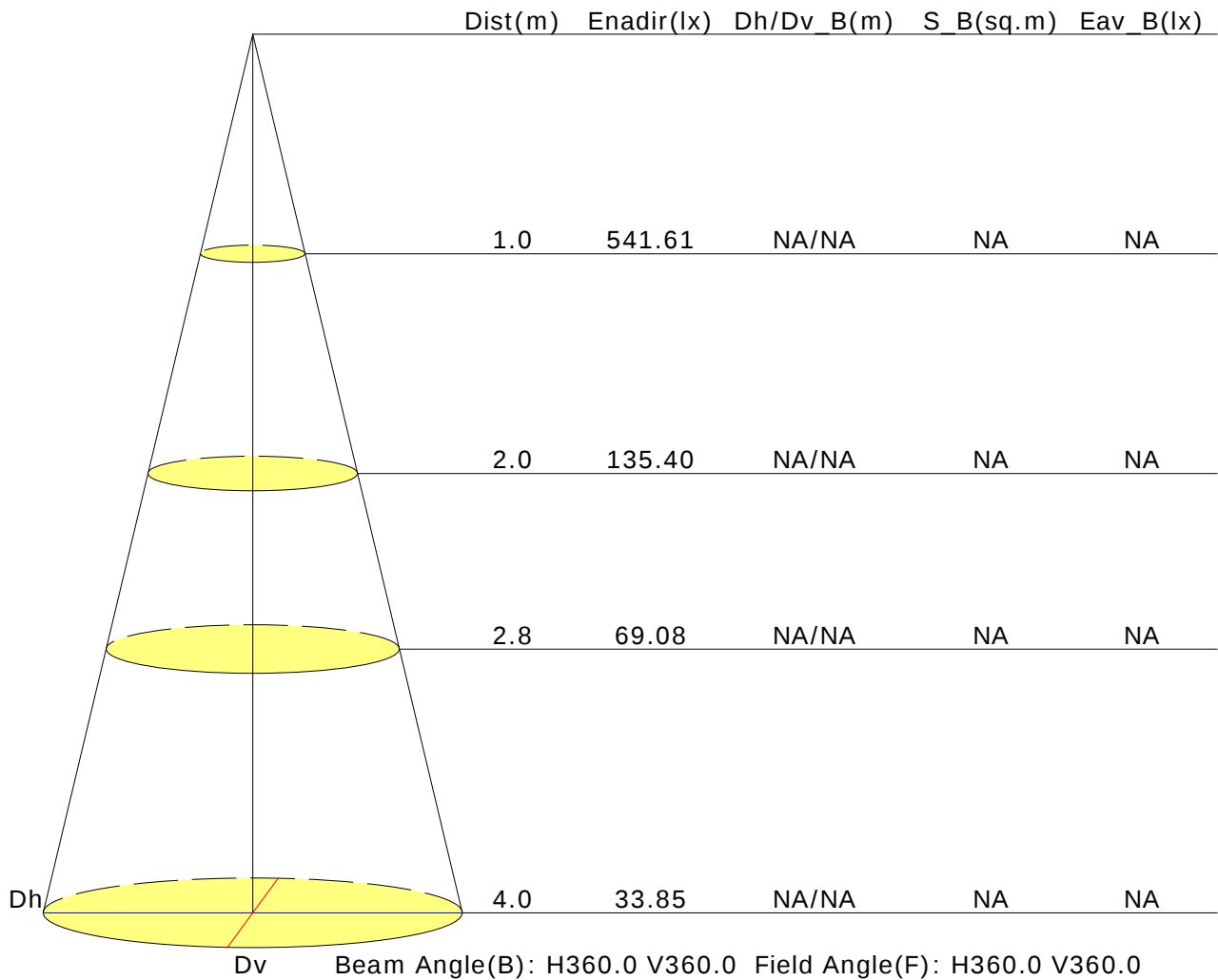
Test Device: GPM-2000

Distance: 7.970 m

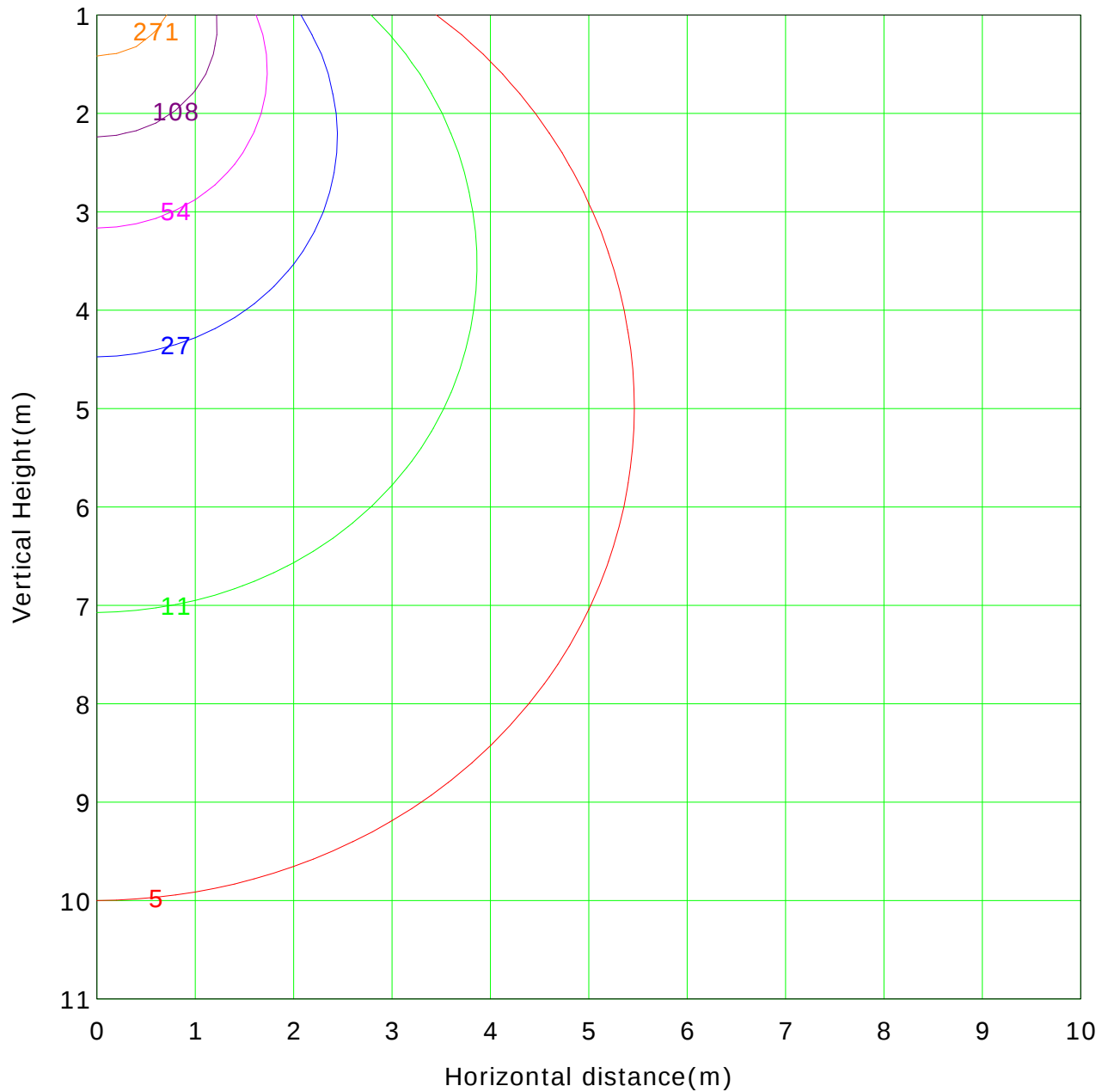
Humidity:

Inspector:

Illuminance at a Distance



Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 11.0m Max Lux: 541.6 lx

(1%): 5.4 lx (2%): 10.8 lx
(5%): 27.1 lx (10%): 54.2 lx
(20%): 108.3 lx (50%): 270.8 lx
(100%): 541.6 lx

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Report No.:

Test Time: 03/02/2020 10:50

Luminaire Property

Luminaire Manufacturer: Lighting line

Luminaire Description: LLP-SH02-03 + LLD-03-FM

Lamp Description: F52-400-60822

Number of Lamps: 2

Lumens per Lamp: 1579 lm

Voltage: 24.0 V

Current: 1.190 A

Power: 28.56 W

Power Factor: 1.000

Photometric Results

CIE Class: General Diffuse

Measurement Flux: 1850.8 lm

Downward Ratio: 29.30%

Total Rated Lamp Lumens: 3158.0 lm

Efficiency: 58.61%

Upward Ratio: 29.30%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 360.0, 360.0, 360.0, 360.0

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 360.0, 360.0, 360.0, 360.0

Luminaire Efficacy Rating (LER): 64.85

Central Intensity: 333.41 cd

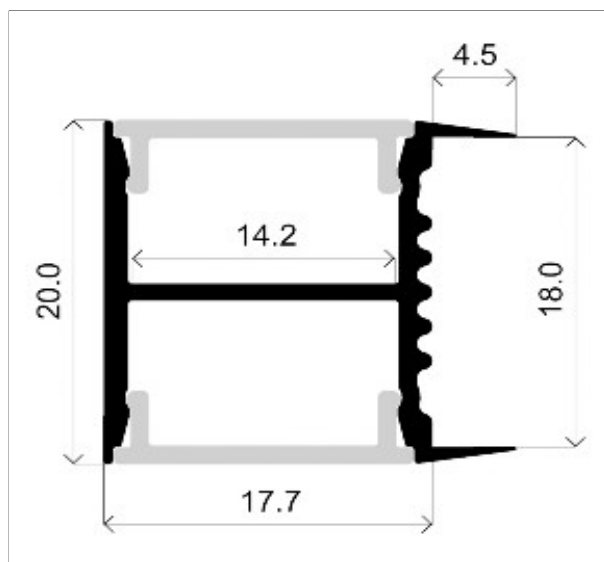
Max. Intensity: 333.52 cd

Pos of Max. Intensity: H80 V0

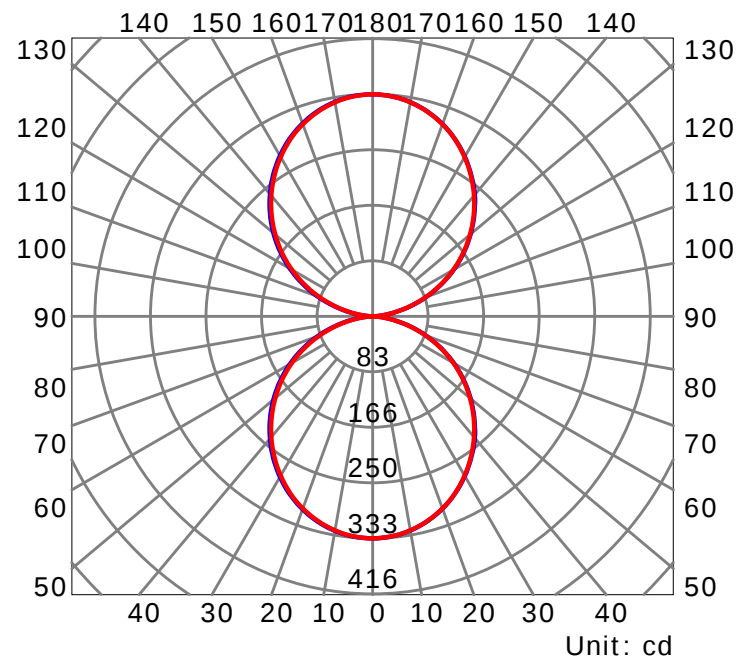
S/MH(C0/C180): 1.24

S/MH(C90/C270): 1.23

Picture Of Luminaire



Luminous Intensity Distribution Curve



— C0-C180 — C90-C270

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

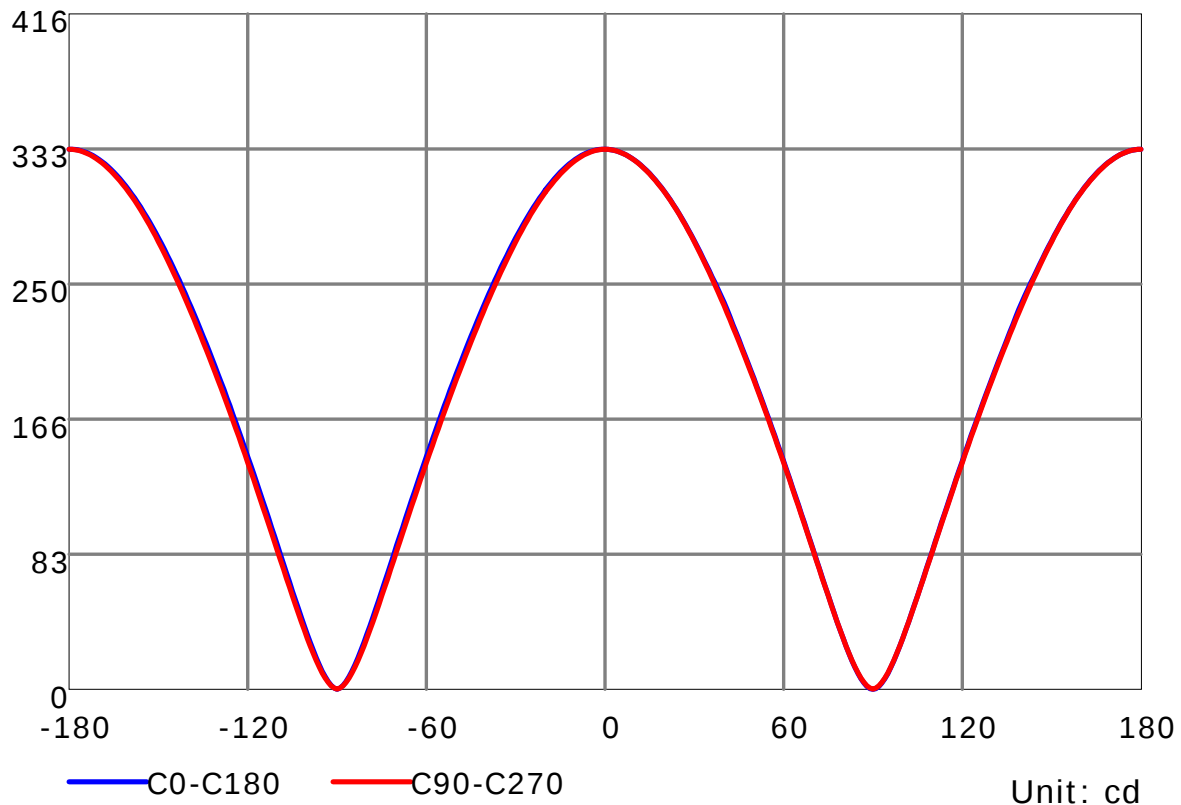
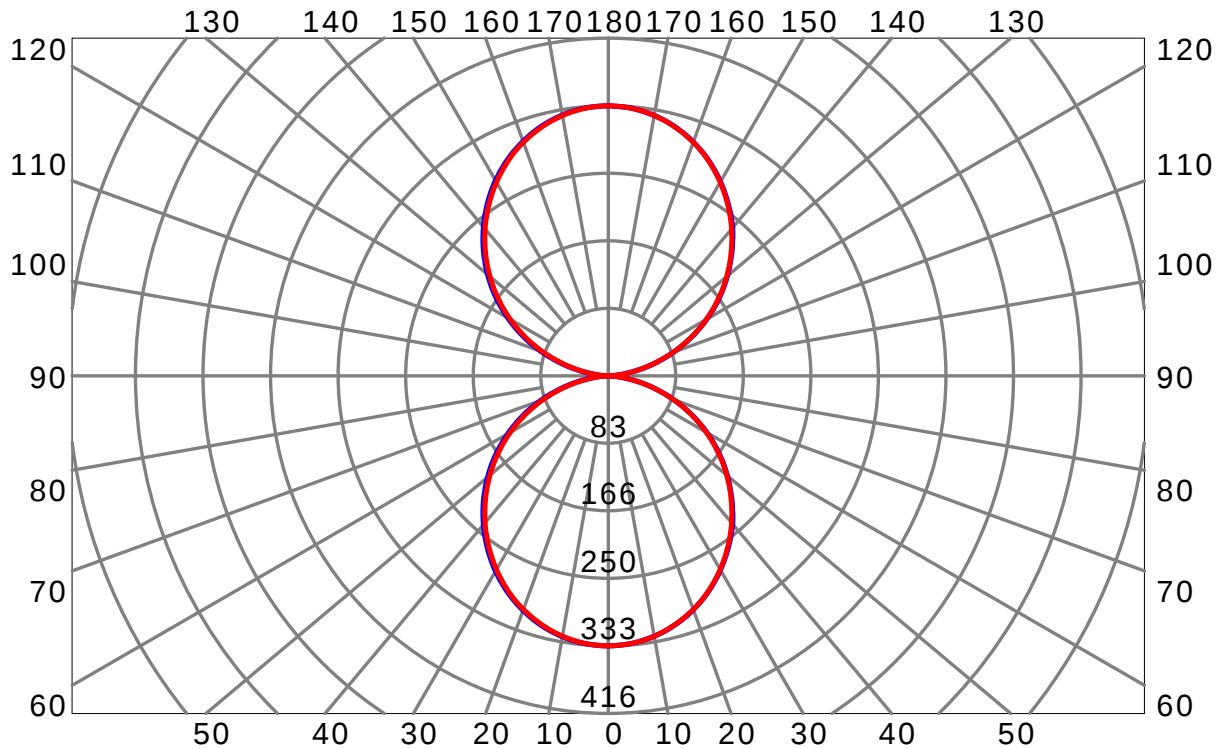
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

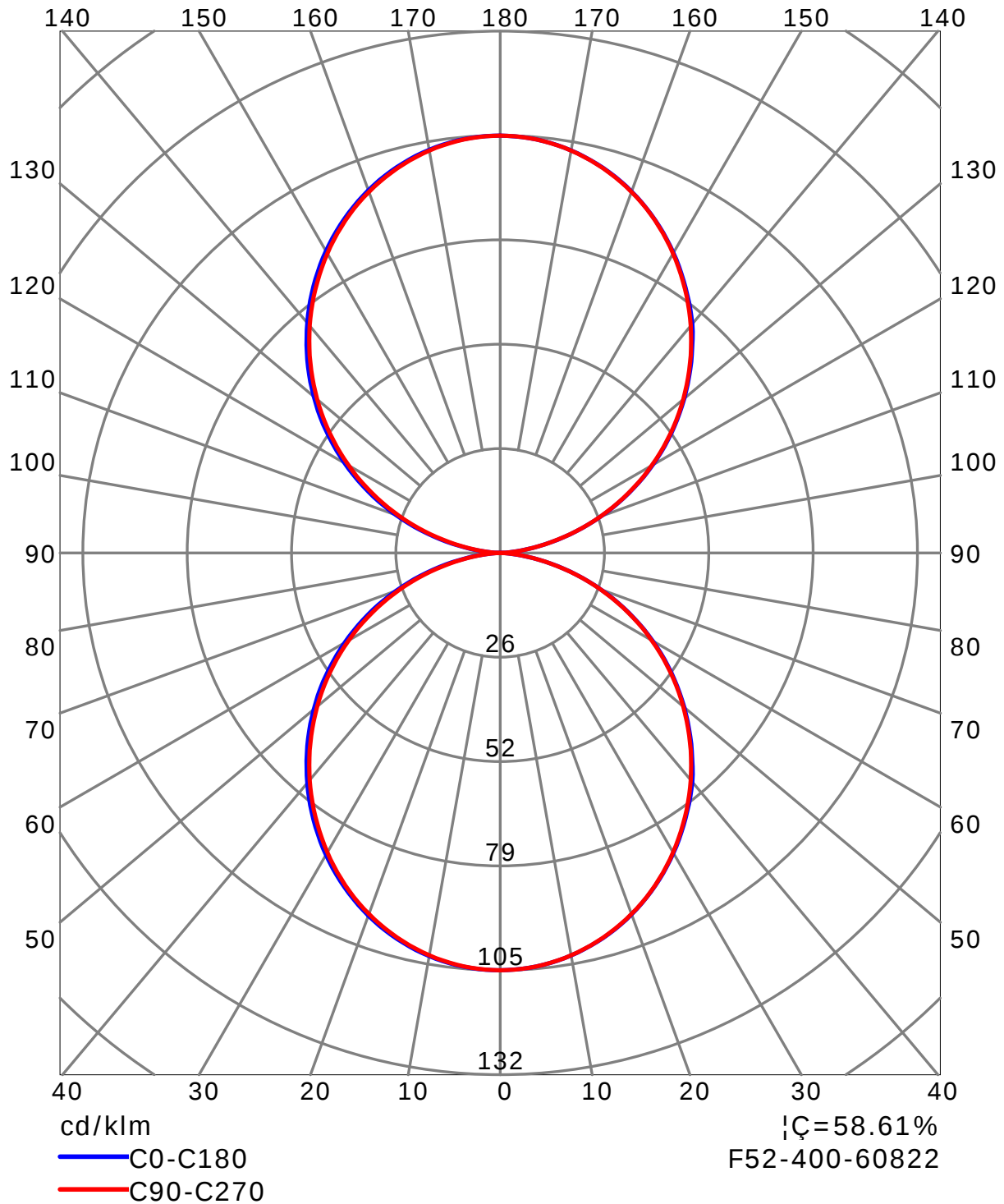
Luminous Intensity Distribution Curve



C Plane (°):0.0-180.0: 10.0
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-2000
Distance: 7.970 m
Humidity:
Inspector:

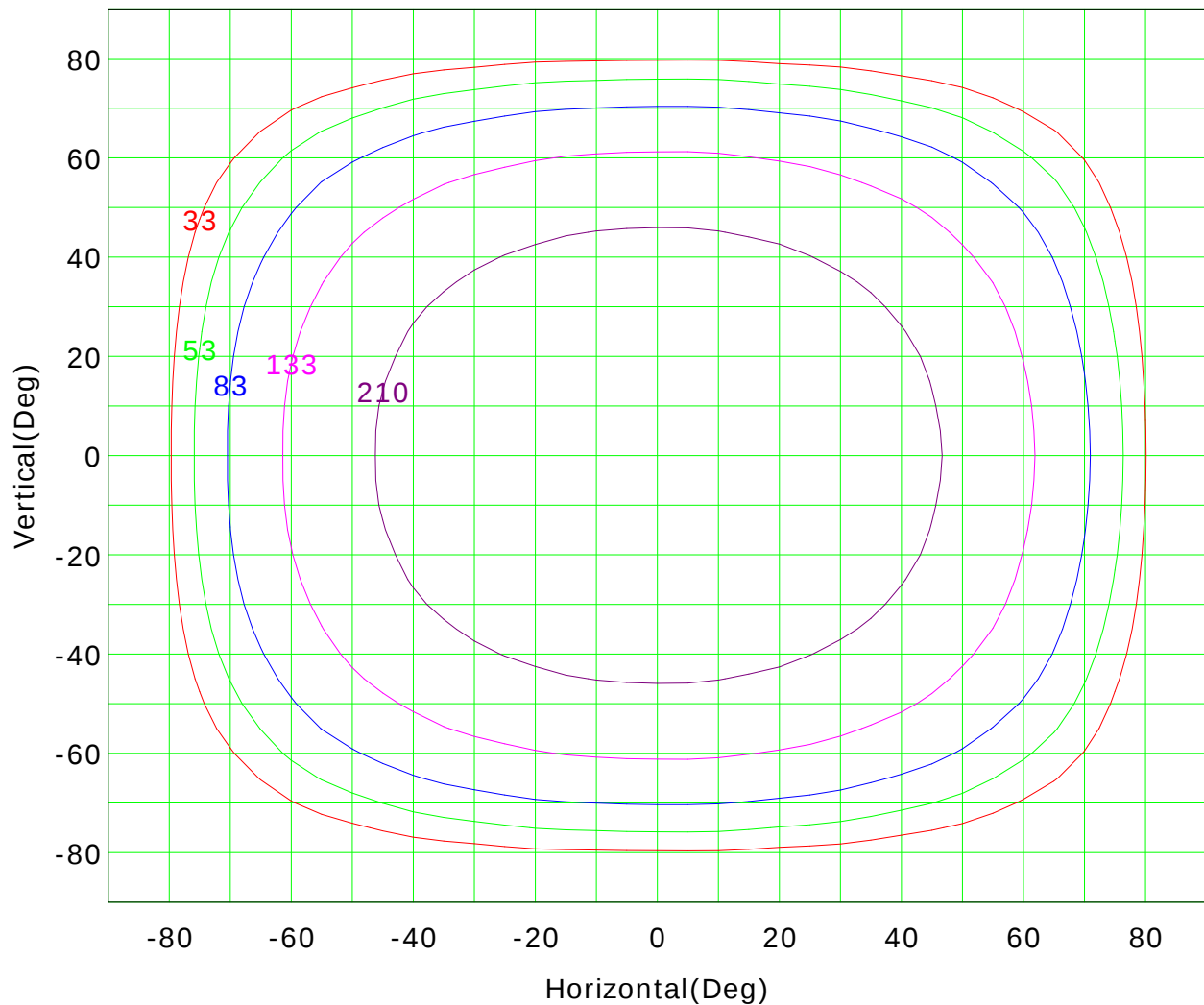
Luminous Intensity Distribution Curve(cd / klm)



C Plane (°): 0.0-180.0: 10.0
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°): 0.0-180.0: 1.0
Test Device: GPM-2000
Distance: 7.970 m
Humidity:
Inspector:

Isocandela (rectangle)



I_{max} (100%): 334 cd

(10%):	33 cd	(16%):	53 cd
(25%):	83 cd	(40%):	133 cd
(63%):	210 cd	(100%):	334 cd

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

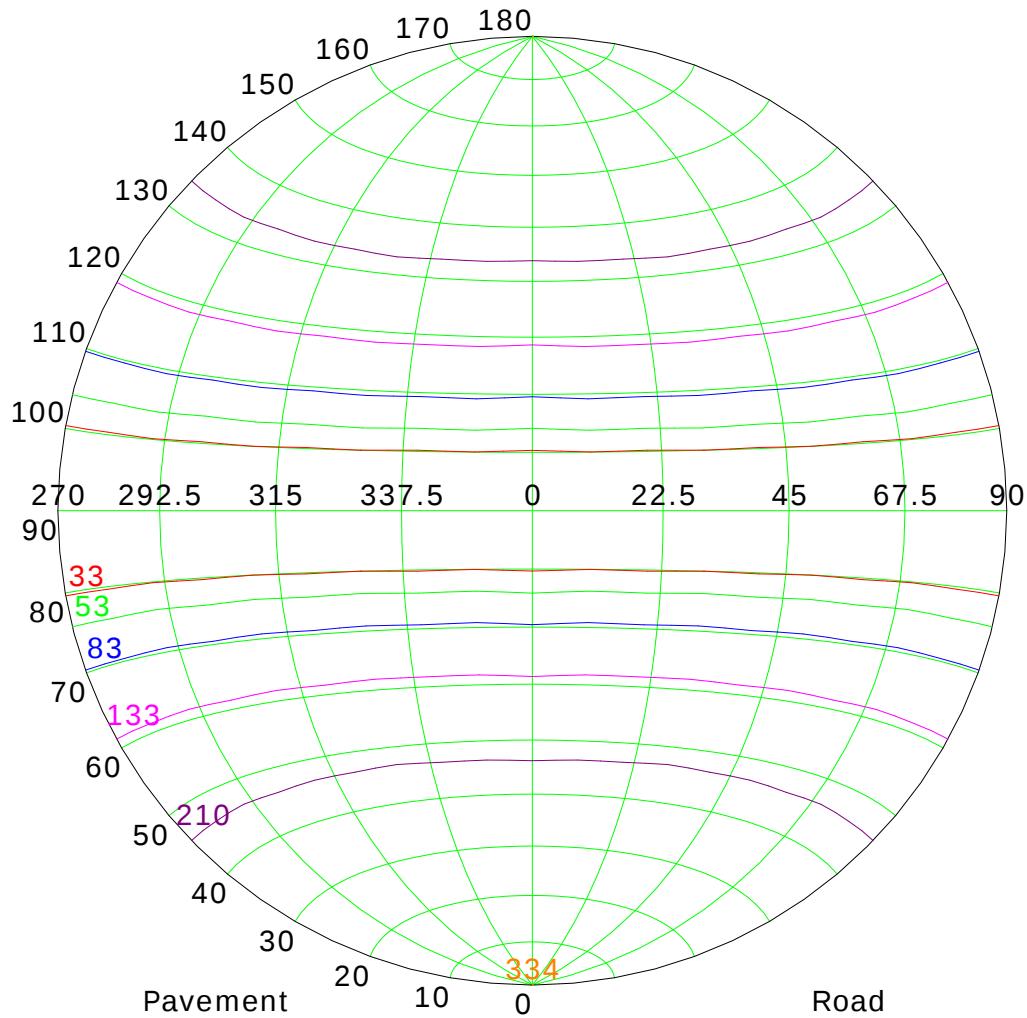
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Isocandela (sphere)



I_{max} (100%): 334 cd

(10%):	33 cd	(16%):	53 cd
(25%):	83 cd	(40%):	133 cd
(63%):	210 cd	(100%):	334 cd

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

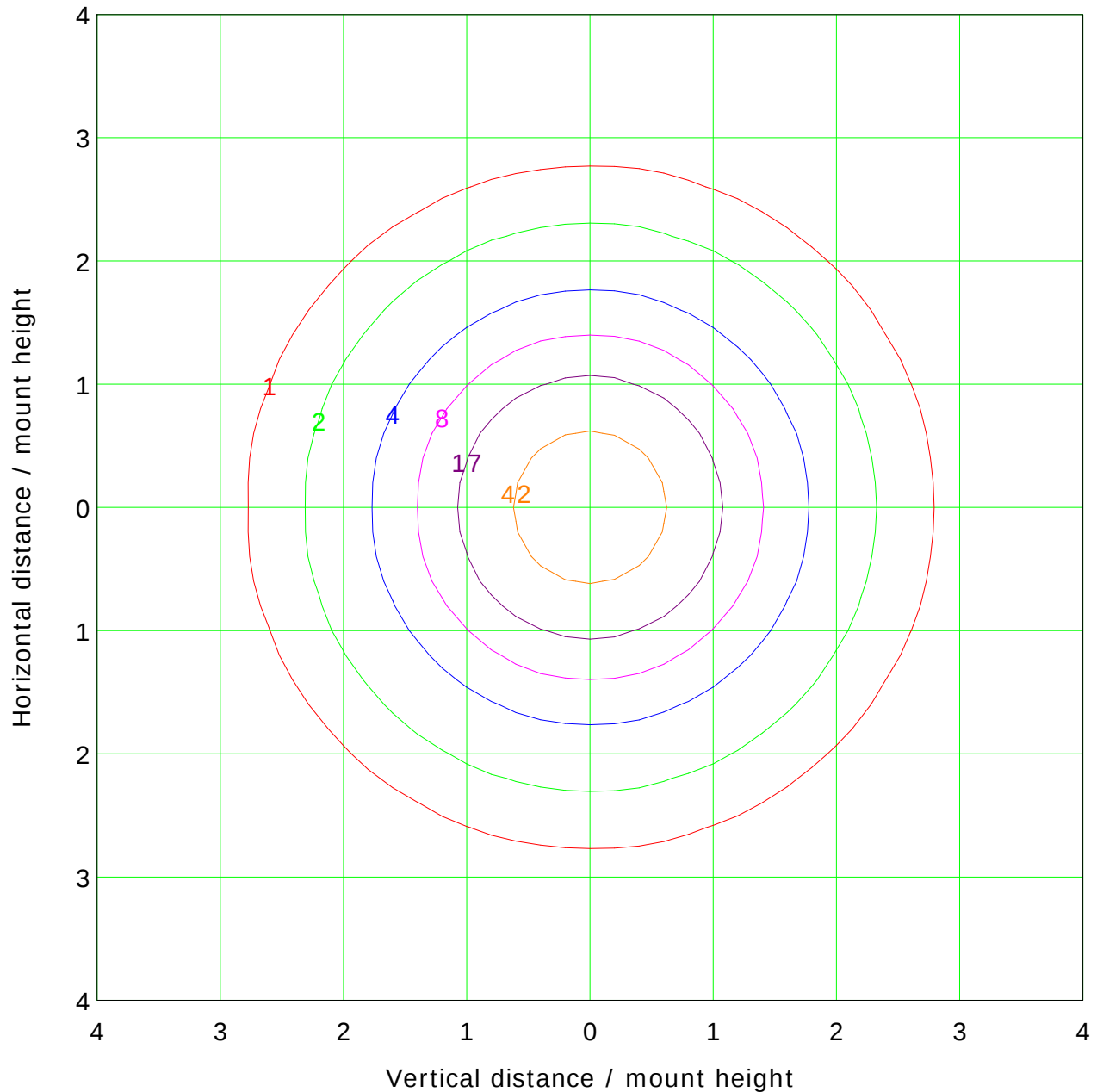
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

IsoLux Plot



Mounting Height: 2.0m		Max Lux(100%): 83.4 lx	
— (1%):	0.8 lx	— (2%):	1.7 lx
— (5%):	4.2 lx	— (10%):	8.3 lx
— (20%):	16.7 lx	— (50%):	41.7 lx
— (100%):	83.4 lx		

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-2000

Distance: 7.970 m

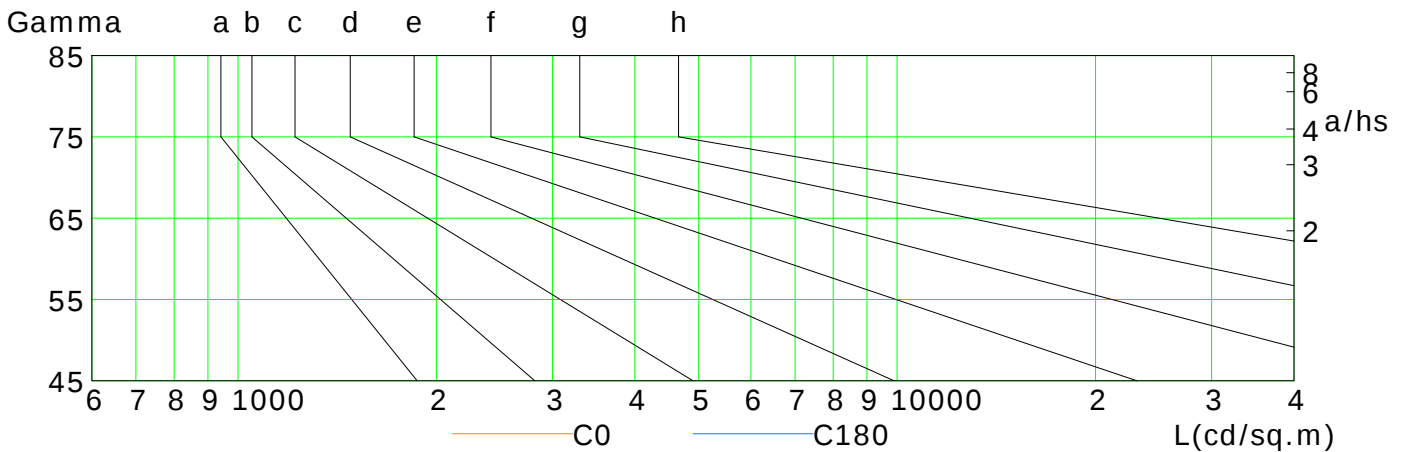
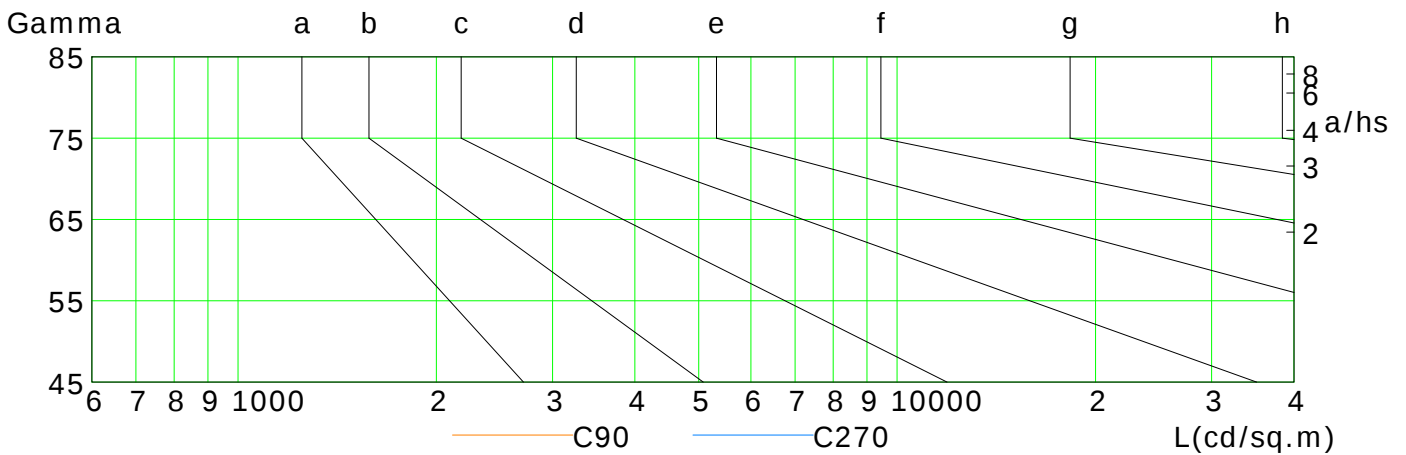
Humidity:

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	216	192	167	141	114	86	58	32	10
C90	214	191	166	140	113	85	58	32	10
C180	218	195	170	144	117	89	61	34	11
C270	214	191	166	140	113	85	58	32	10

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

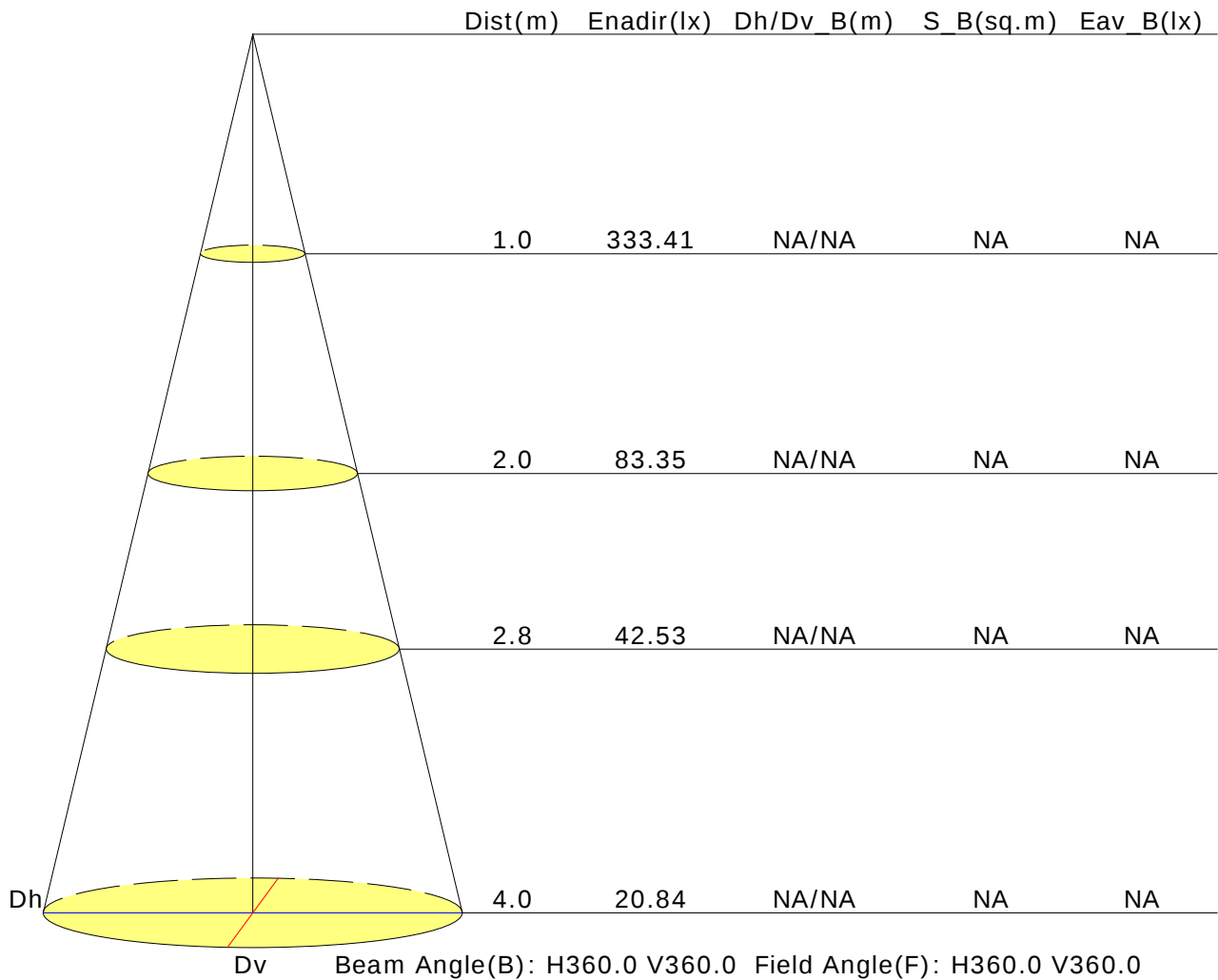
Test Device: GPM-2000

Distance: 7.970 m

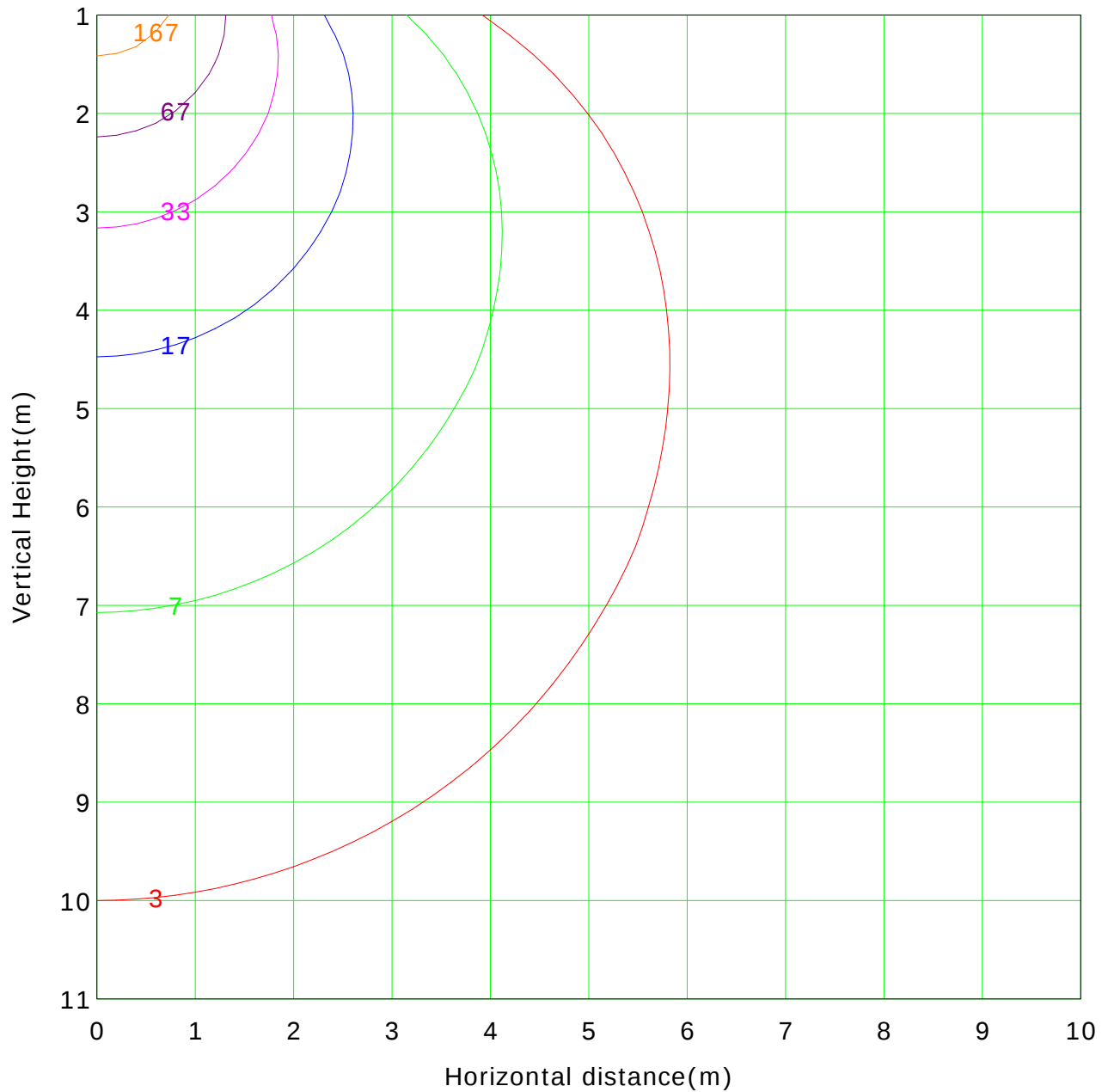
Humidity:

Inspector:

Illuminance at a Distance



Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 11.0m Max Lux: 333.4 lx

(1%): 3.3 lx (2%): 6.7 lx
(5%): 16.7 lx (10%): 33.3 lx
(20%): 66.7 lx (50%): 166.7 lx
(100%): 333.4 lx

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Report No.:

Test Time: 03/02/2020 11:23

Luminaire Property

Luminaire Manufacturer: Lighting line

Luminaire Description: LLP-SH02-03 + LLD-03-FS

Lamp Description: F52-400-60822

Number of Lamps: 2

Lumens per Lamp: 1579

Voltage: 24.0 V

Current: 1.180 A

Power: 28.32 W

Power Factor: 1.000

Photometric Results

CIE Class: General Diffuse

Measurement Flux: 1818.5 lm

Downward Ratio: 28.79%

Total Rated Lamp Lumens: 3158.0 lm

Efficiency: 57.58%

Upward Ratio: 28.79%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 360.0, 360.0, 360.0, 360.0

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 360.0, 360.0, 360.0, 360.0

Luminaire Efficacy Rating (LER): 64.26

Central Intensity: 342.26 cd

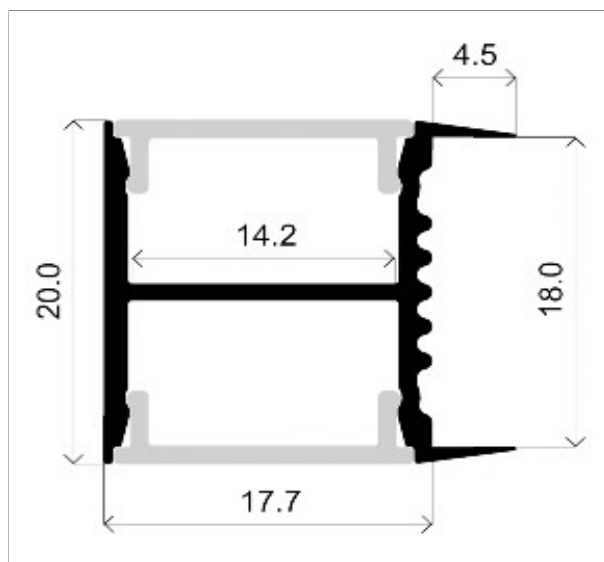
Max. Intensity: 342.27 cd

Pos of Max. Intensity: H0 V0

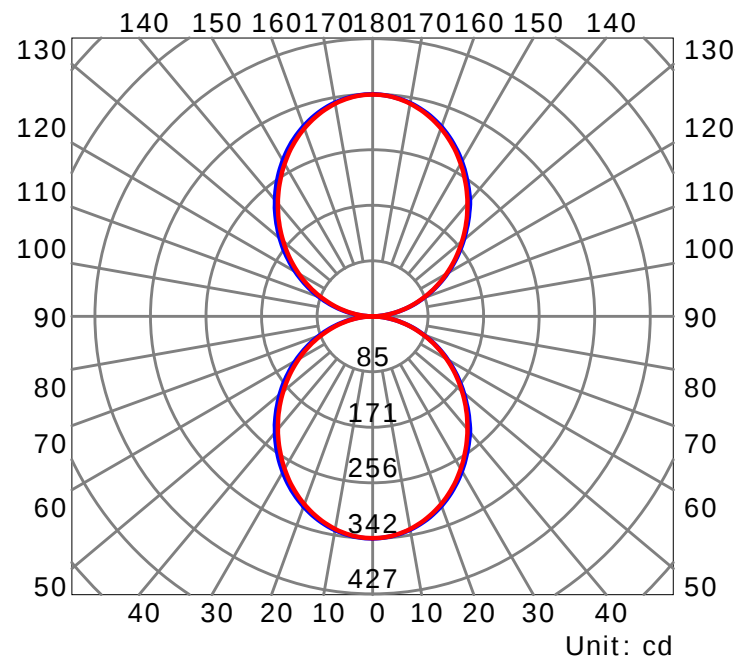
S/MH(C0/C180): 1.20

S/MH(C90/C270): 1.19

Picture Of Luminaire



Luminous Intensity Distribution Curve



— C0-C180 — C90-C270

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

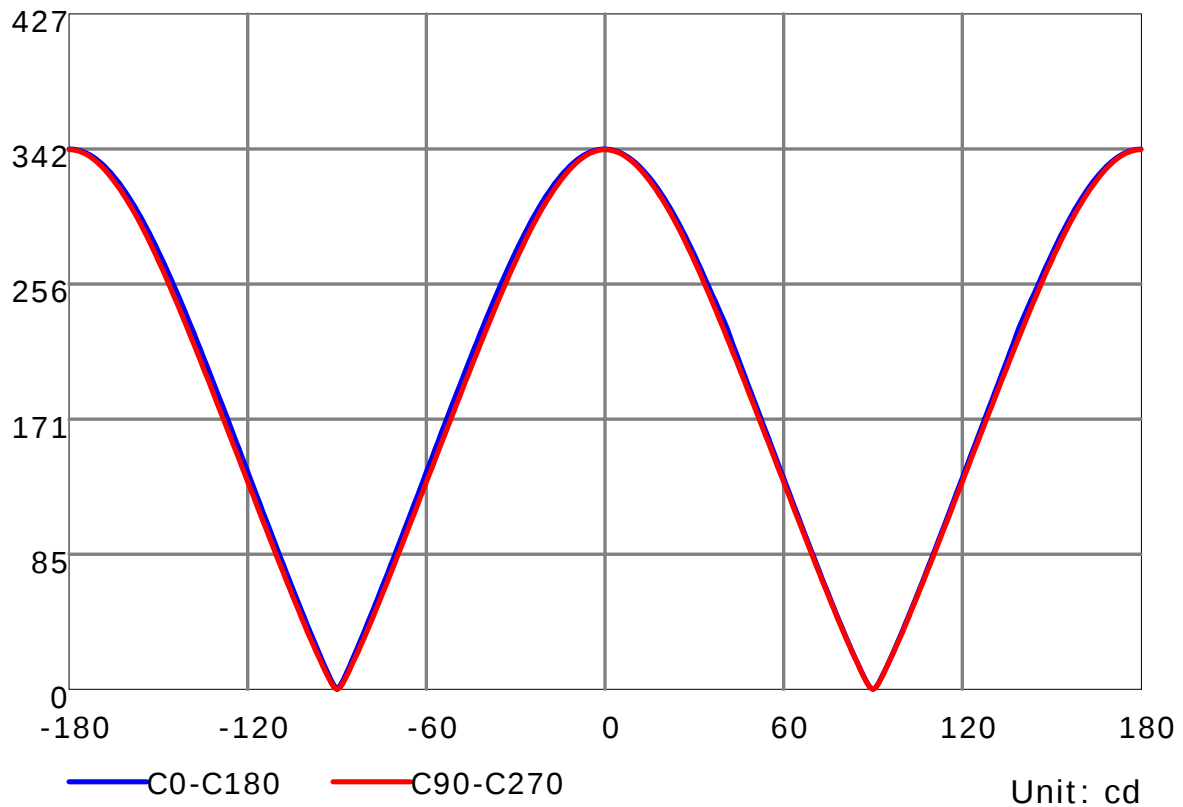
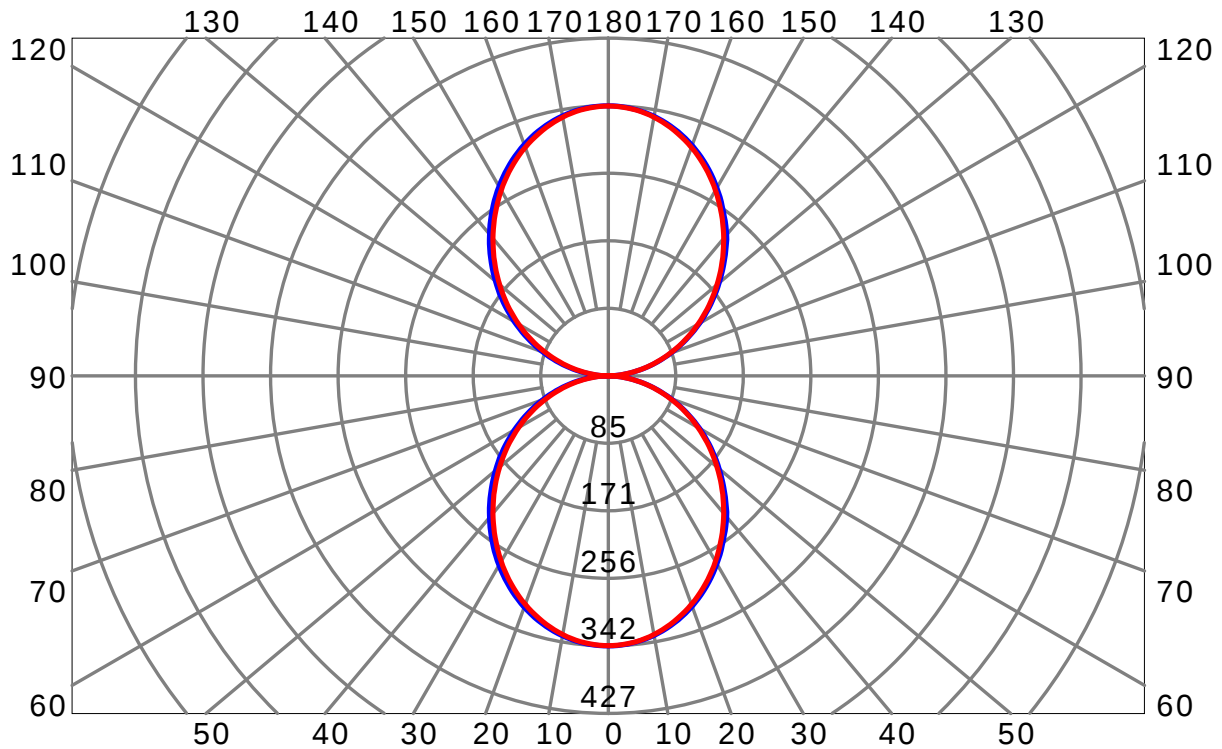
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Luminous Intensity Distribution Curve

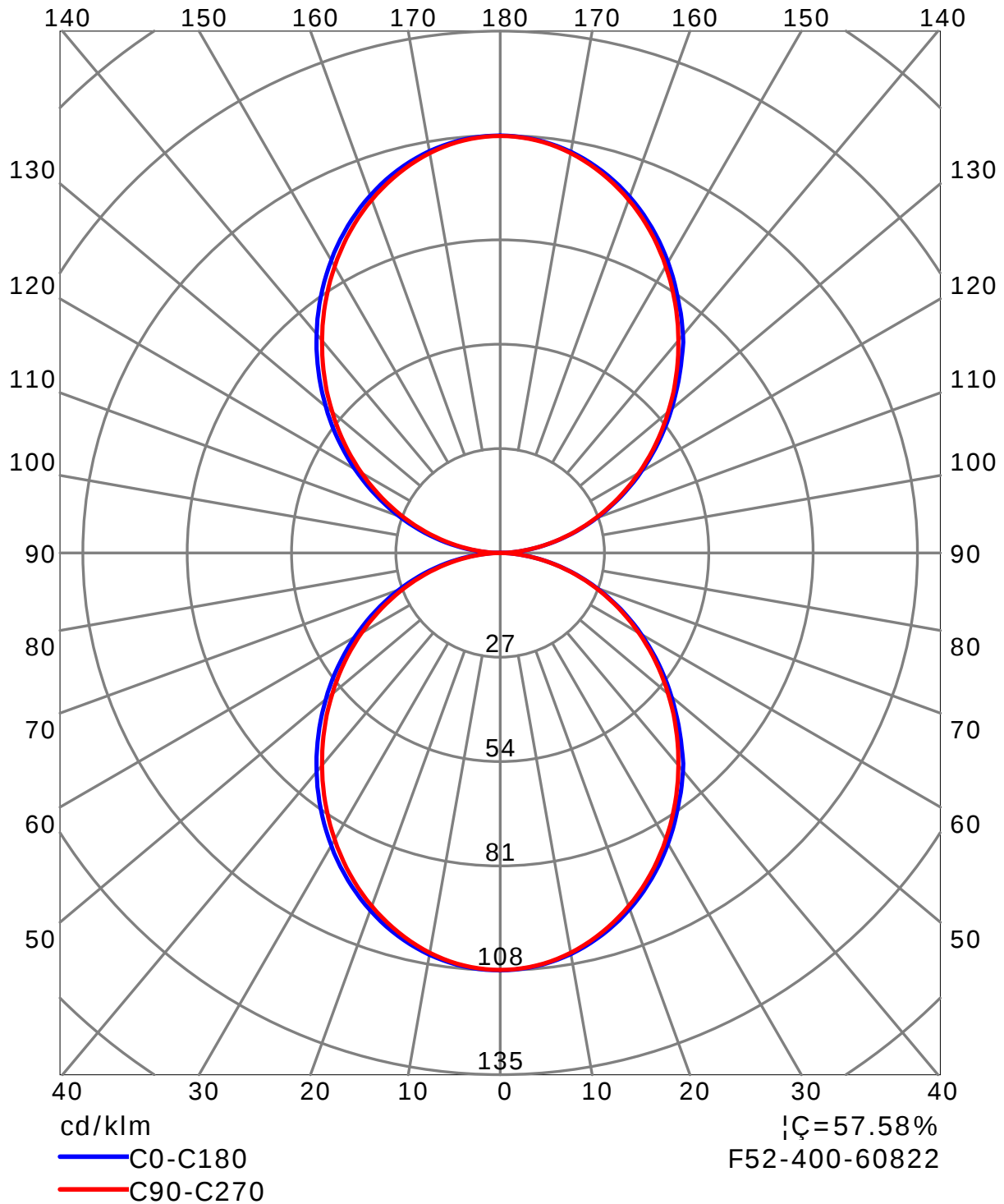


Unit: cd

C Plane (°):0.0-180.0: 10.0
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-2000
Distance: 7.970 m
Humidity:
Inspector:

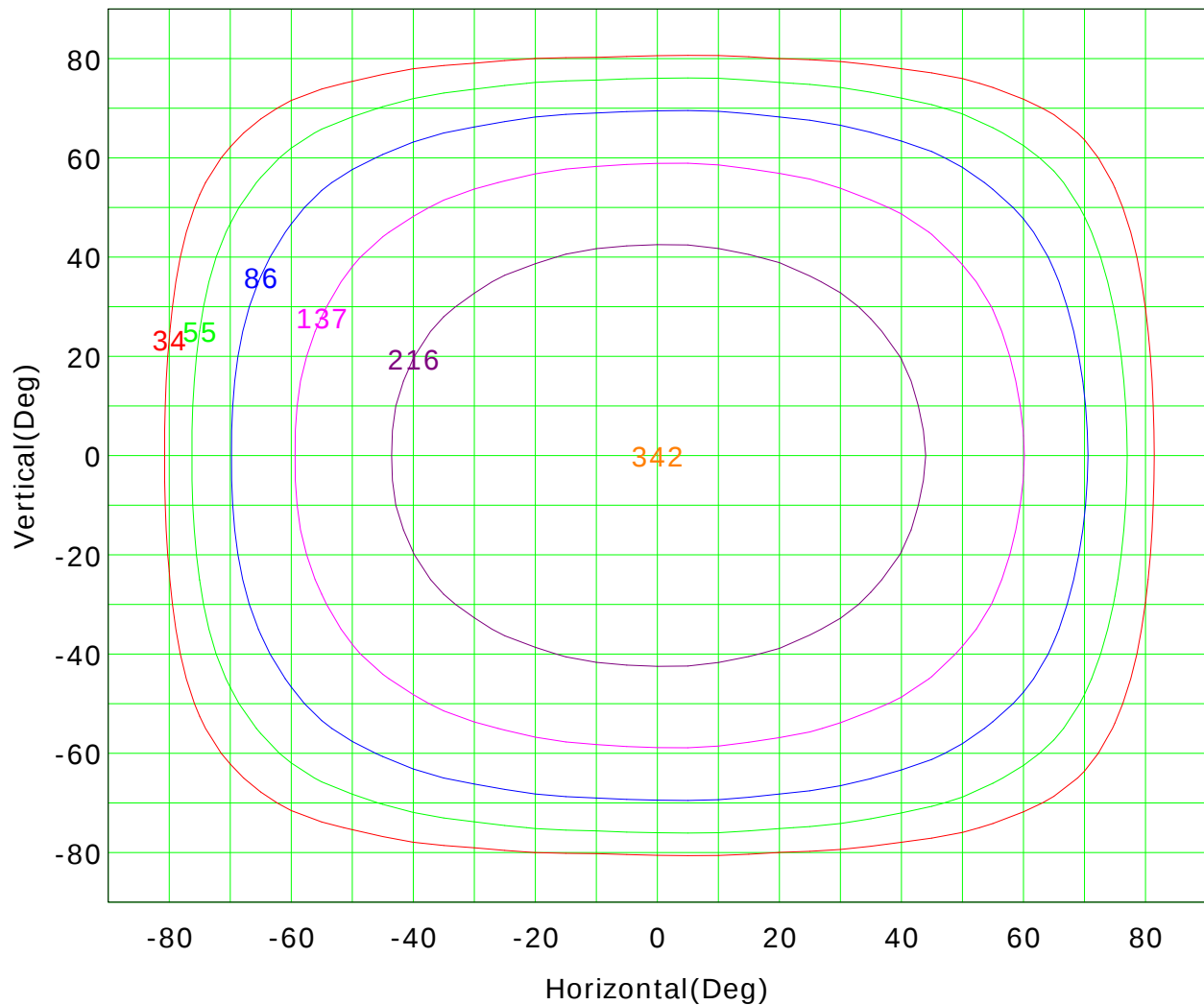
Luminous Intensity Distribution Curve(cd / klm)



C Plane (°):0.0-180.0: 10.0
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-2000
Distance: 7.970 m
Humidity:
Inspector:

Isocandela (rectangle)



I_{max} (100%): 342 cd

(10%):	34 cd	(16%):	55 cd
(25%):	86 cd	(40%):	137 cd
(63%):	216 cd	(100%):	342 cd

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

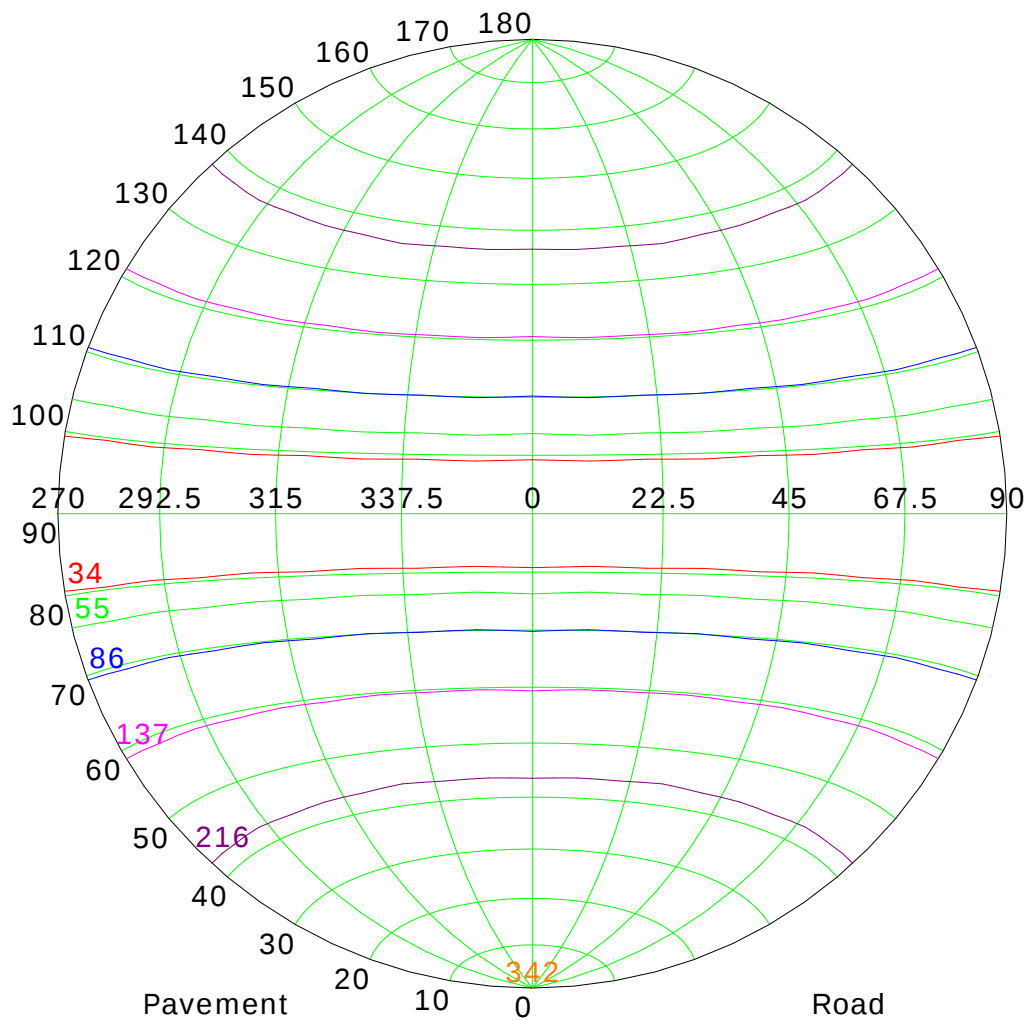
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Isocandela (sphere)



I_{max} (100%): 342 cd

(10%):	34 cd	(16%):	55 cd
(25%):	86 cd	(40%):	137 cd
(63%):	216 cd	(100%):	342 cd

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

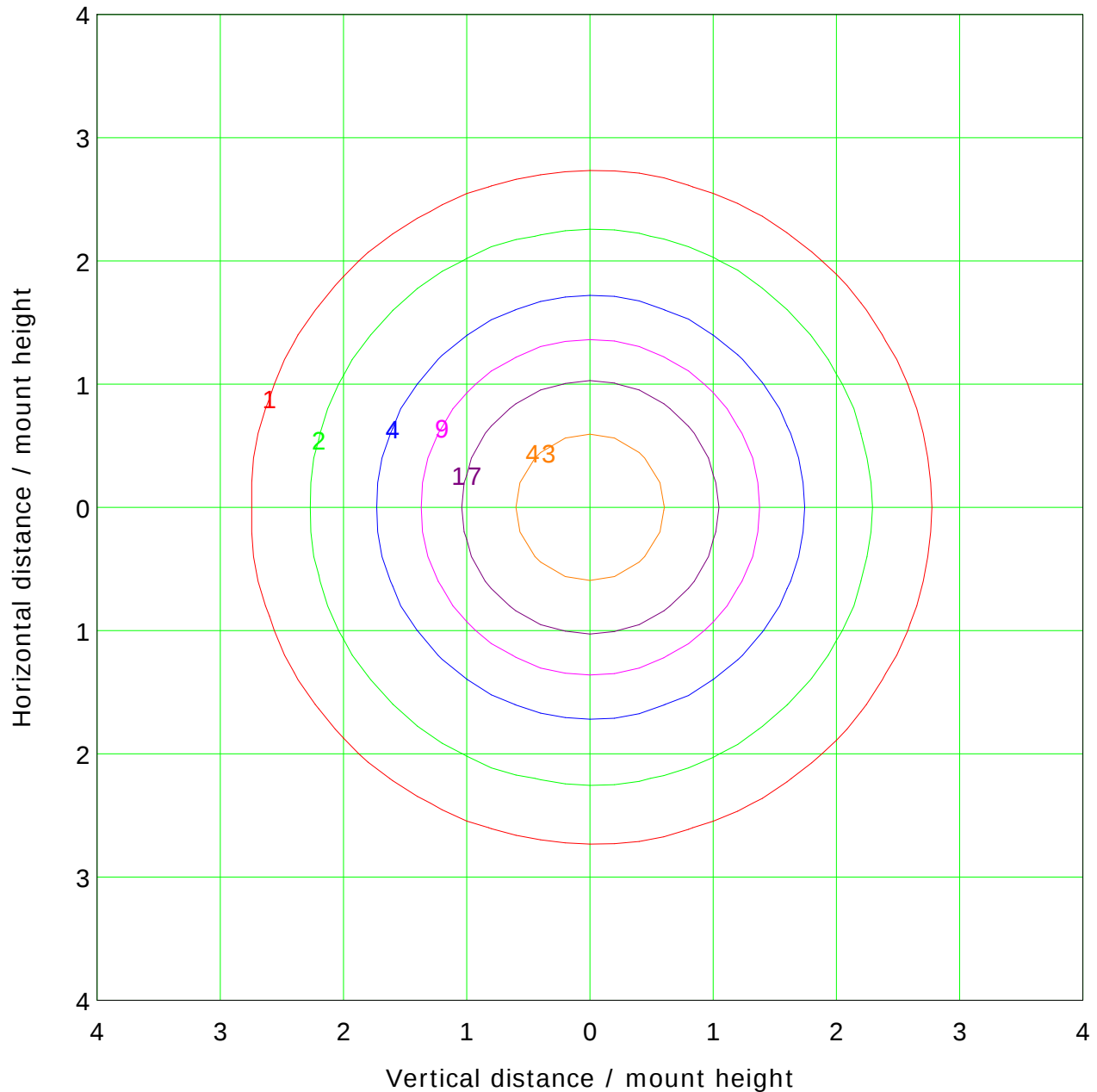
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

IsoLux Plot



Mounting Height: 2.0m		Max Lux(100%): 85.6 lx	
— (1%):	0.9 lx	— (2%):	1.7 lx
— (5%):	4.3 lx	— (10%):	8.6 lx
— (20%):	17.1 lx	— (50%):	42.8 lx
— (100%):	85.6 lx		

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

Test Device: GPM-2000

Distance: 7.970 m

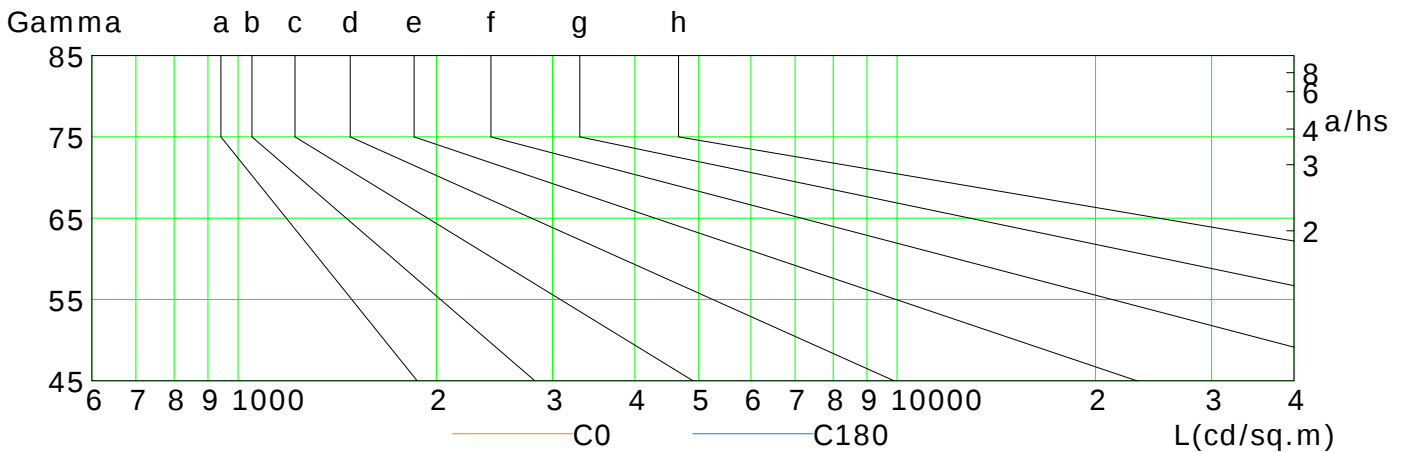
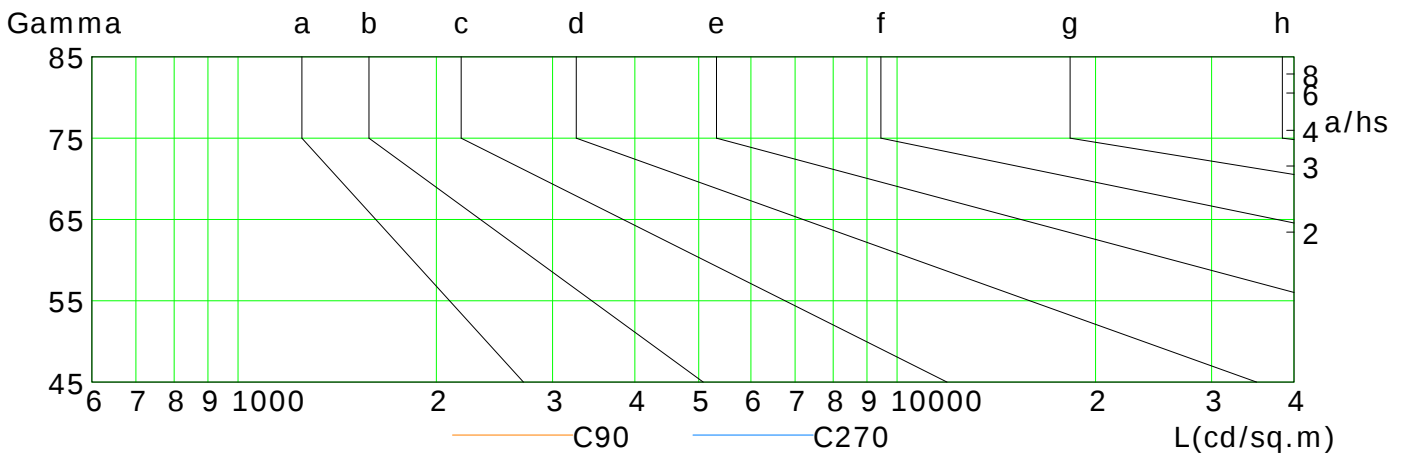
Humidity:

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	208	183	159	134	109	84	61	37	16
C90	204	180	156	131	107	83	60	37	16
C180	211	187	162	138	113	88	64	41	18
C270	204	180	156	131	107	83	60	37	16

C Plane (°):0.0-180.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

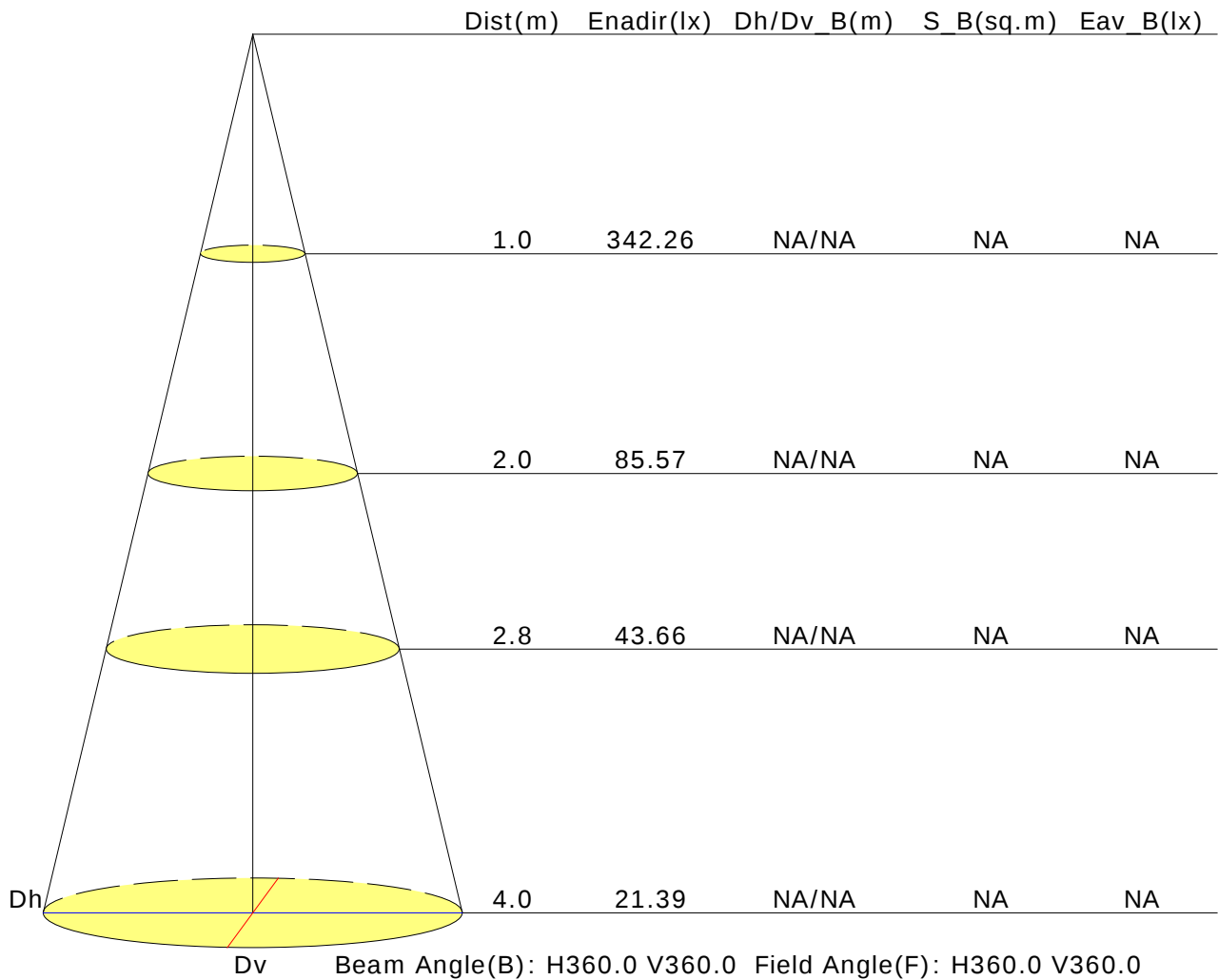
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Illuminance at a Distance



Vertical IsoLux Plot

