

Report No.:

Test Time: 05/09/2018 15:38

Luminaire Property

Luminaire Manufacturer: Lighting Line

Luminaire Description: LLP-AN04-09 + LLD-09-UK

Lamp Description: F52-400-60822

Voltage: 24.0 V

Power: 14.10 W

Lumens per Lamp: 1579 lm

Current: 0.588 A

Power Factor: 1.000

Photometric Results

CIE Class: Direct

Measurement Flux: 1461.6 lm

Downward Ratio: 99%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 154.6, 128.7, 142.1, 142.1

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 112.7, 118.2, 121.7, 121.1

Luminaire Efficacy Rating (LER): 103.71

Max. Intensity: 540.29 cd

S/MH(C0/C180): 1.28

Total Rated Lamp Lumens: 1461.6 lm

Efficiency: 100%

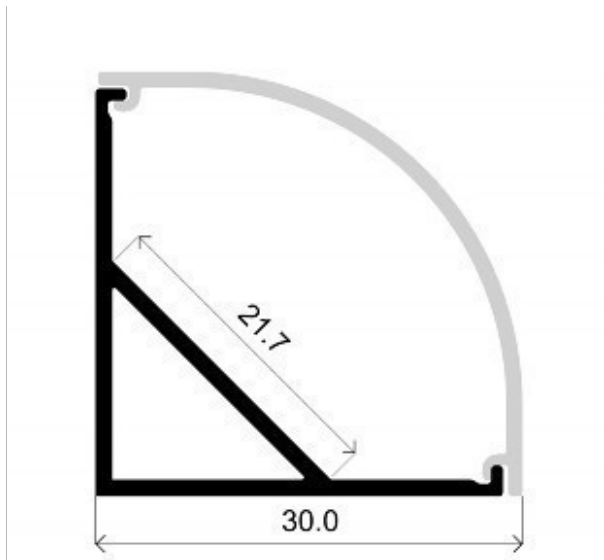
Upward Ratio: 1%

Central Intensity: 536.71 cd

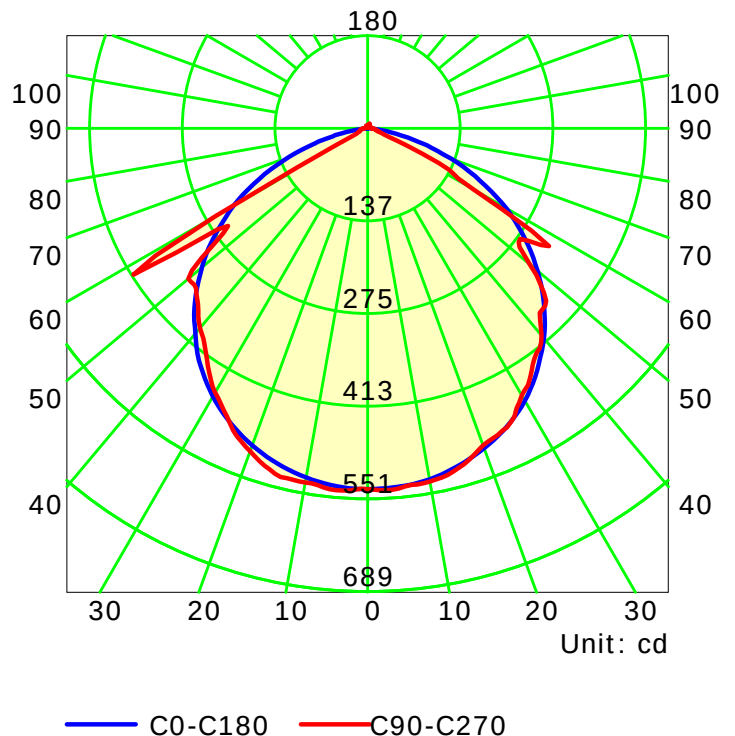
Pos of Max. Intensity: H270 V5

S/MH(C90/C270): 1.26

Picture Of Luminaire



Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

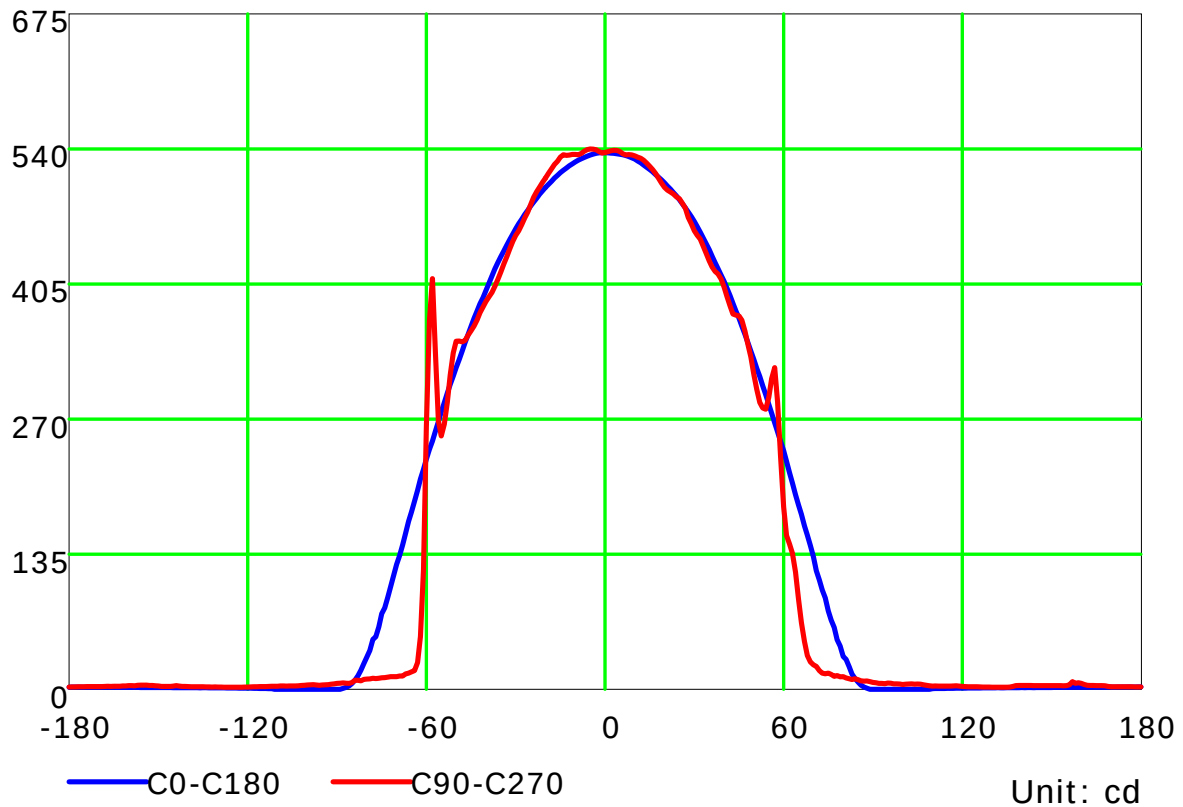
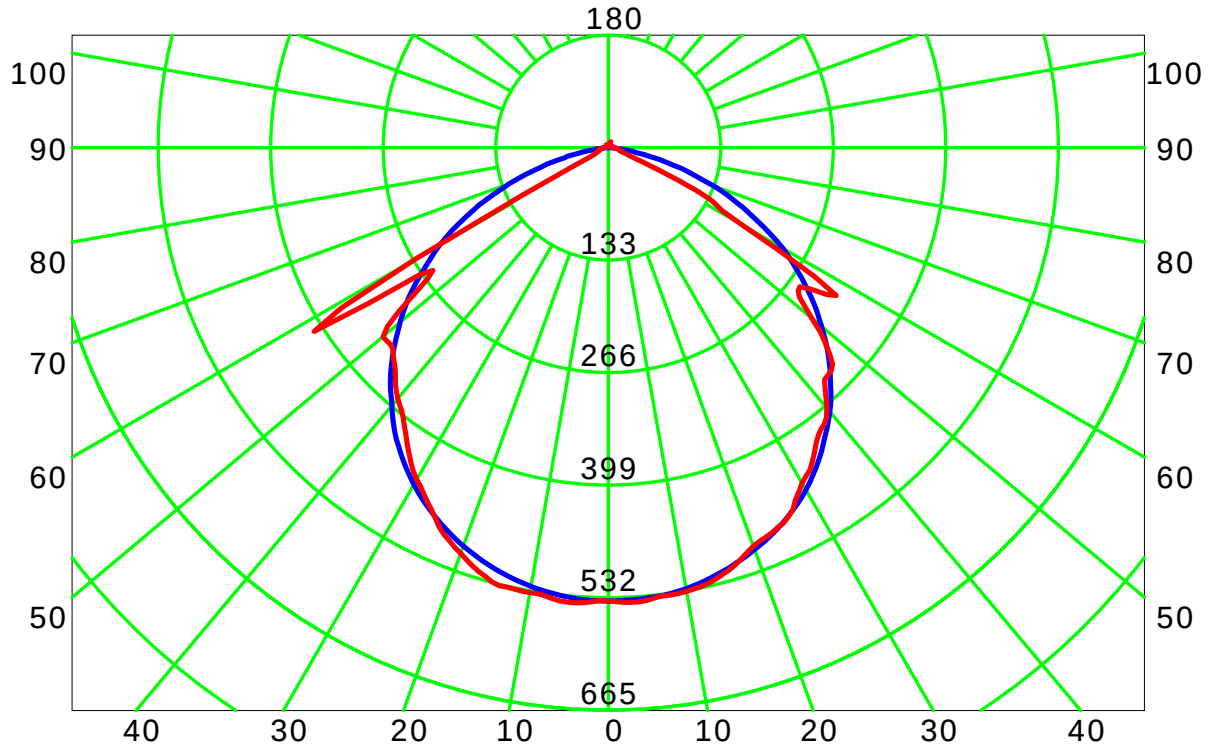
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

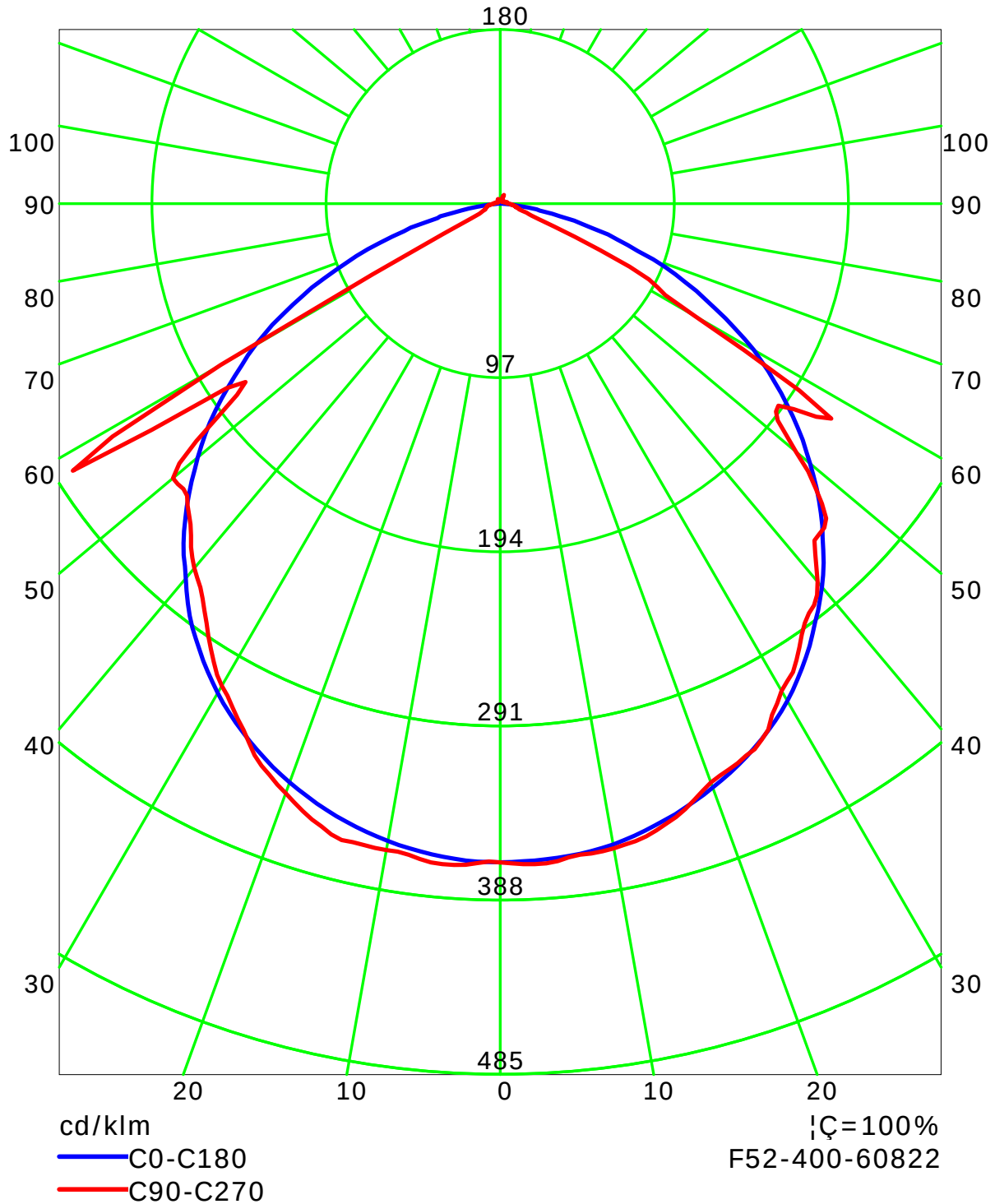
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

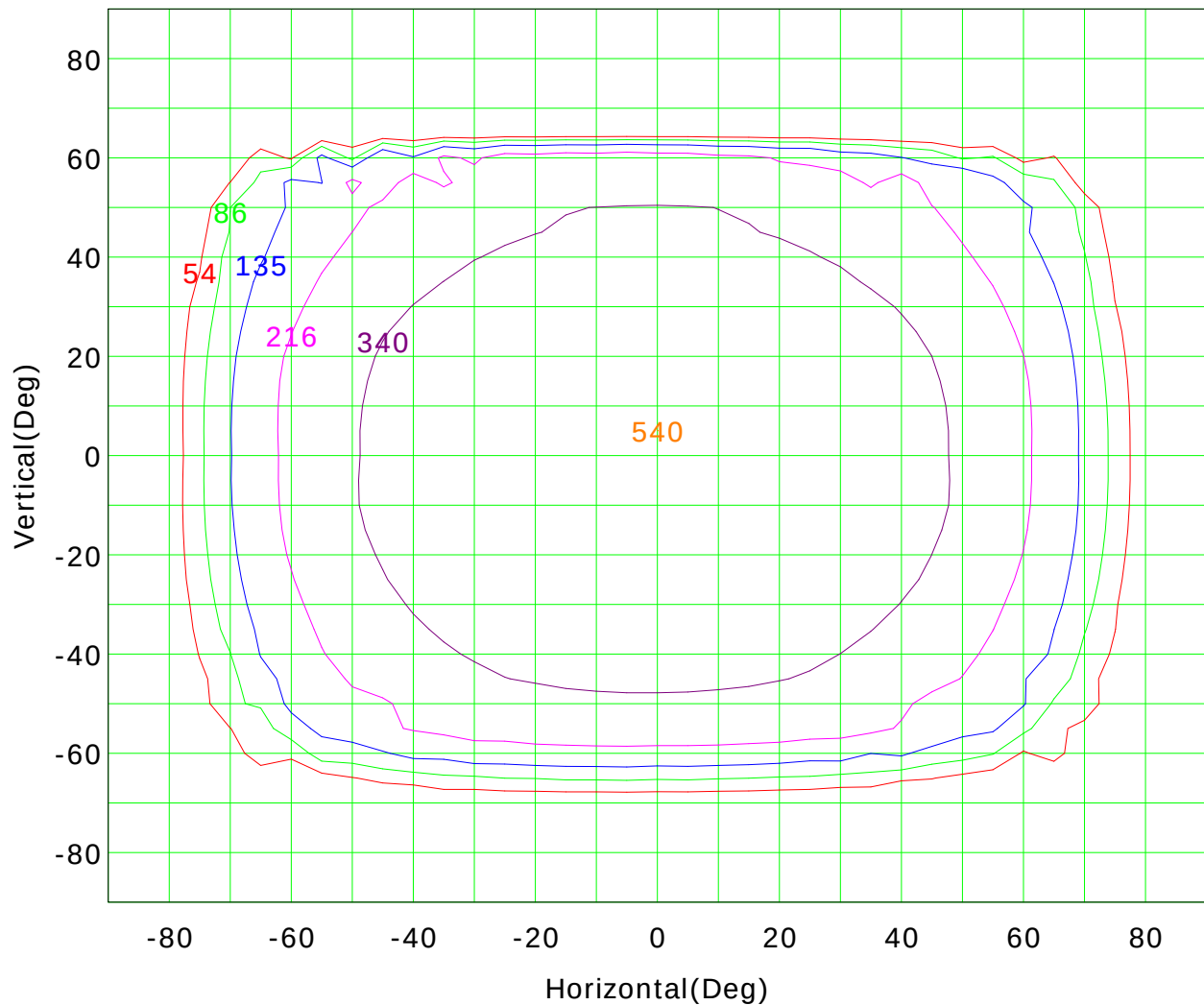
Luminous Intensity Distribution Curve(cd / klm)



C Plane (°):0.0-360.0: 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%): 540 cd

(10%):	54 cd	(16%):	86 cd
(25%):	135 cd	(40%):	216 cd
(63%):	340 cd	(100%):	540 cd

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

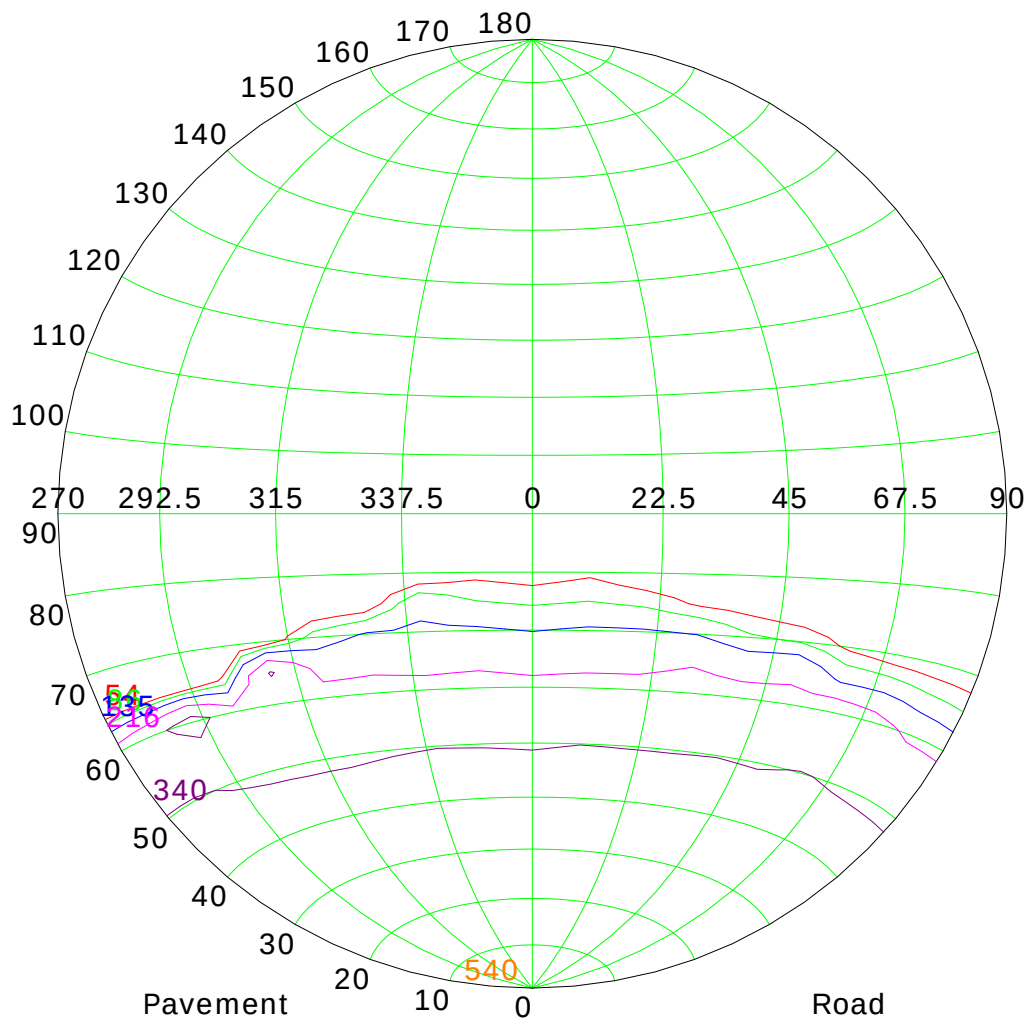
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Isocandela (sphere)



I_{max} (100%): 540 cd

(10%):	54 cd	(16%):	86 cd
(25%):	135 cd	(40%):	216 cd
(63%):	340 cd	(100%):	540 cd

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

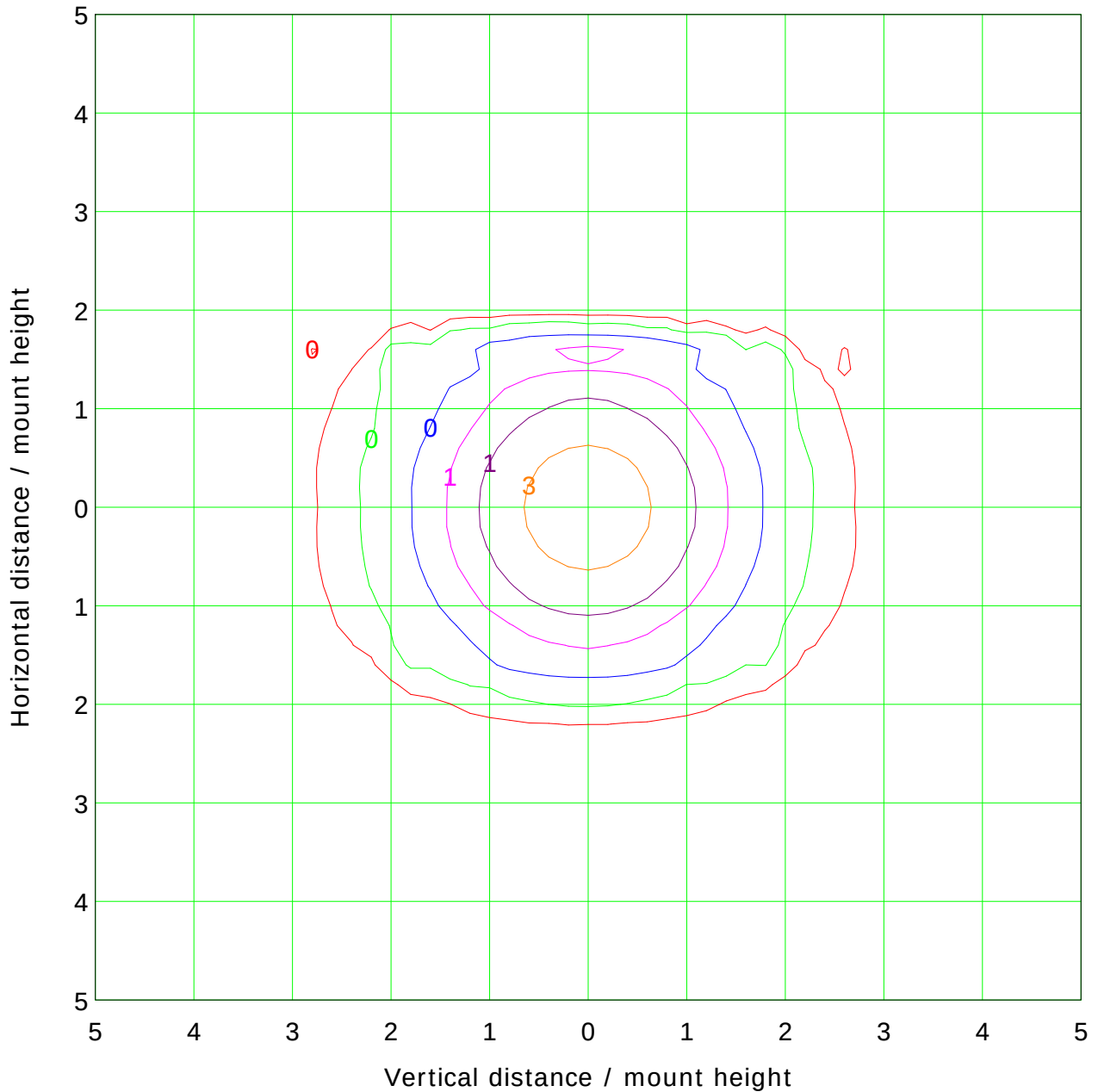
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

IsoLux Plot



Mounting Height: 10.0m		Max Lux(100%): 5.4 lx	
(1%):	0.1 lx	(2%):	0.1 lx
(5%):	0.3 lx	(10%):	0.5 lx
(20%):	1.1 lx	(50%):	2.7 lx
(100%):	5.4 lx		

C Plane (°):0.0-360.0: 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

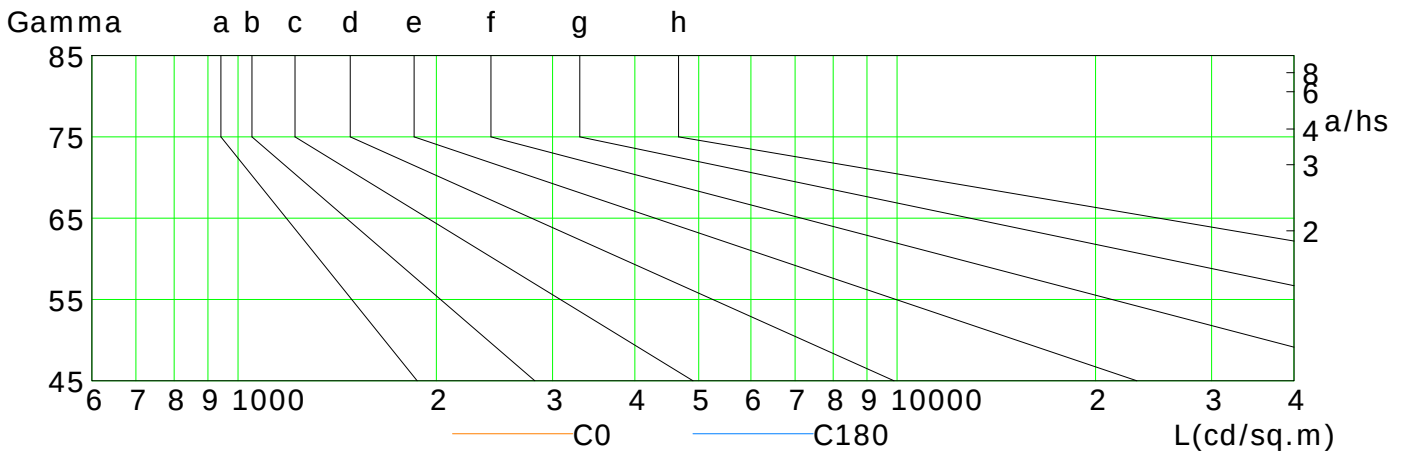
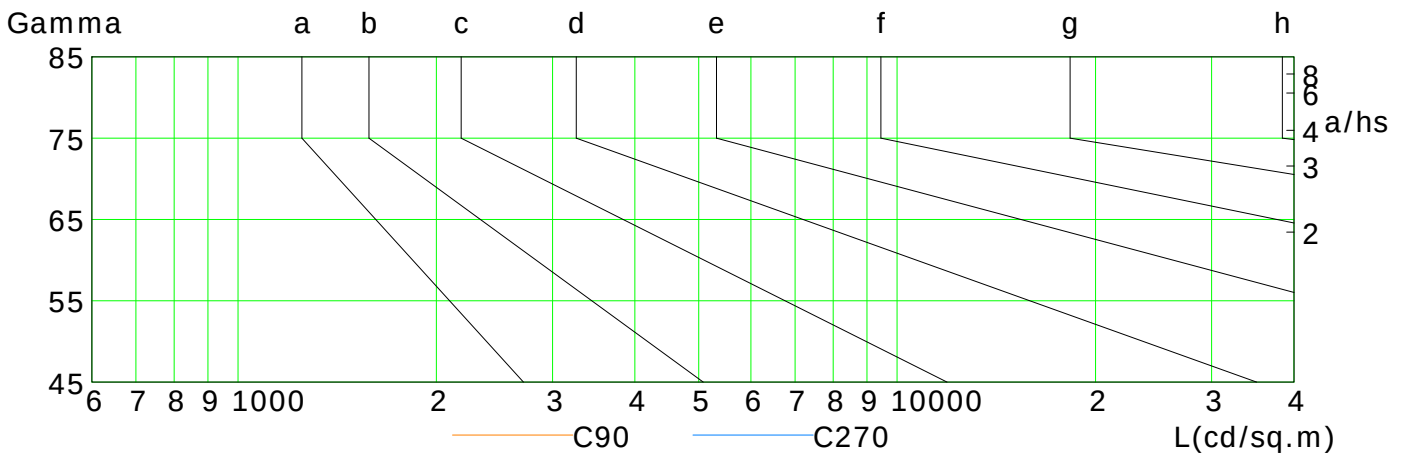
Humidity:

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	371	330	285	239	184	133	78	33	7
C90	373	315	292	182	90	25	16	13	10
C180	363	322	277	230	177	125	76	32	6
C270	359	348	253	263	18	13	12	10	7

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

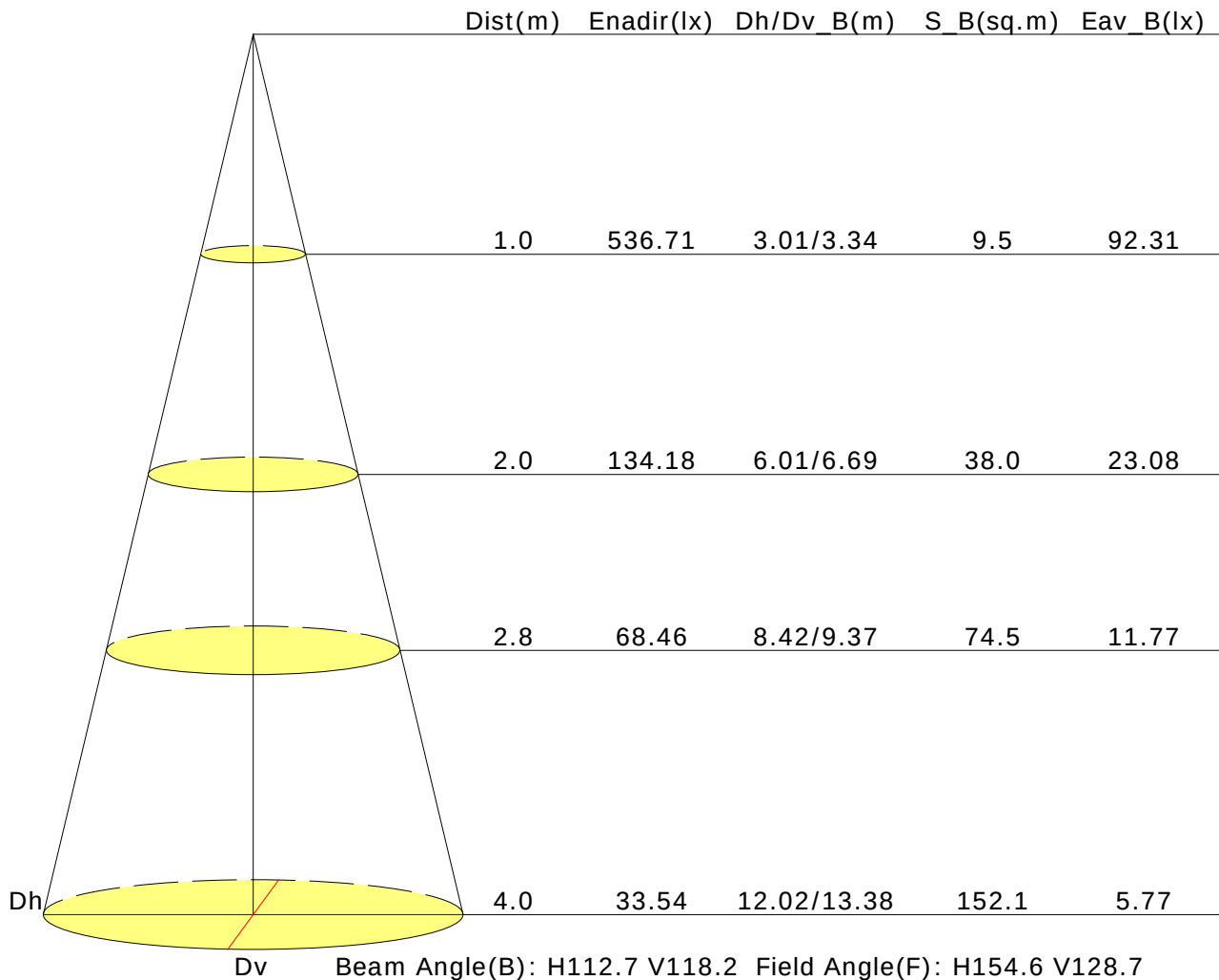
Test Device: GPM-2000

Distance: 7.970 m

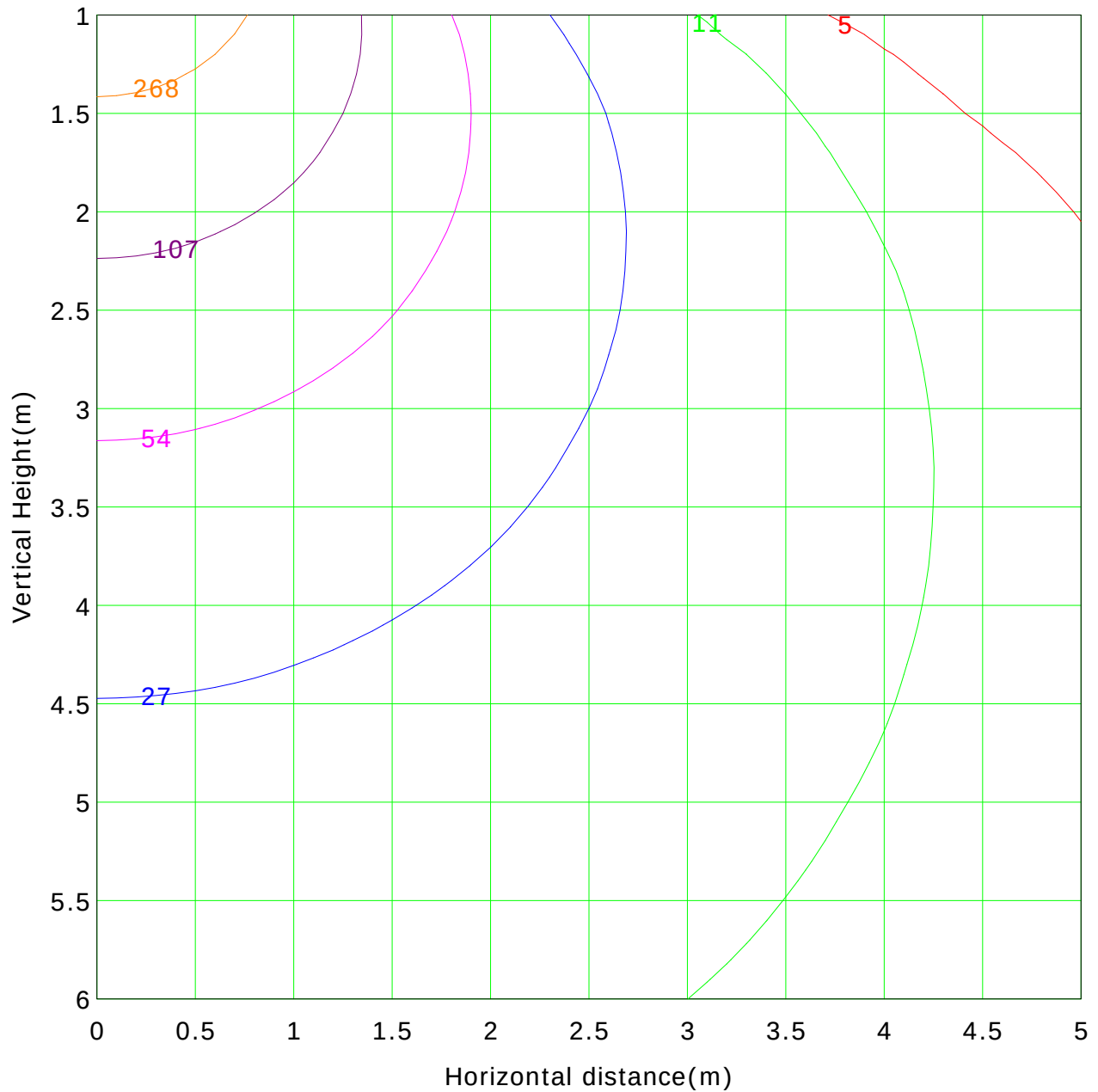
Humidity:

Inspector:

Illuminance at a Distance



Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 6.0m Max Lux: 536.7 lx

(1%): 5.4 lx	(2%): 10.7 lx
(5%): 26.8 lx	(10%): 53.7 lx
(20%): 107.3 lx	(50%): 268.4 lx
(100%): 536.7 lx	

C Plane (°):0.0-360.0: 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: 05/09/2018 16:59

Luminaire Property

Luminaire Manufacturer: Lighting Line

Luminaire Description: LLP-AN04-09 + LLD-09-UM

Lamp Description: F52-400-60822

Number of Lamps: 1

Lumens per Lamp: 1579 lm

Voltage: 24.0 V

Current: 0.588 A

Power: 14.11 W

Power Factor: 1.000

Photometric Results

CIE Class: Direct

Measurement Flux: 1238.7 lm

Downward Ratio: 73.82%

Total Rated Lamp Lumens: 1579.0 lm

Efficiency: 78.45%

Upward Ratio: 4.63%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 158.8, 209.1, 188.1, 187.8

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 110.0, 121.9, 114.3, 114.2

Luminaire Efficacy Rating (LER): 87.84

Central Intensity: 375.76 cd

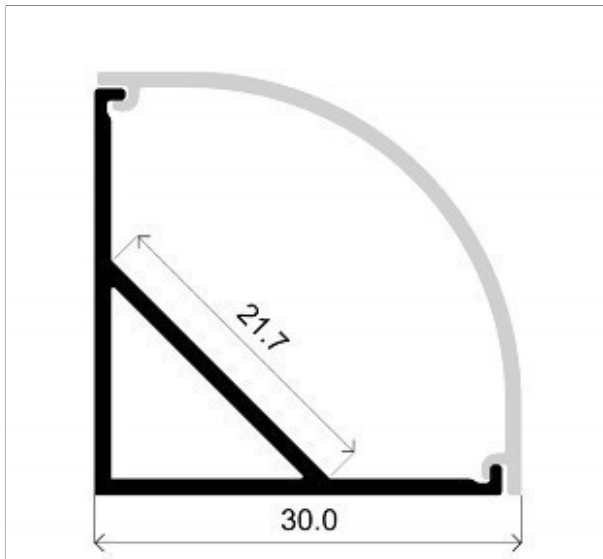
Max. Intensity: 375.77 cd

Pos of Max. Intensity: H0 V0

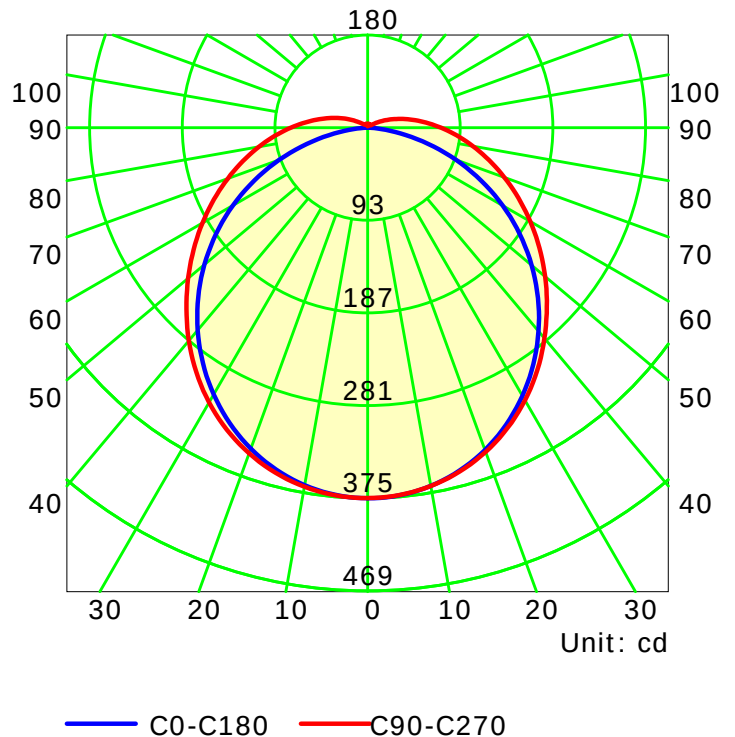
S/MH(C0/C180): 1.24

S/MH(C90/C270): 1.27

Picture Of Luminaire



Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

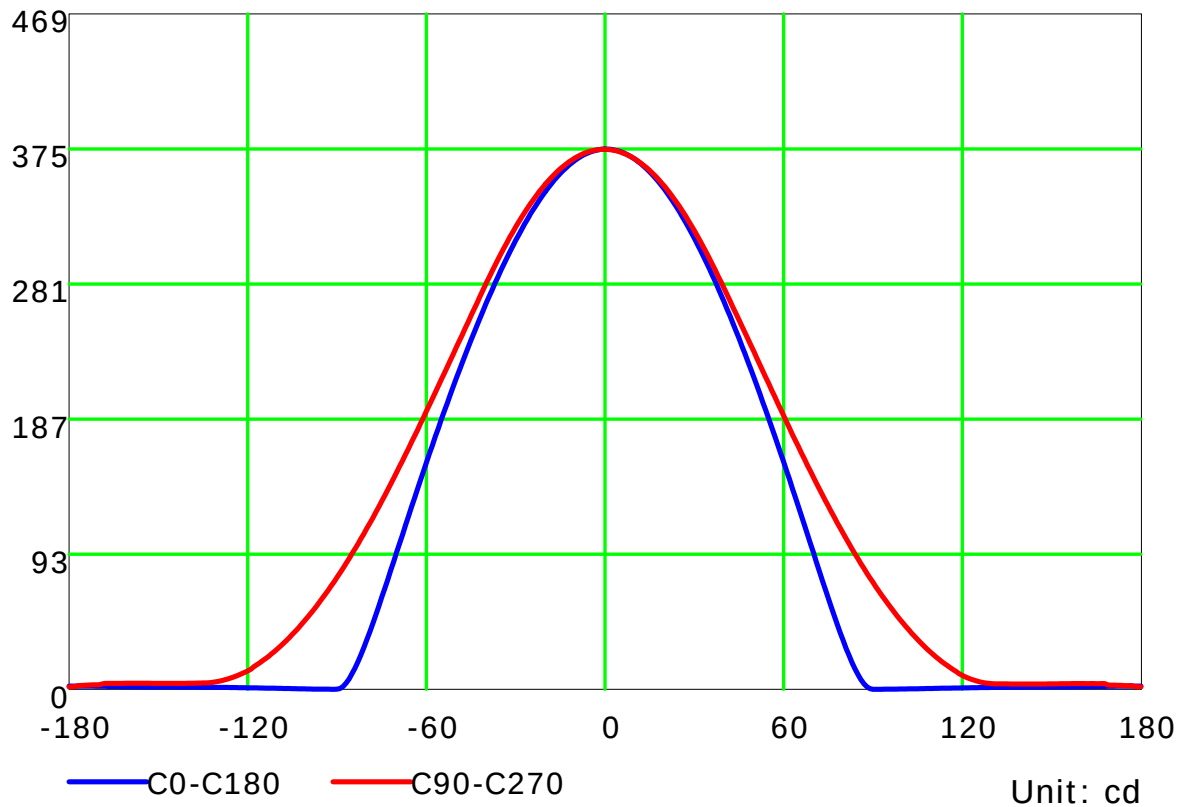
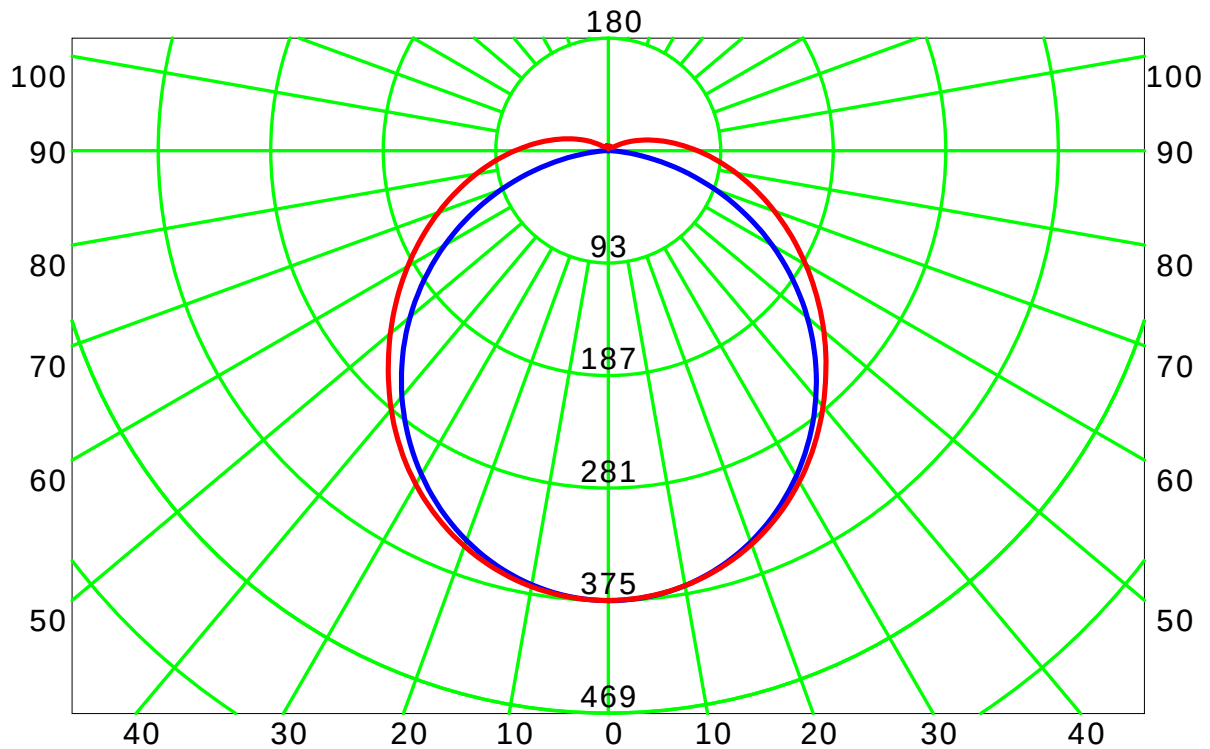
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

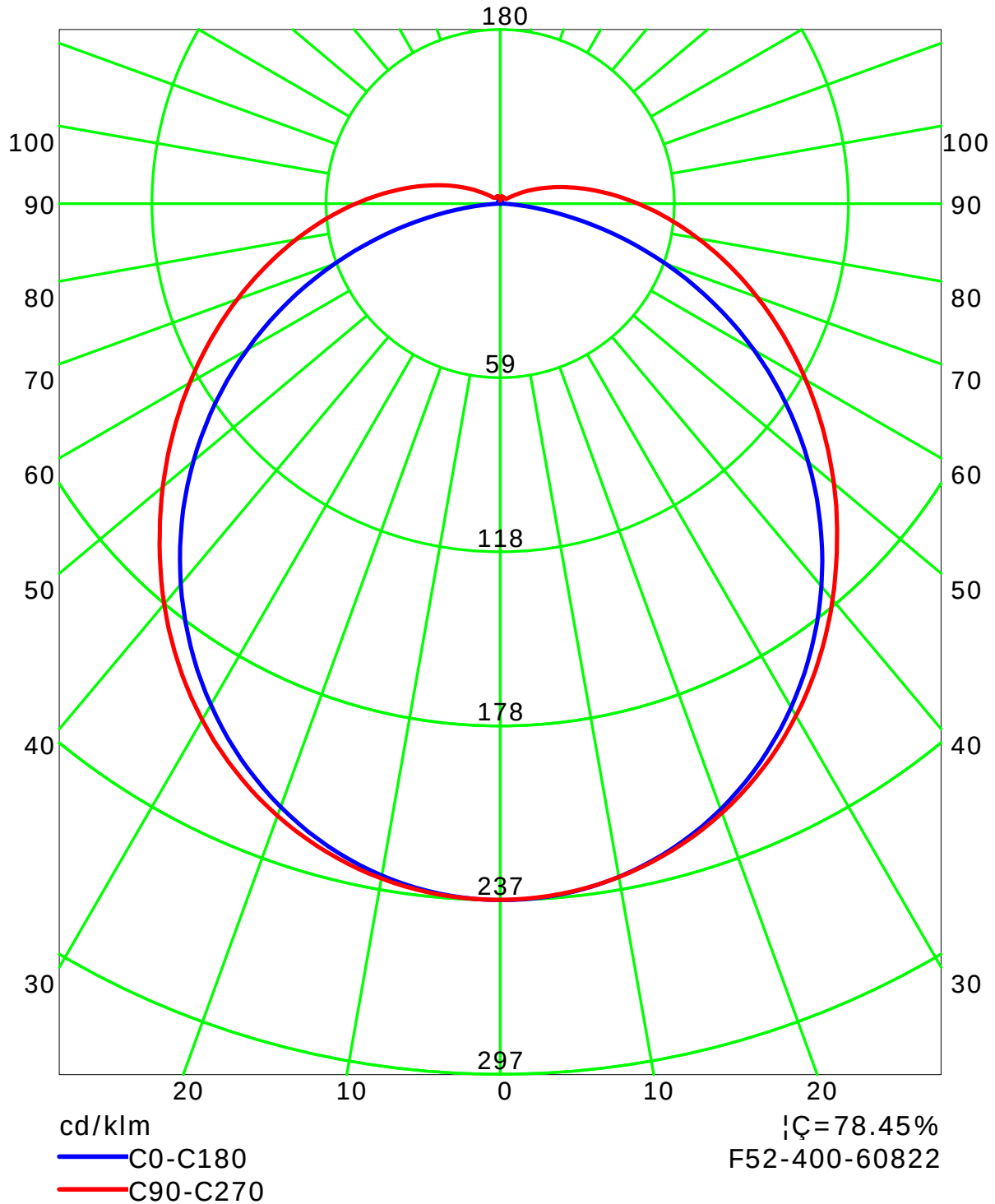
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

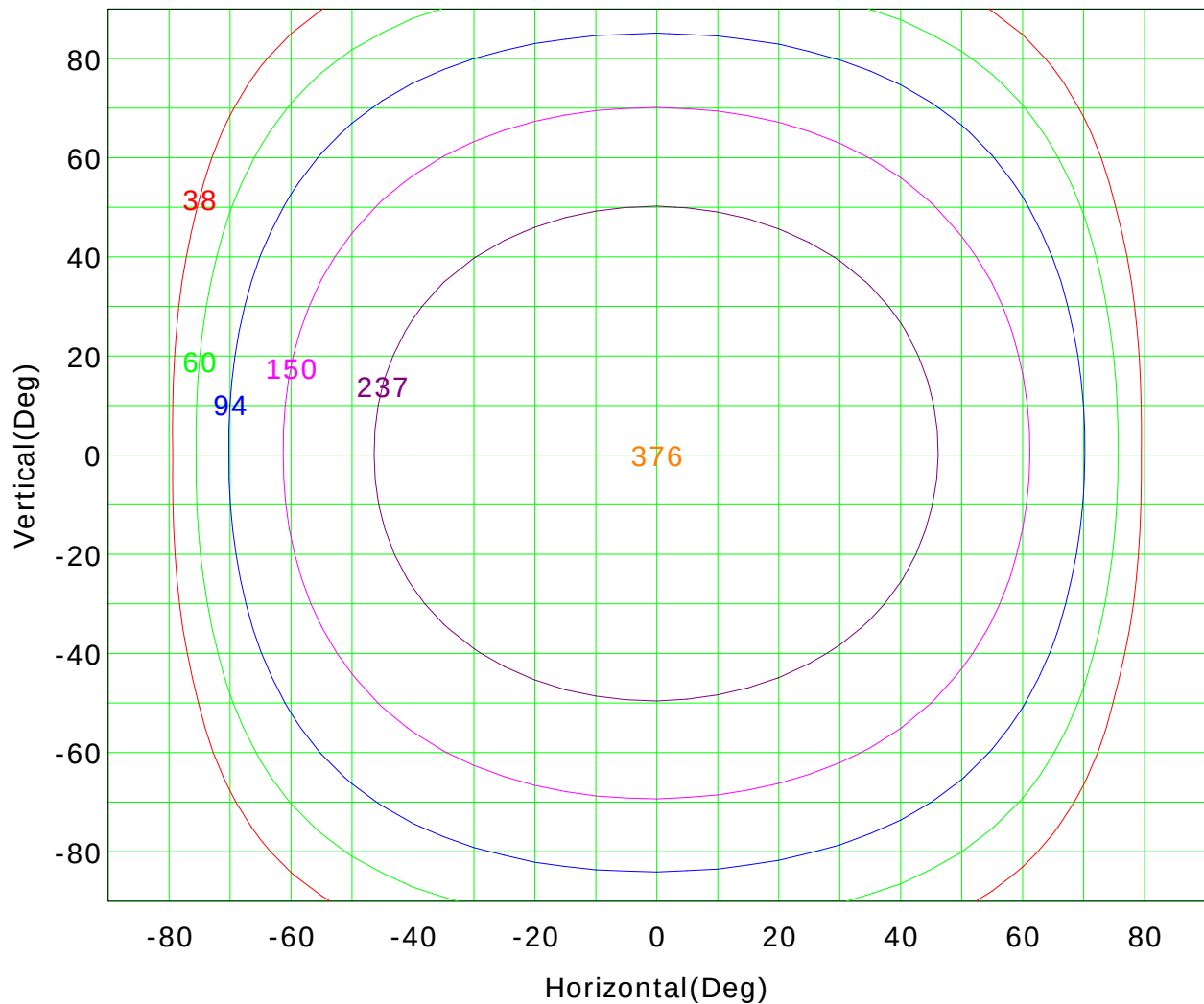
Luminous Intensity Distribution Curve(cd / klm)



C Plane (°):0.0-360.0: 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%): 376 cd

(10%):	38 cd	(16%):	60 cd
(25%):	94 cd	(40%):	150 cd
(63%):	237 cd	(100%):	376 cd

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

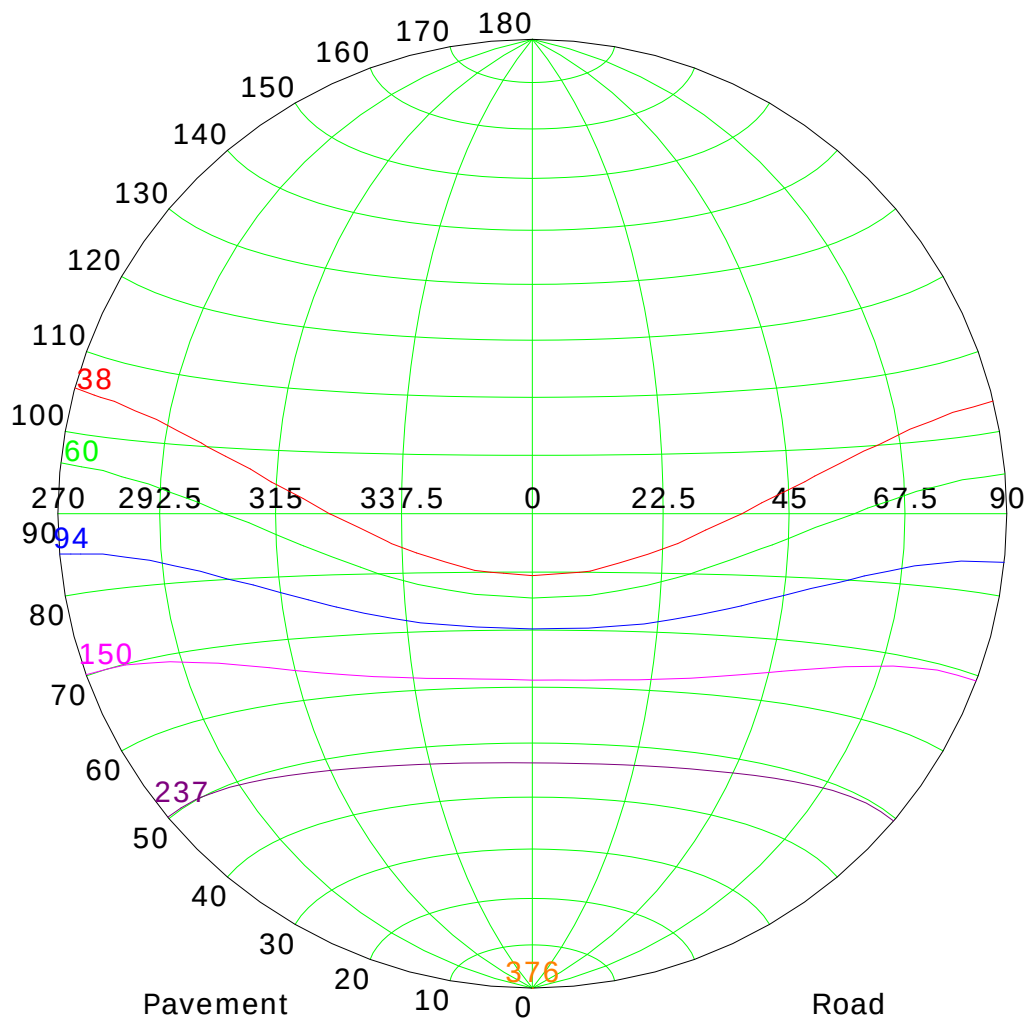
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Isocandela (sphere)



I_{max} (100%): 376 cd

(10%):	38 cd	(16%):	60 cd
(25%):	94 cd	(40%):	150 cd
(63%):	237 cd	(100%):	376 cd

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

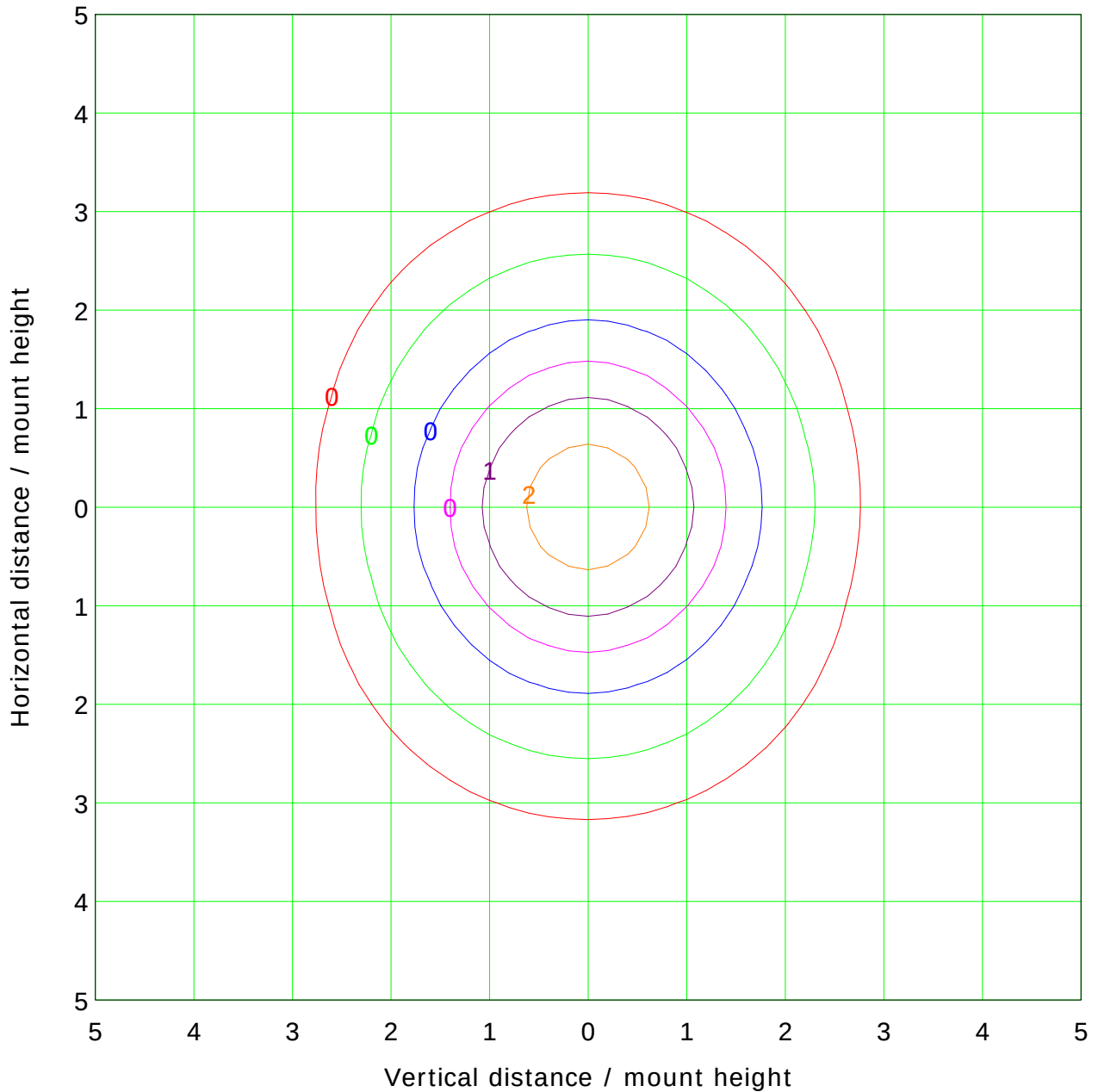
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

IsoLux Plot



C Plane (°):0.0-360.0: 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

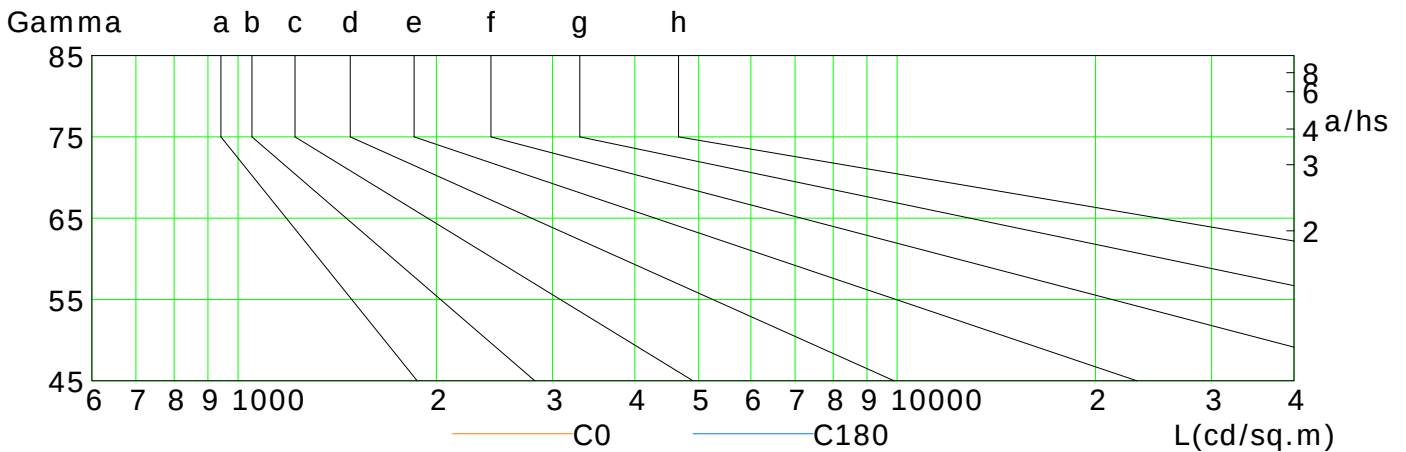
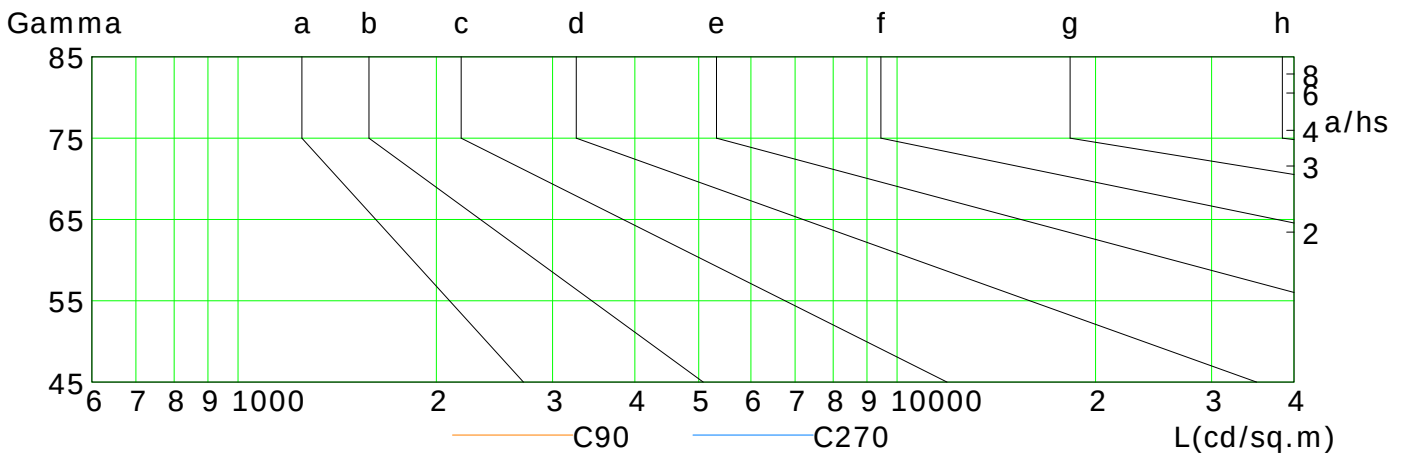
Humidity:

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	244	217	188	158	127	95	63	34	10
C90	257	235	213	190	169	148	128	108	91
C180	243	216	188	158	127	95	64	35	11
C270	260	238	215	193	172	151	131	112	94

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

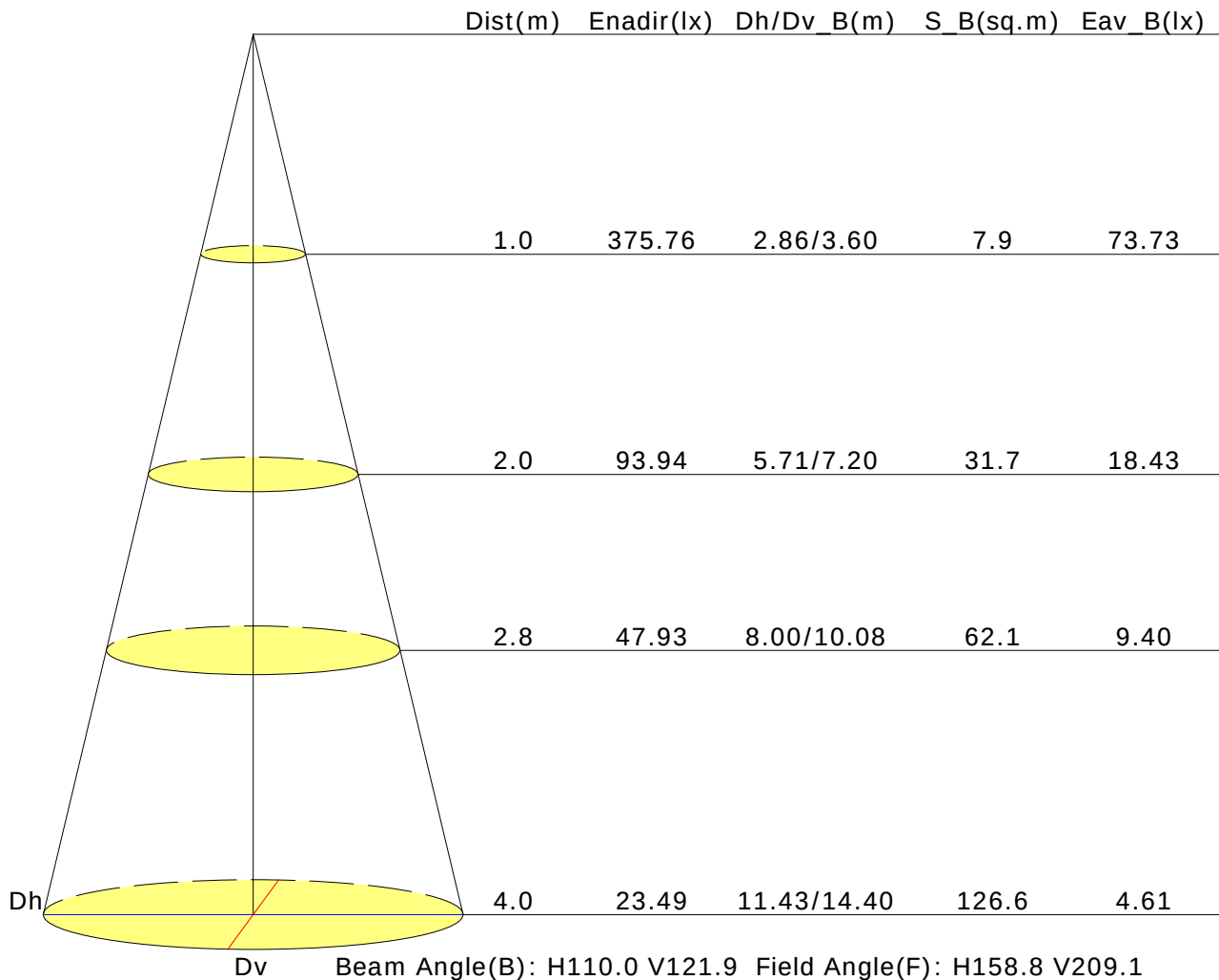
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Illuminance at a Distance



C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

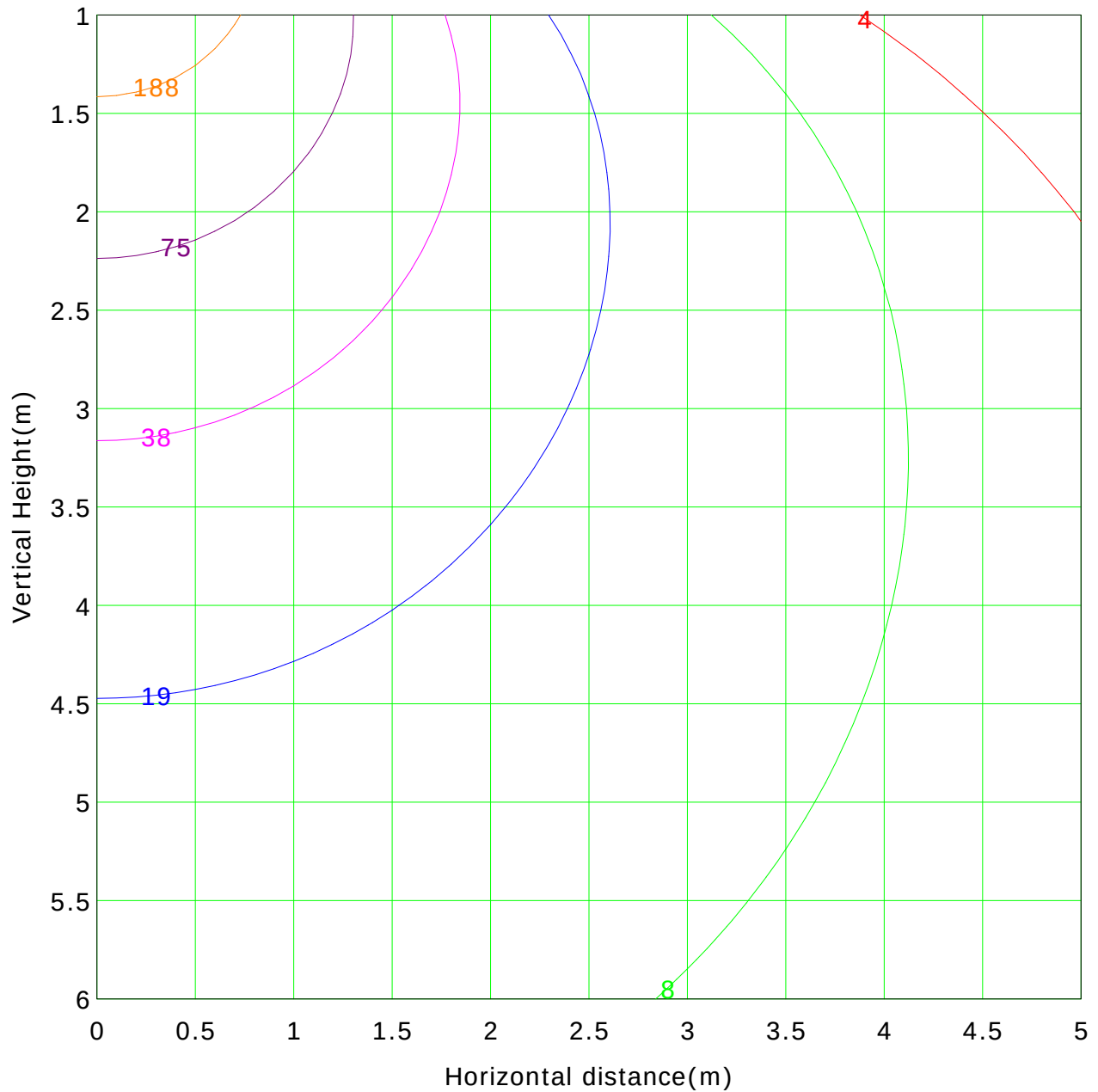
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 6.0m Max Lux: 375.8 lx

(1%): 3.8 lx	(2%): 7.5 lx
(5%): 18.8 lx	(10%): 37.6 lx
(20%): 75.2 lx	(50%): 187.9 lx
(100%): 375.8 lx	

C Plane (°):0.0-360.0: 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: 06/09/2018 09:41

Luminaire Property

Luminaire Manufacturer: Lighting Line

Luminaire Description: LLP-AN04-09 + LLD-09-US

Lamp Description: F52-400-60822

Number of Lamps: 1

Lumens per Lamp: 1579 lm

Voltage: 24.0 V

Current: 0.588 A

Power: 14.11 W

Power Factor: 1.000

Photometric Results

CIE Class: Direct

Measurement Flux: 1133.3 lm

Downward Ratio: 66.81%

Total Rated Lamp Lumens: 1579.0 lm

Efficiency: 71.77%

Upward Ratio: 4.96%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 163.4, 215.6, 193.5, 193.1

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 111.4, 126.4, 117.1, 116.9

Luminaire Efficacy Rating (LER): 80.37

Central Intensity: 328.72 cd

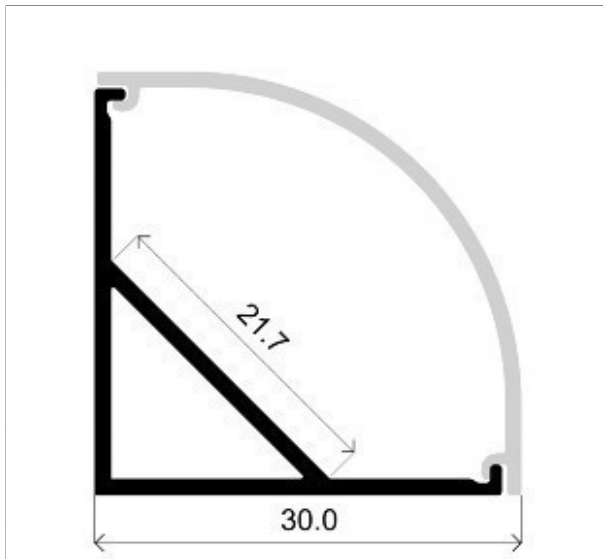
Max. Intensity: 328.8 cd

Pos of Max. Intensity: H20 V0

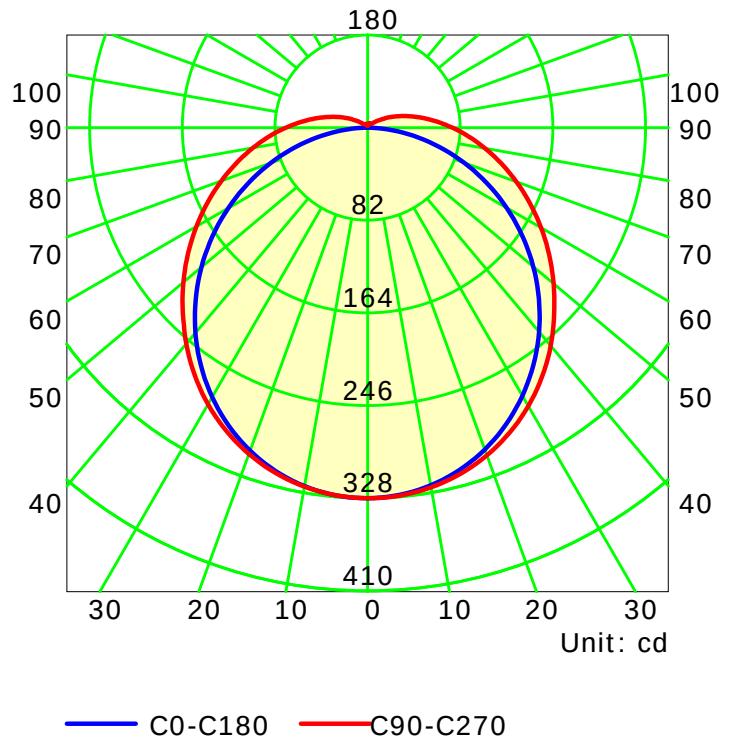
S/MH(C0/C180): 1.25

S/MH(C90/C270): 1.29

Picture Of Luminaire



Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

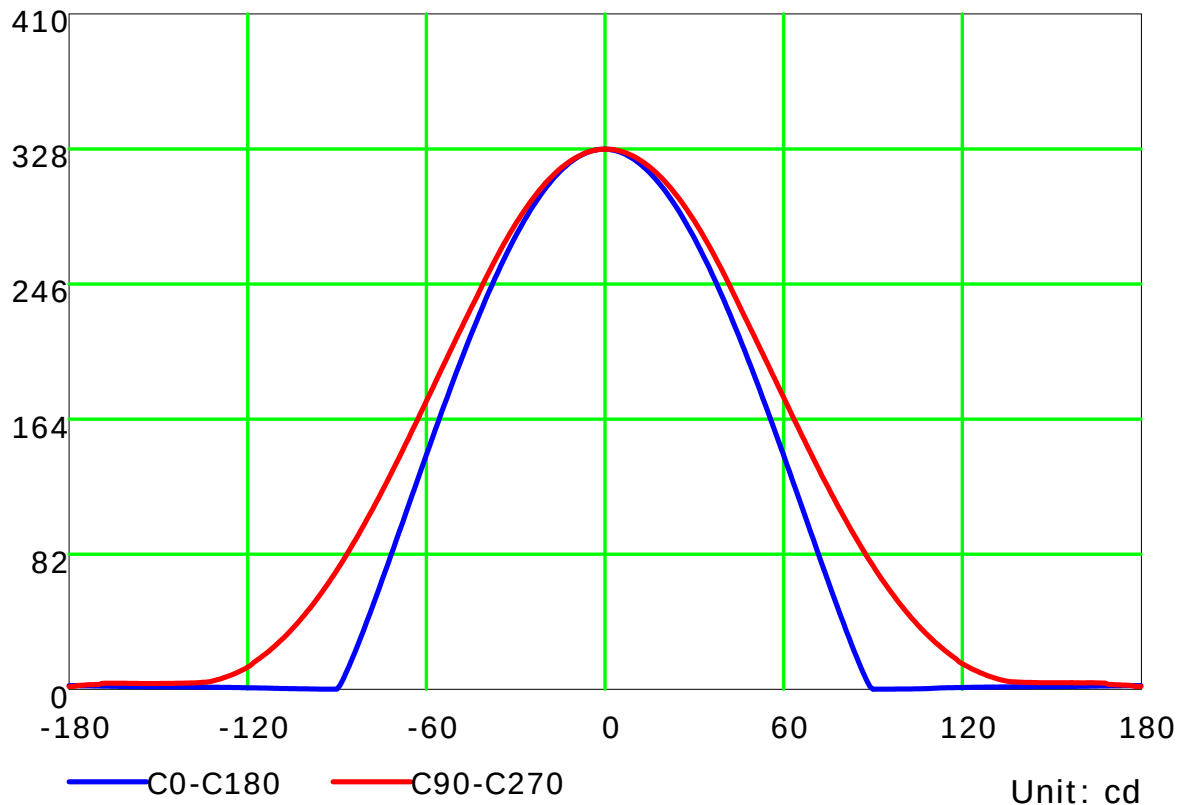
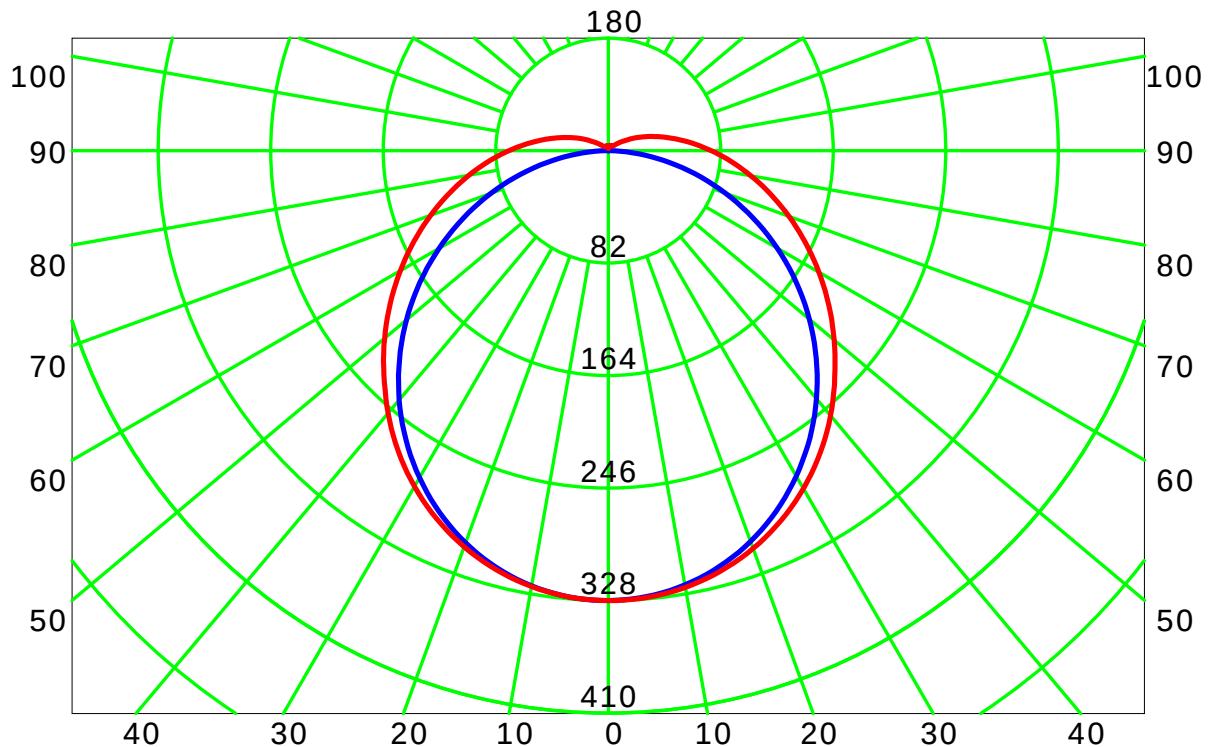
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

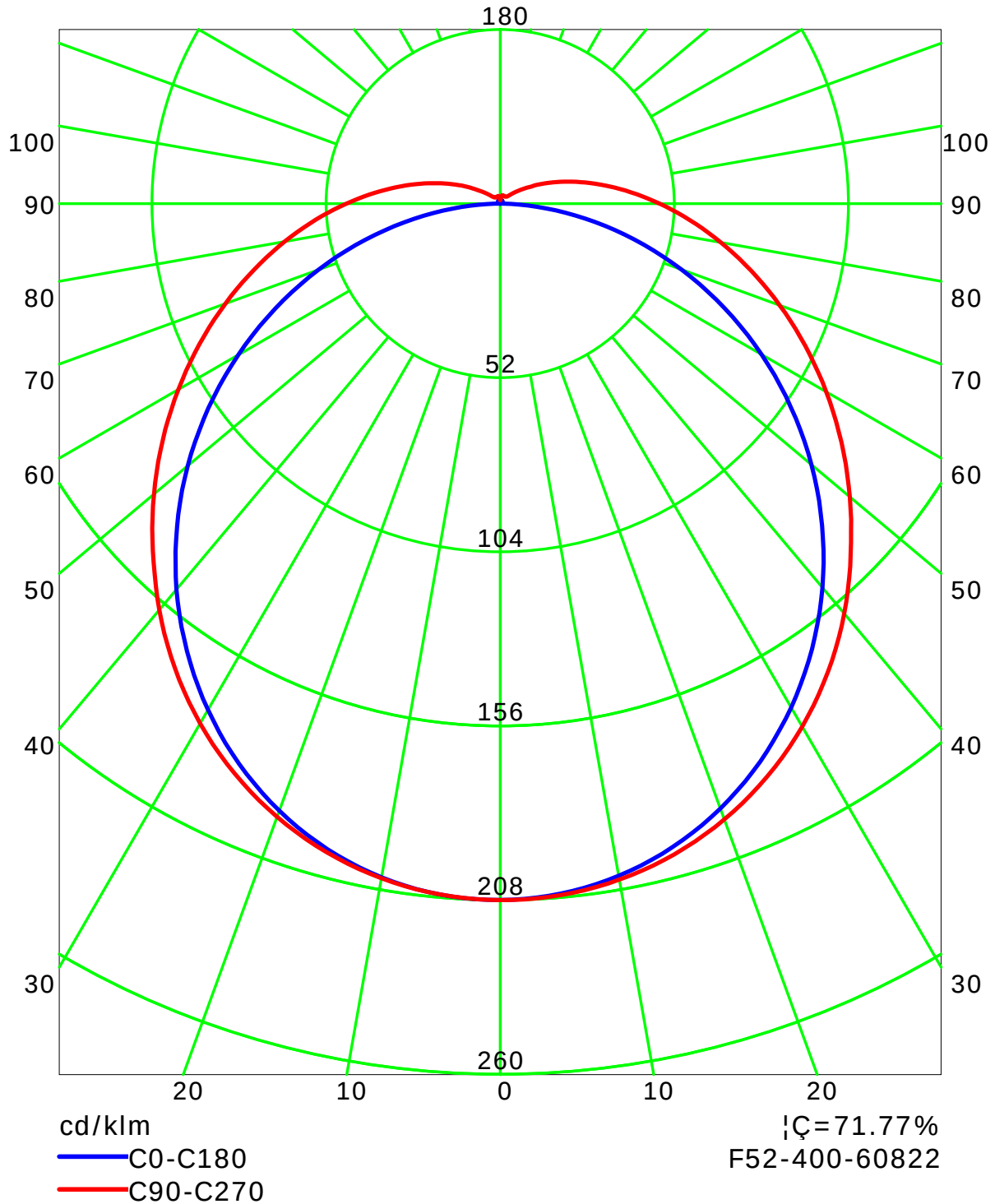
Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 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:

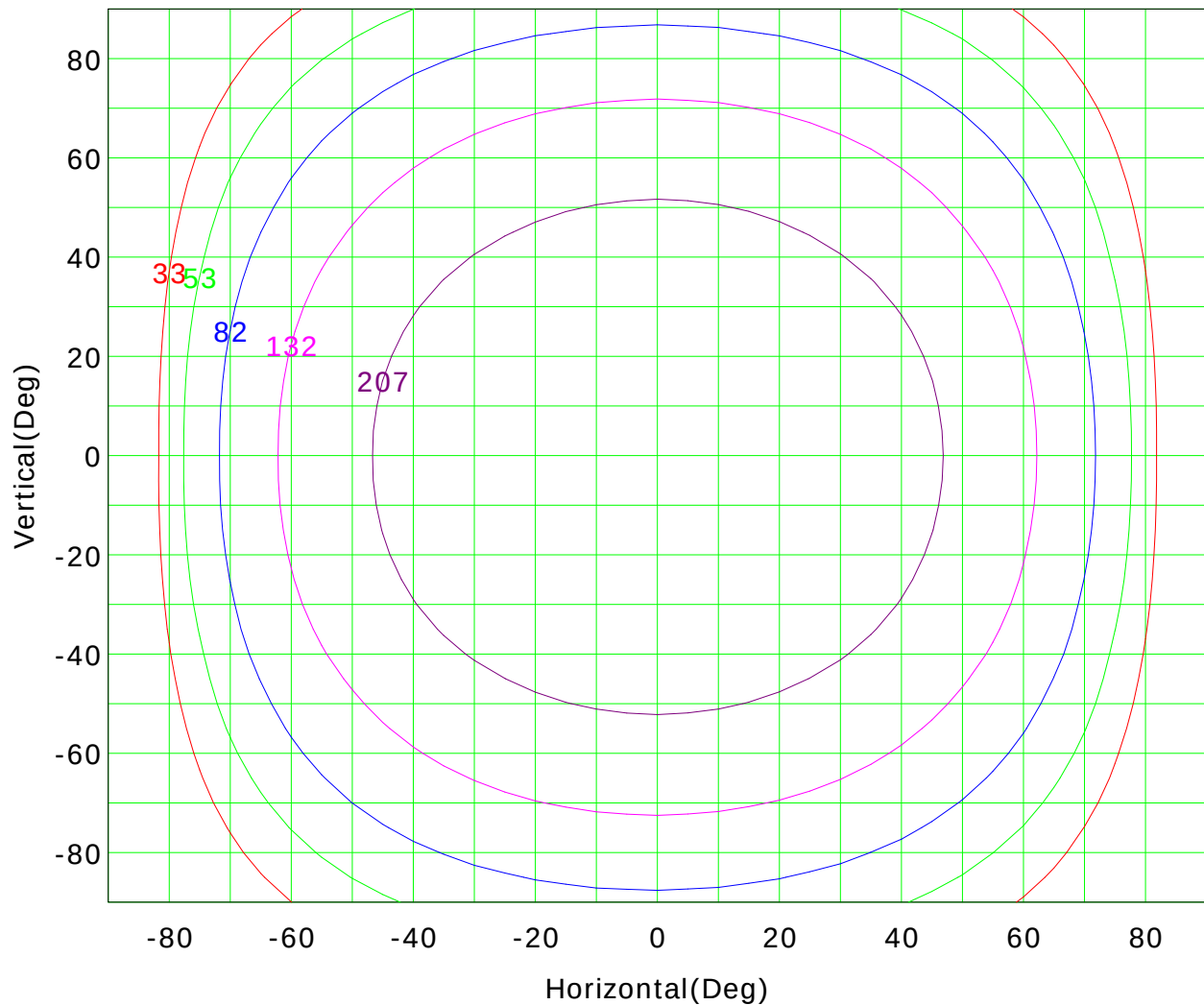
Luminous Intensity Distribution Curve(cd / klm)



C Plane (°):0.0-360.0: 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%): 329 cd

(10%):	33 cd	(16%):	53 cd
(25%):	82 cd	(40%):	132 cd
(63%):	207 cd	(100%):	329 cd

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

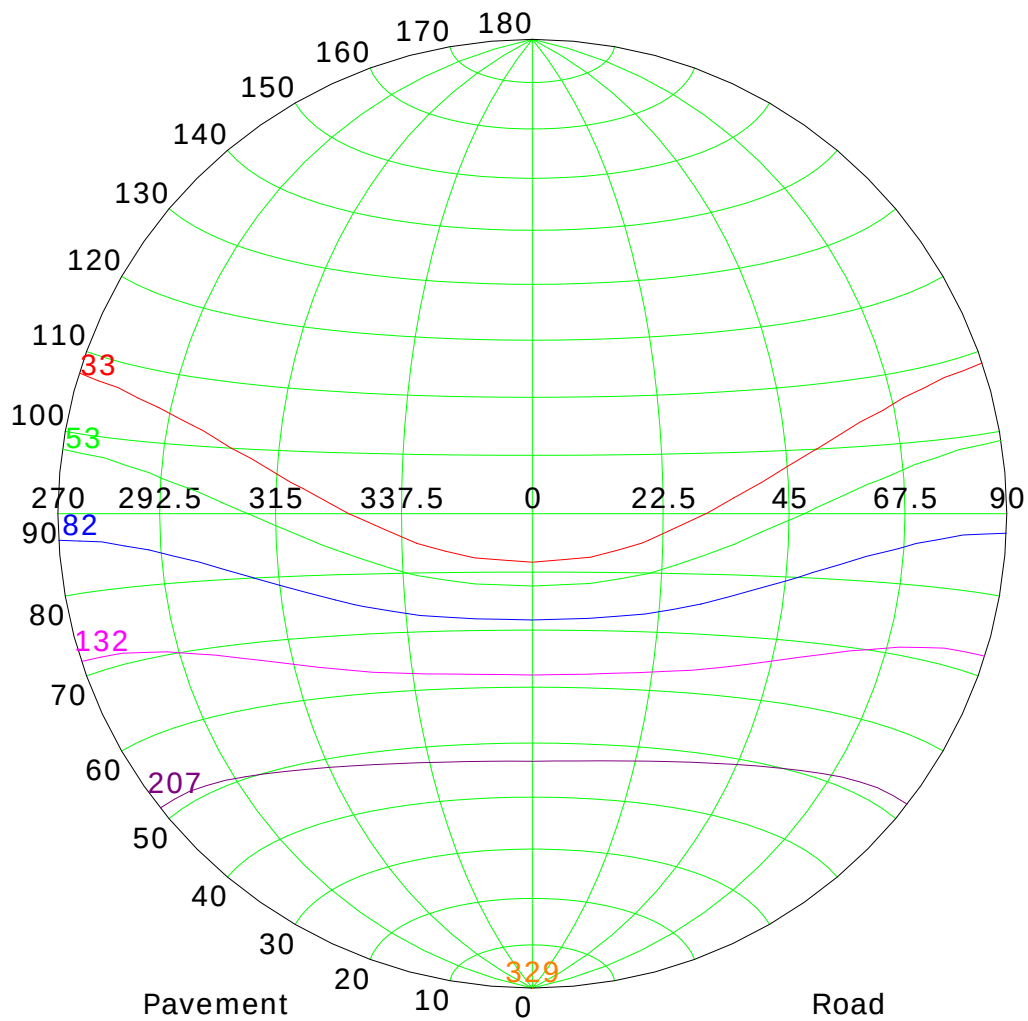
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Isocandela (sphere)



Imax (100%): 329 cd

(10%):	33 cd	(16%):	53 cd
(25%):	82 cd	(40%):	132 cd
(63%):	207 cd	(100%):	329 cd

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

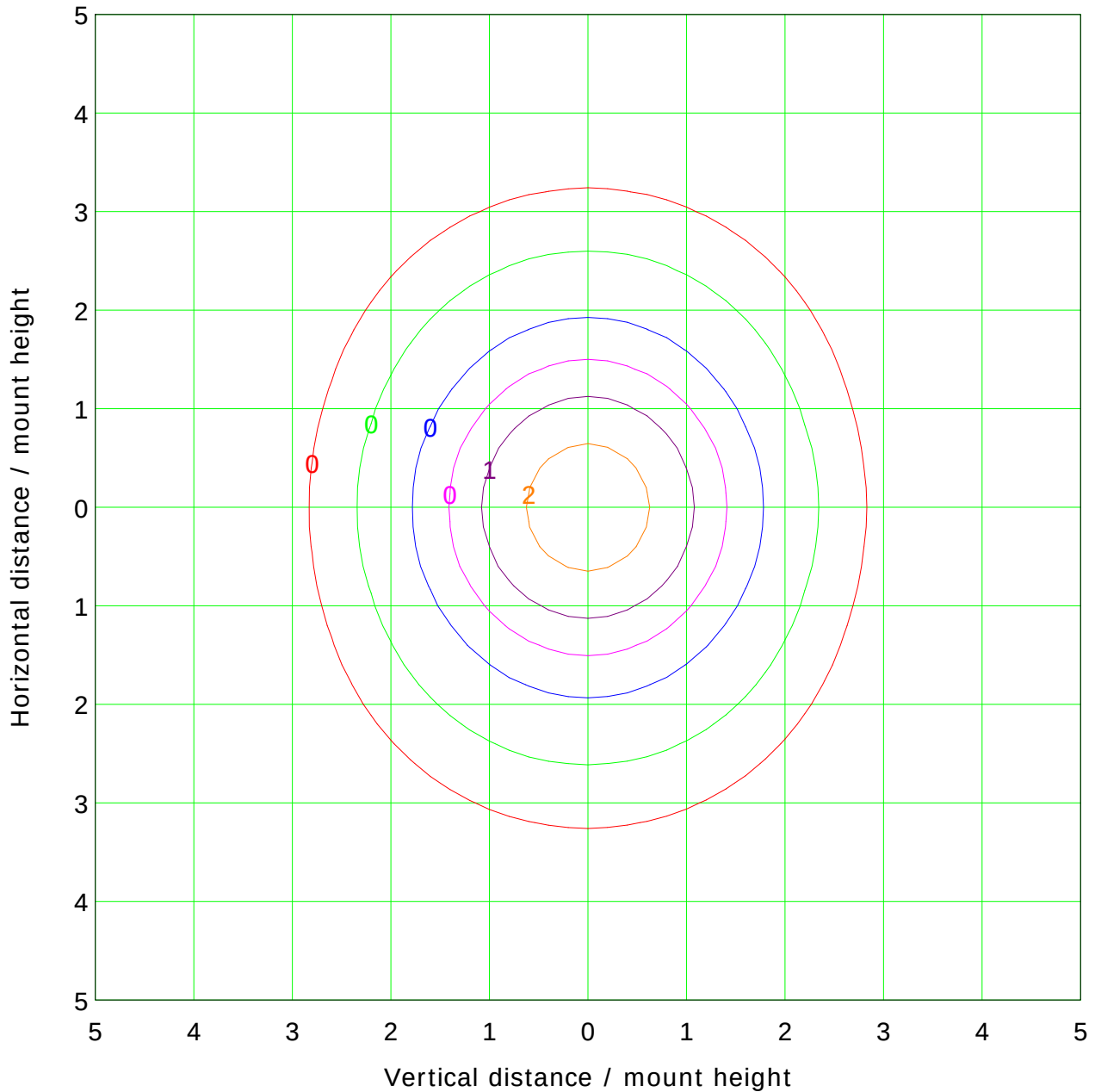
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

IsoLux Plot



Mounting Height: 10.0m Max Lux(100%): 3.3 lx

(1%): 0.0 lx	(2%): 0.1 lx
(5%): 0.2 lx	(10%): 0.3 lx
(20%): 0.7 lx	(50%): 1.6 lx
(100%): 3.3 lx	

C Plane (°):0.0-360.0: 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

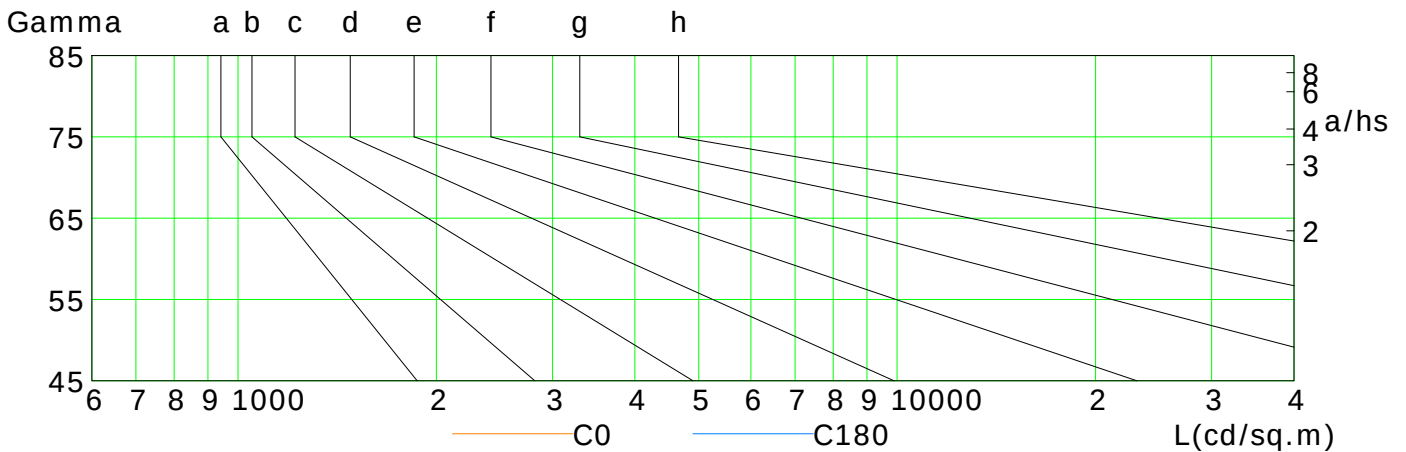
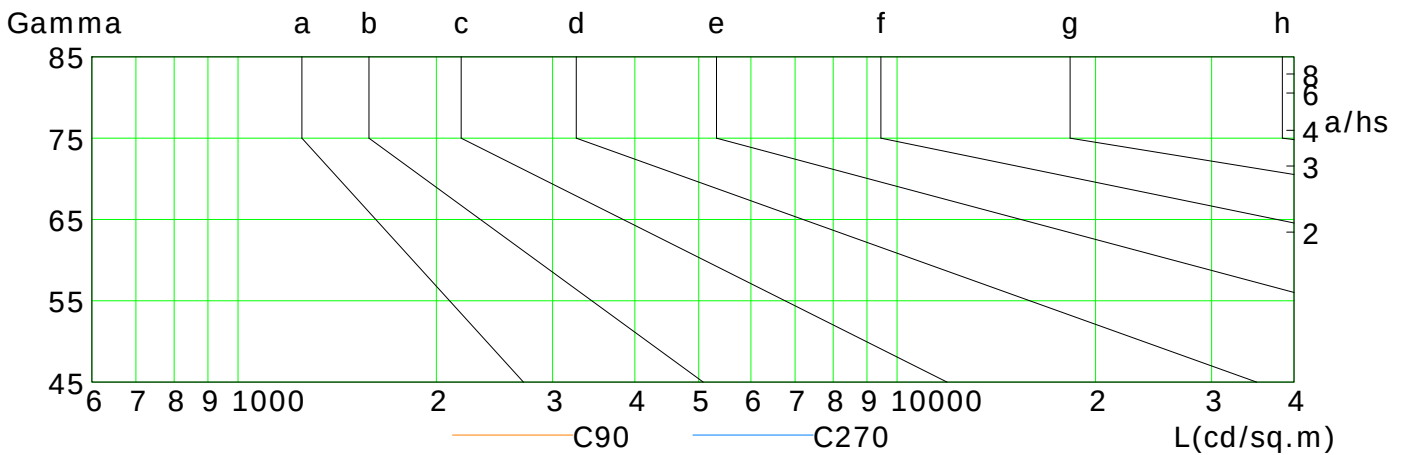
Humidity:

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	215	192	167	143	117	91	65	41	17
C90	234	215	197	178	159	140	123	106	90
C180	216	193	168	143	117	91	66	41	18
C270	232	213	194	175	157	138	120	103	87

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

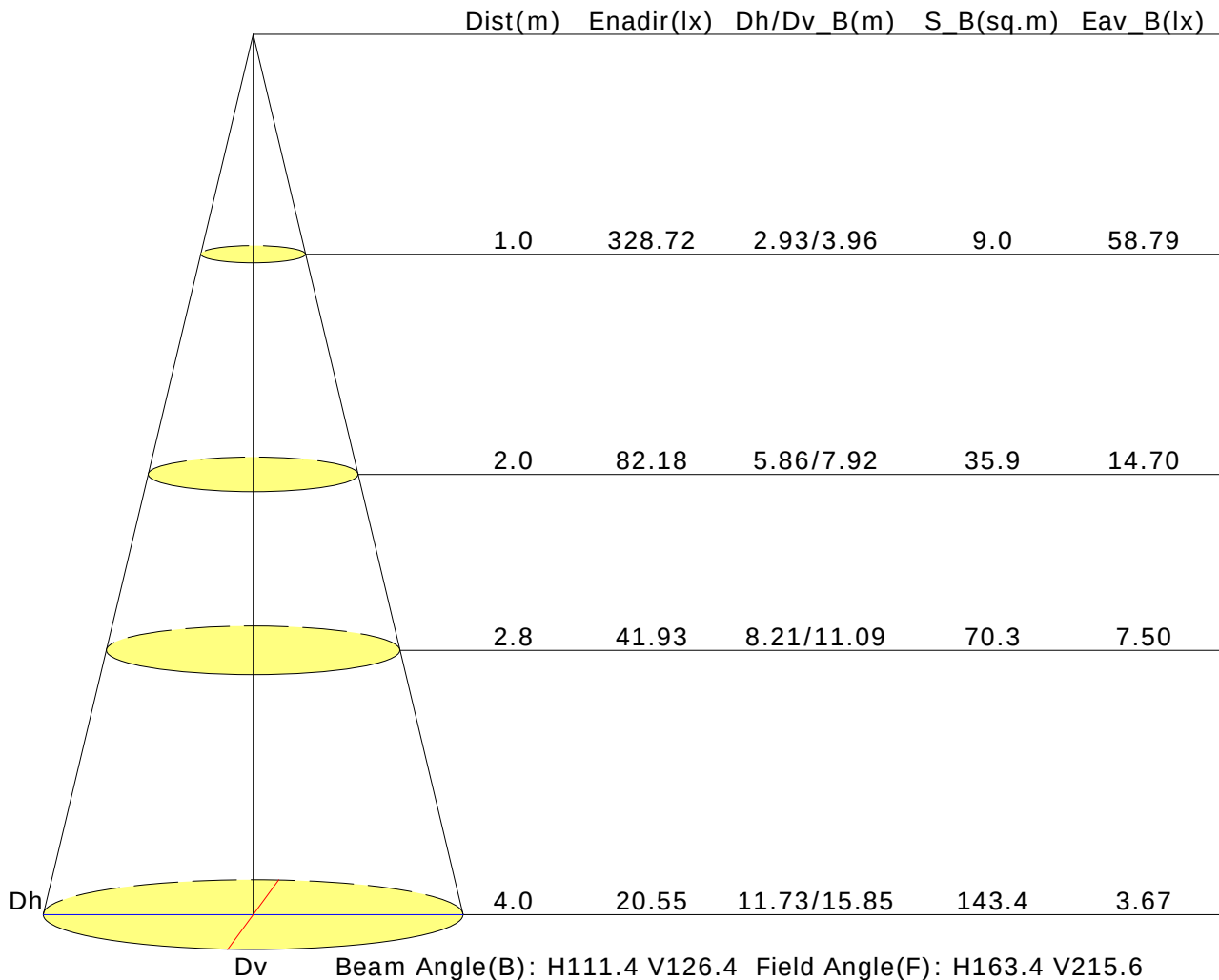
Test Device: GPM-2000

Distance: 7.970 m

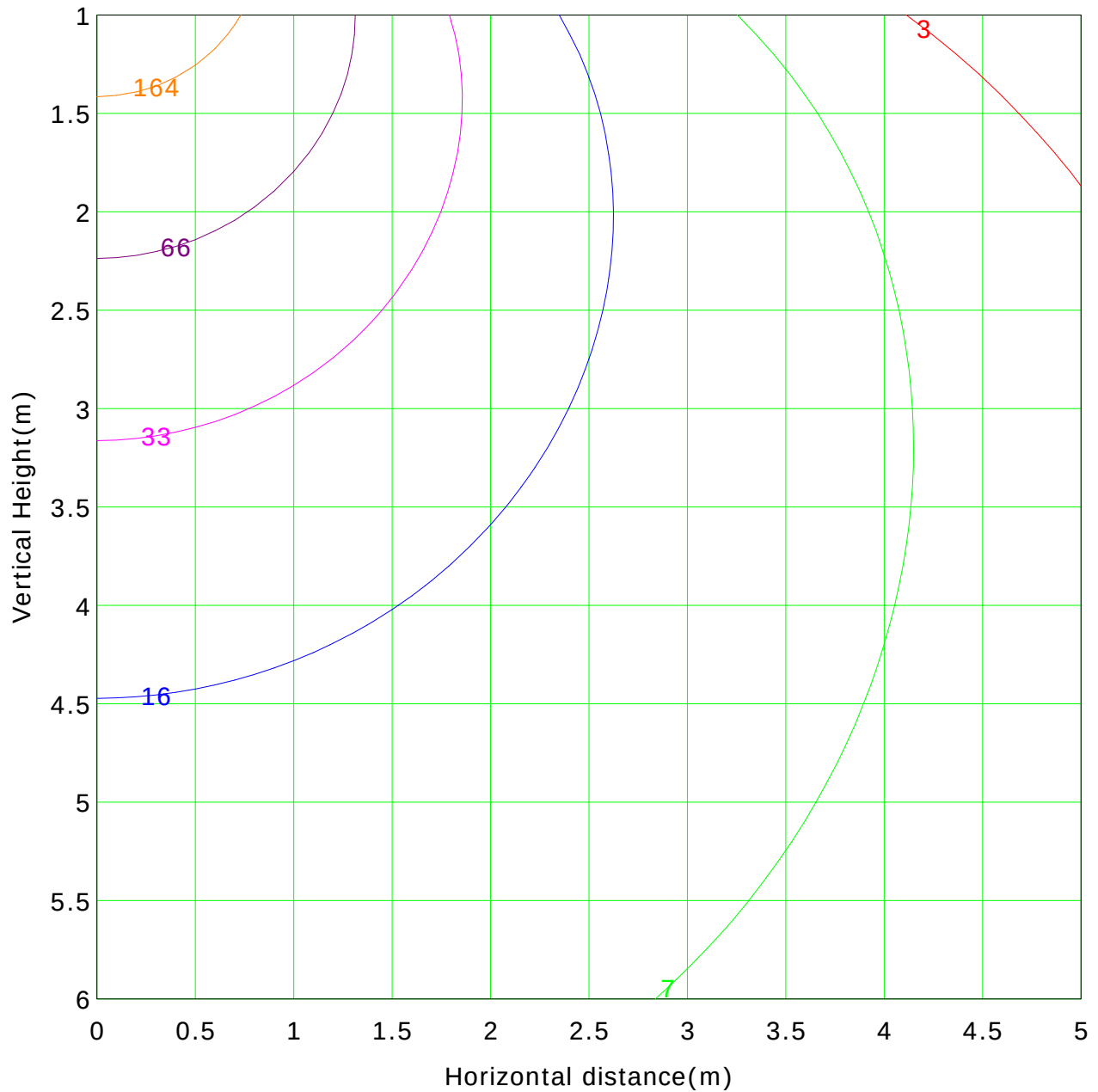
Humidity:

Inspector:

Illuminance at a Distance



Vertical IsoLux Plot



Lowest(m): 1.0m	Highest(m): 6.0m	Max Lux: 328.7 lx
(1%): 3.3 lx	(2%): 6.6 lx	
(5%): 16.4 lx	(10%): 32.9 lx	
(20%): 65.7 lx	(50%): 164.4 lx	
(100%): 328.7 lx		

Report No.:

Test Time: 06/09/2018 11:15

Luminaire Property

Luminaire Manufacturer: Lighting Line

Luminaire Description: LLP-AN04-09 + LLD-09-LM

Lamp Description: F52-400-60822

Number of Lamps: 1

Lumens per Lamp: 1579 lm

Voltage: 24.0 V

Current: 0.588 A

Power: 14.10 W

Power Factor: 1.000

Photometric Results

CIE Class: Semi-Direct

Measurement Flux: 1185.8 lm

Downward Ratio: 65.37%

Total Rated Lamp Lumens: 1579.0 lm

Efficiency: 75.10%

Upward Ratio: 9.72%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 158.0, 244.2, 220.9, 220.8

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 111.2, 170.6, 133.4, 133.3

Luminaire Efficacy Rating (LER): 84.15

Central Intensity: 286.16 cd

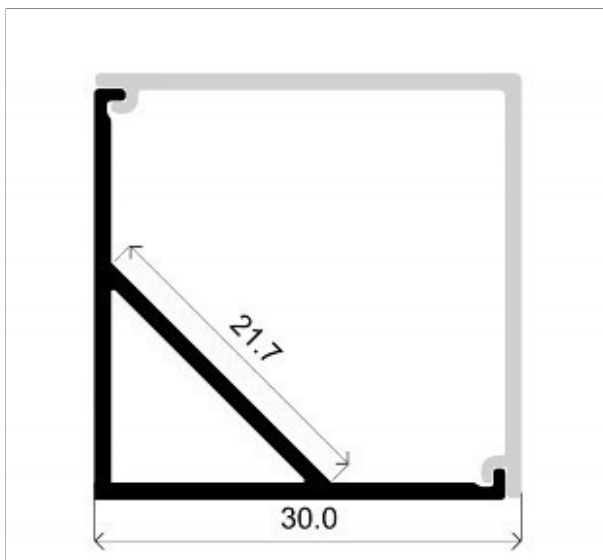
Max. Intensity: 286.17 cd

Pos of Max. Intensity: H0 V0

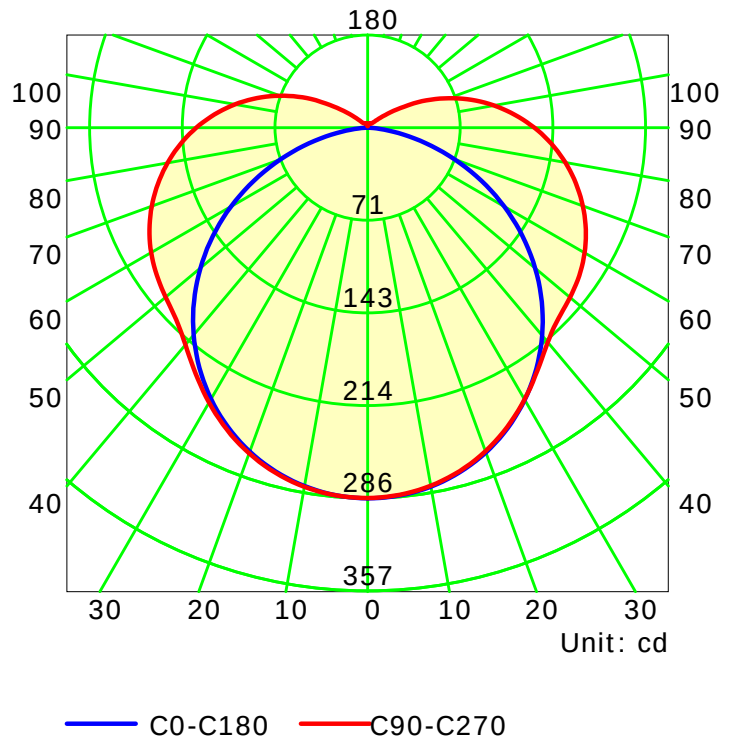
S/MH(C0/C180): 1.26

S/MH(C90/C270): 1.27

Picture Of Luminaire



Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

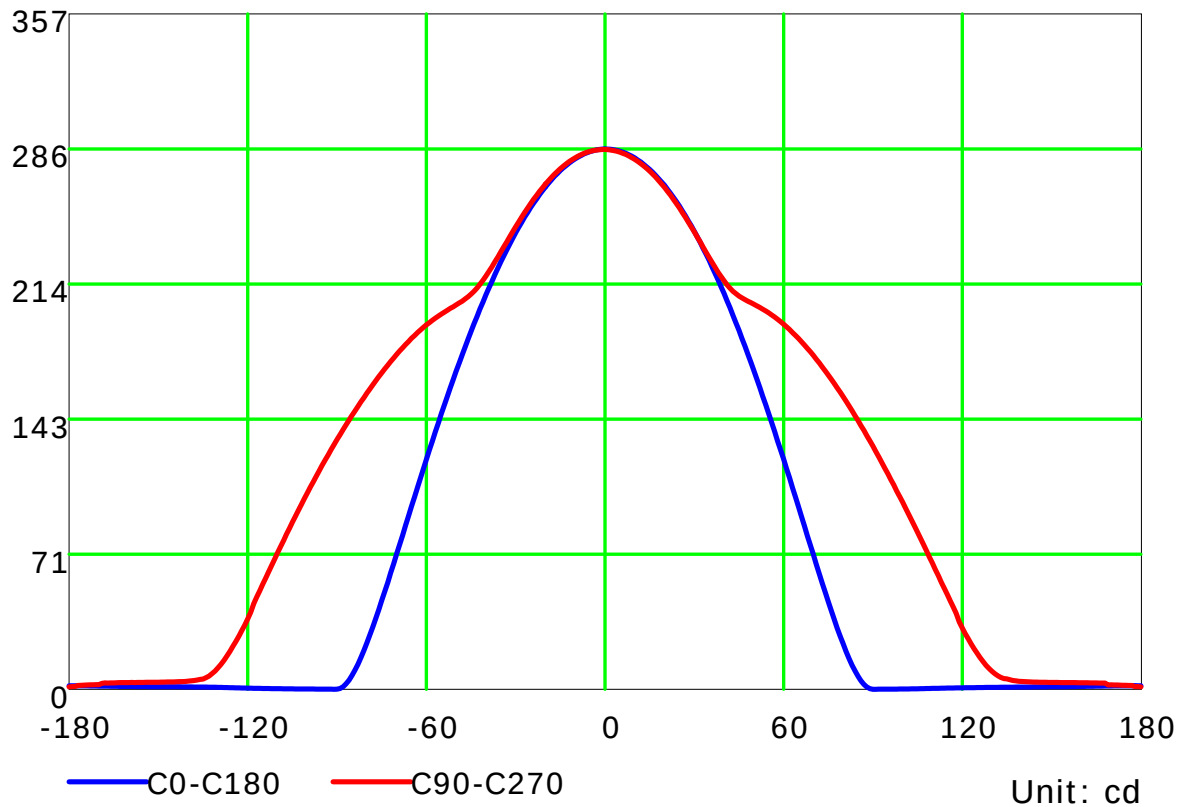
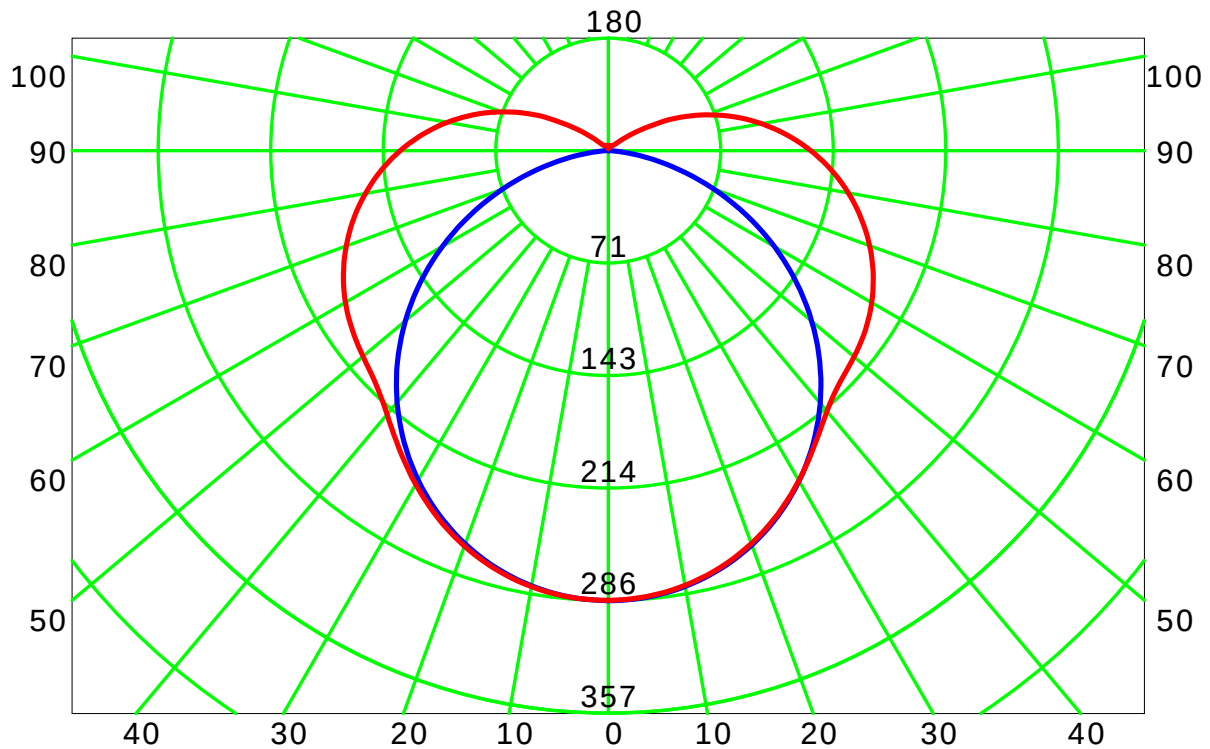
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

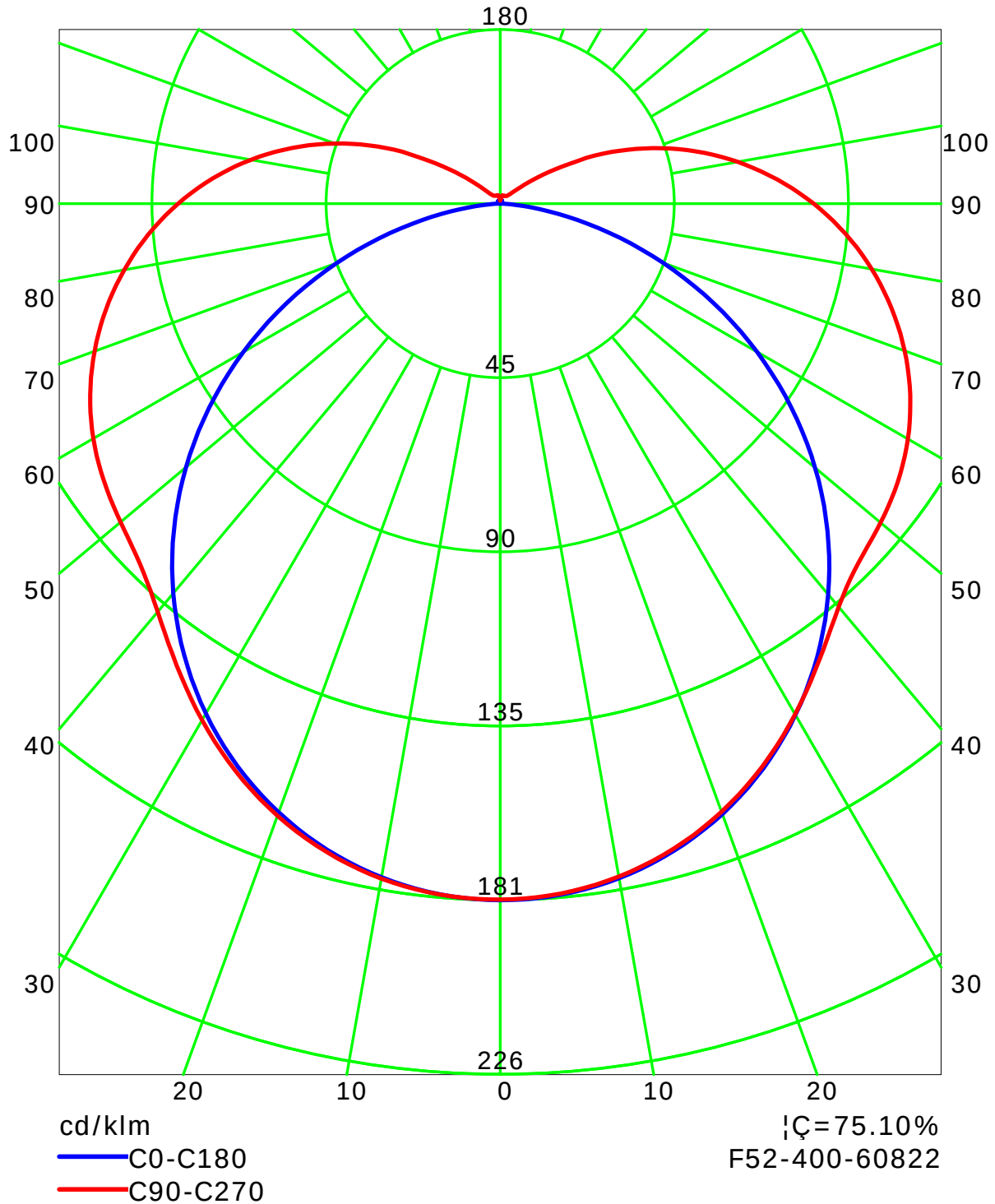
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

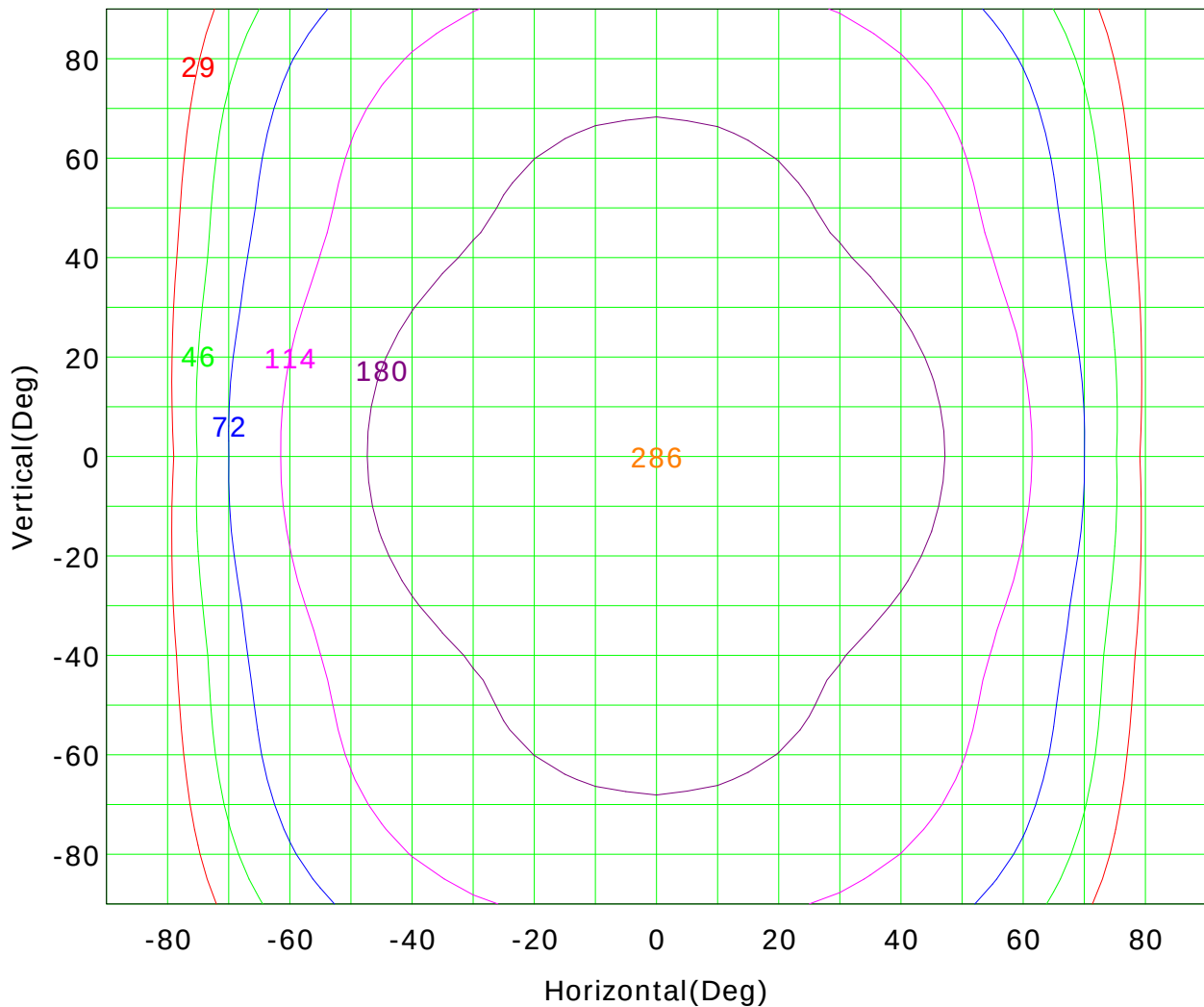
Luminous Intensity Distribution Curve(cd / klm)



C Plane (°):0.0-360.0: 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%): 286 cd

(10%):	29 cd	(16%):	46 cd
(25%):	72 cd	(40%):	114 cd
(63%):	180 cd	(100%):	286 cd

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

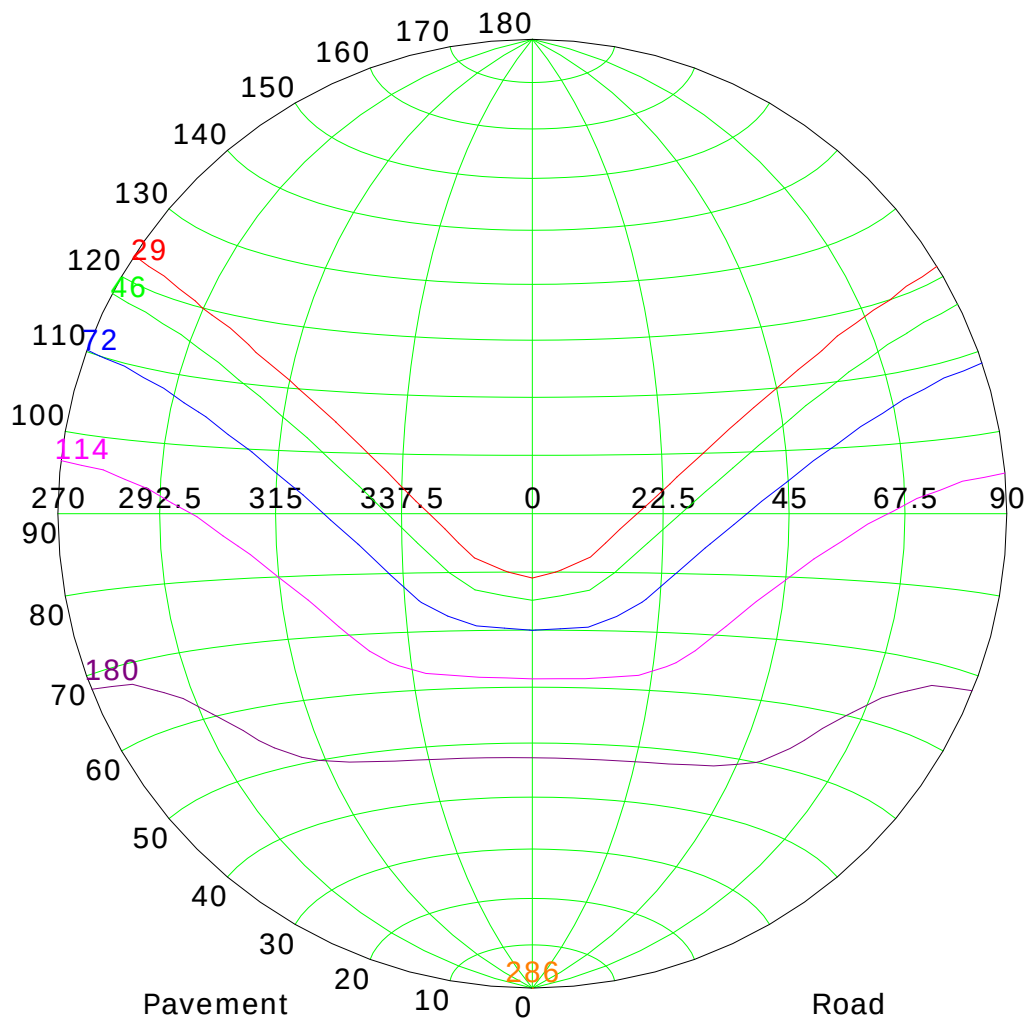
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

Isocandela (sphere)



I_{max} (100%): 286 cd

(10%):	29 cd	(16%):	46 cd
(25%):	72 cd	(40%):	114 cd
(63%):	180 cd	(100%):	286 cd

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

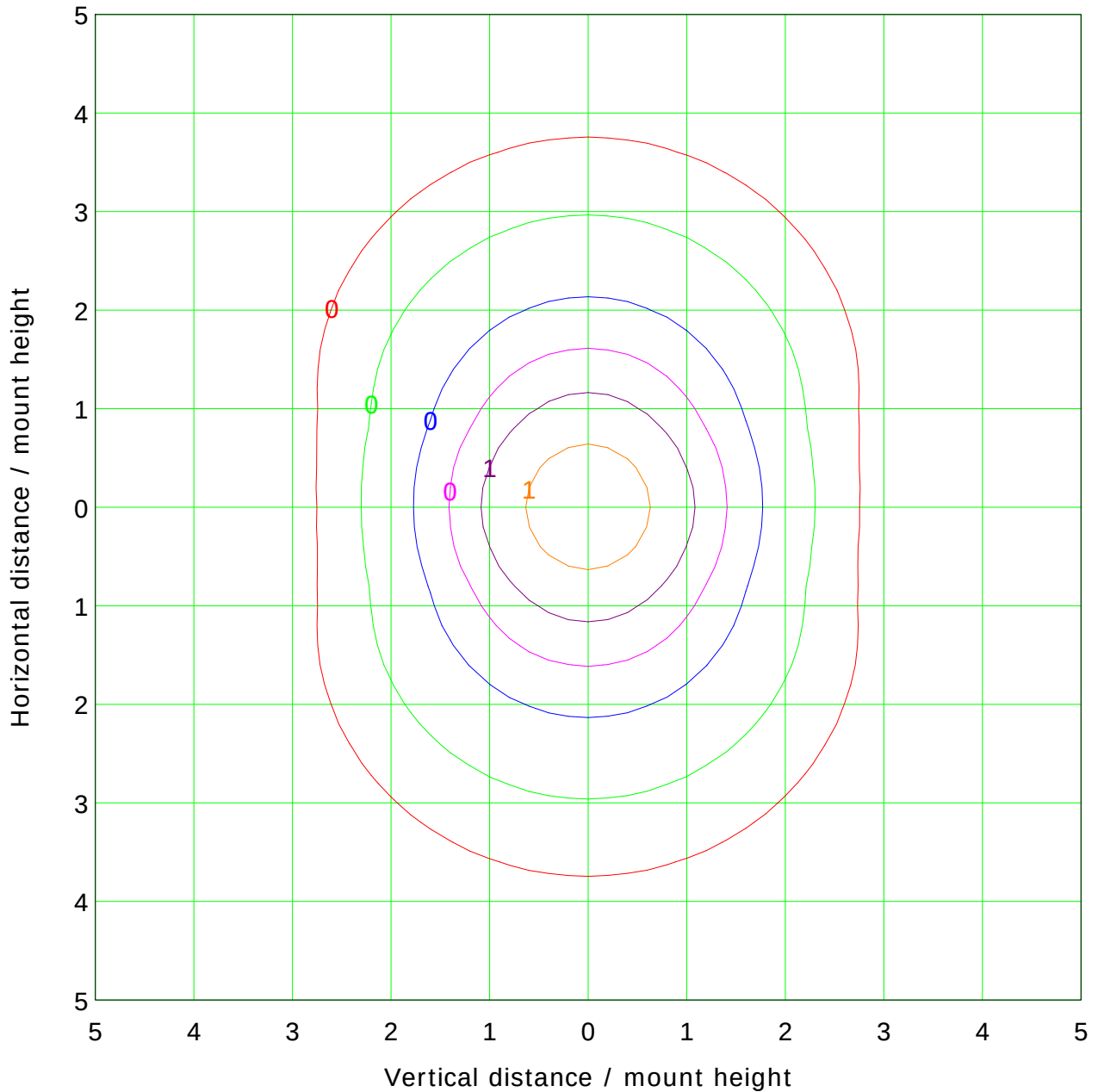
Test Device: GPM-2000

Distance: 7.970 m

Humidity:

Inspector:

IsoLux Plot



Mounting Height: 10.0m Max Lux(100%): 2.9 lx

(1%): 0.0 lx	(2%): 0.1 lx
(5%): 0.1 lx	(10%): 0.3 lx
(20%): 0.6 lx	(50%): 1.4 lx
(100%): 2.9 lx	

C Plane (°):0.0-360.0: 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

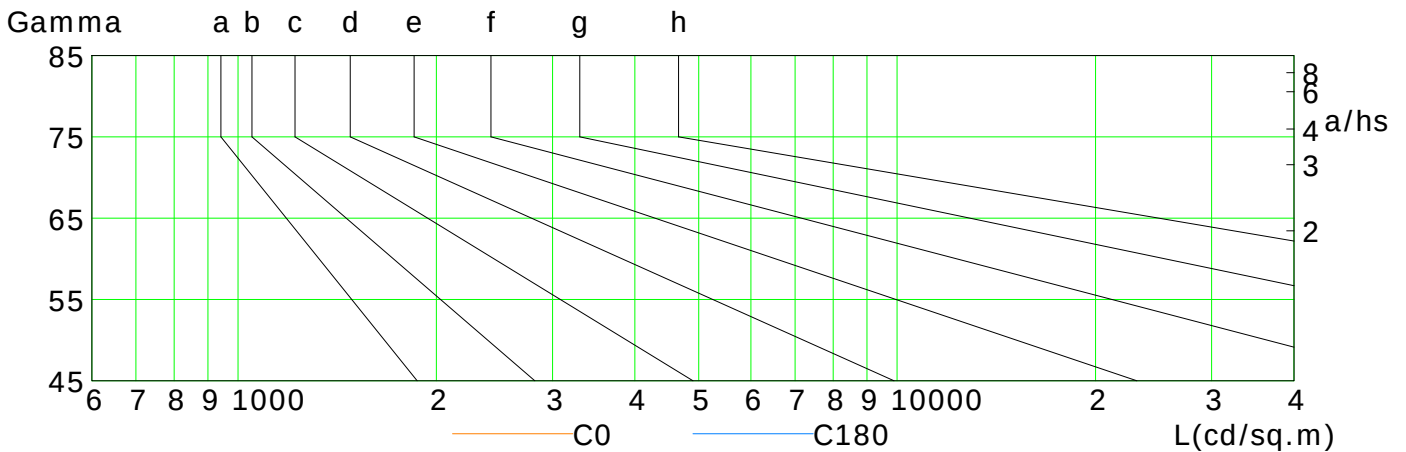
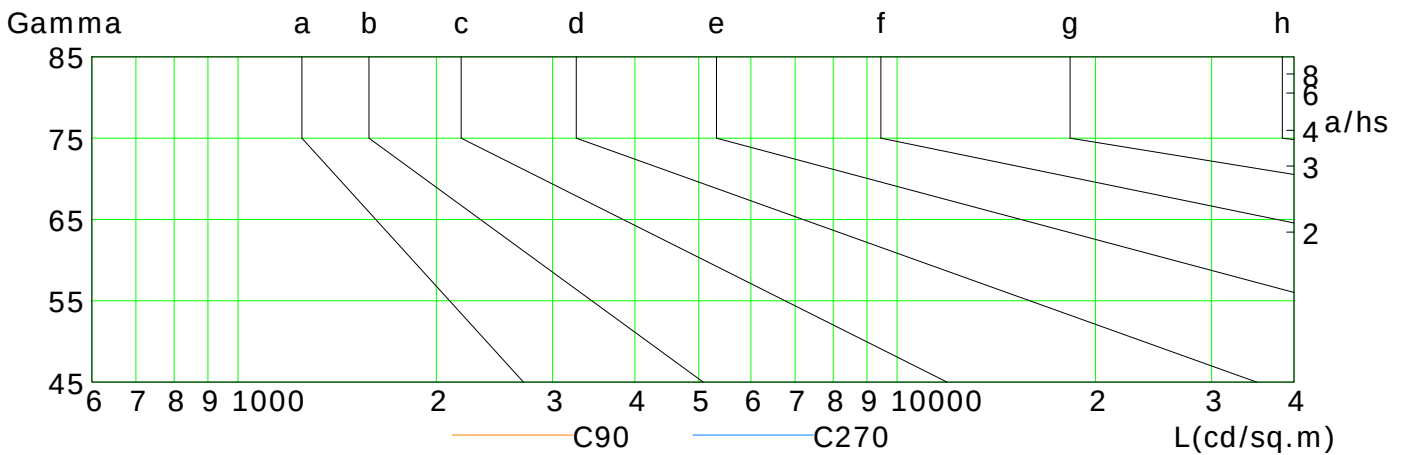
Humidity:

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	190	169	146	122	97	71	46	24	7
C90	208	204	199	193	186	177	166	155	142
C180	190	169	146	122	97	72	47	25	7
C270	209	204	199	193	186	177	168	157	145

C Plane (°):0.0-360.0: 10.0

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

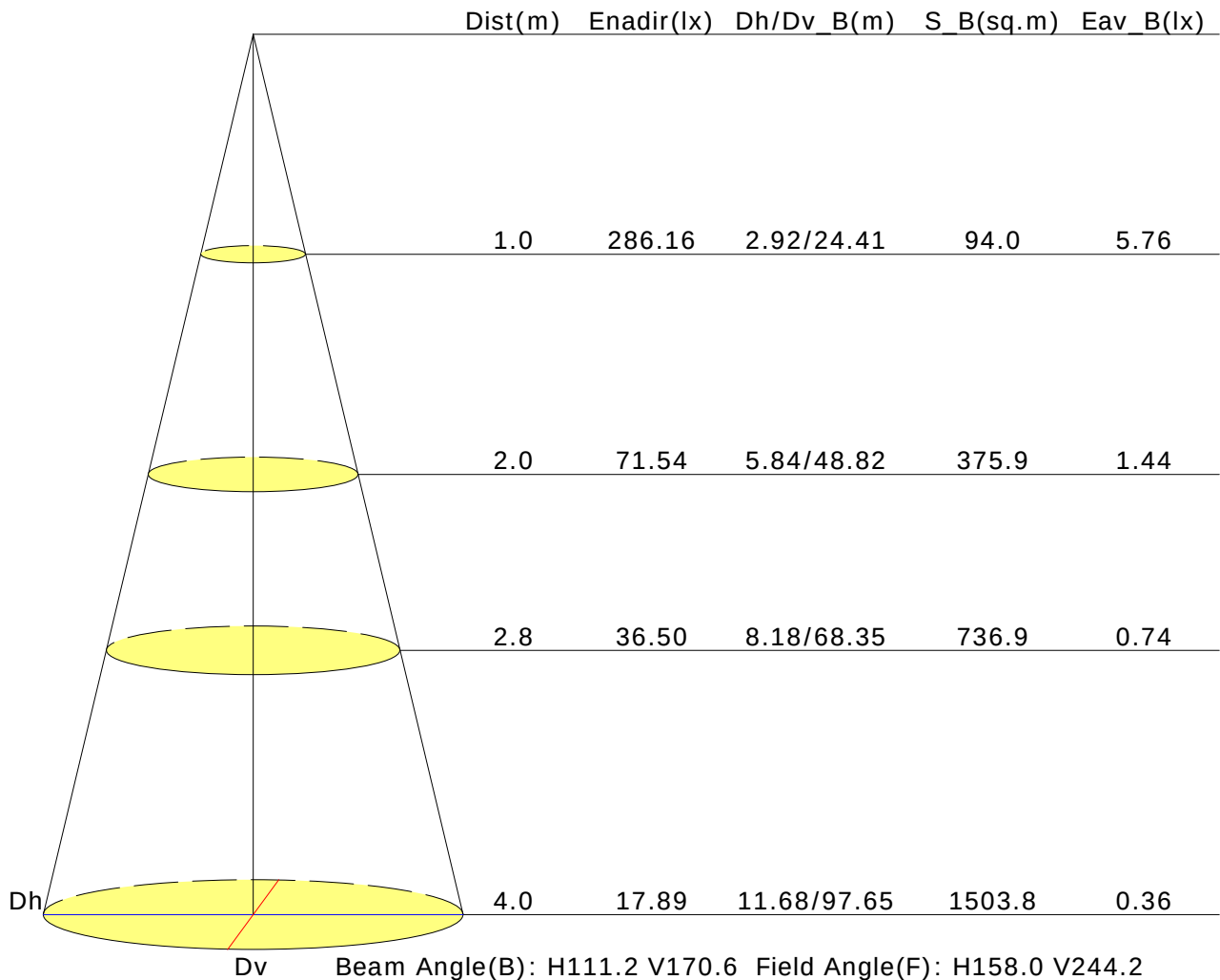
Test Device: GPM-2000

Distance: 7.970 m

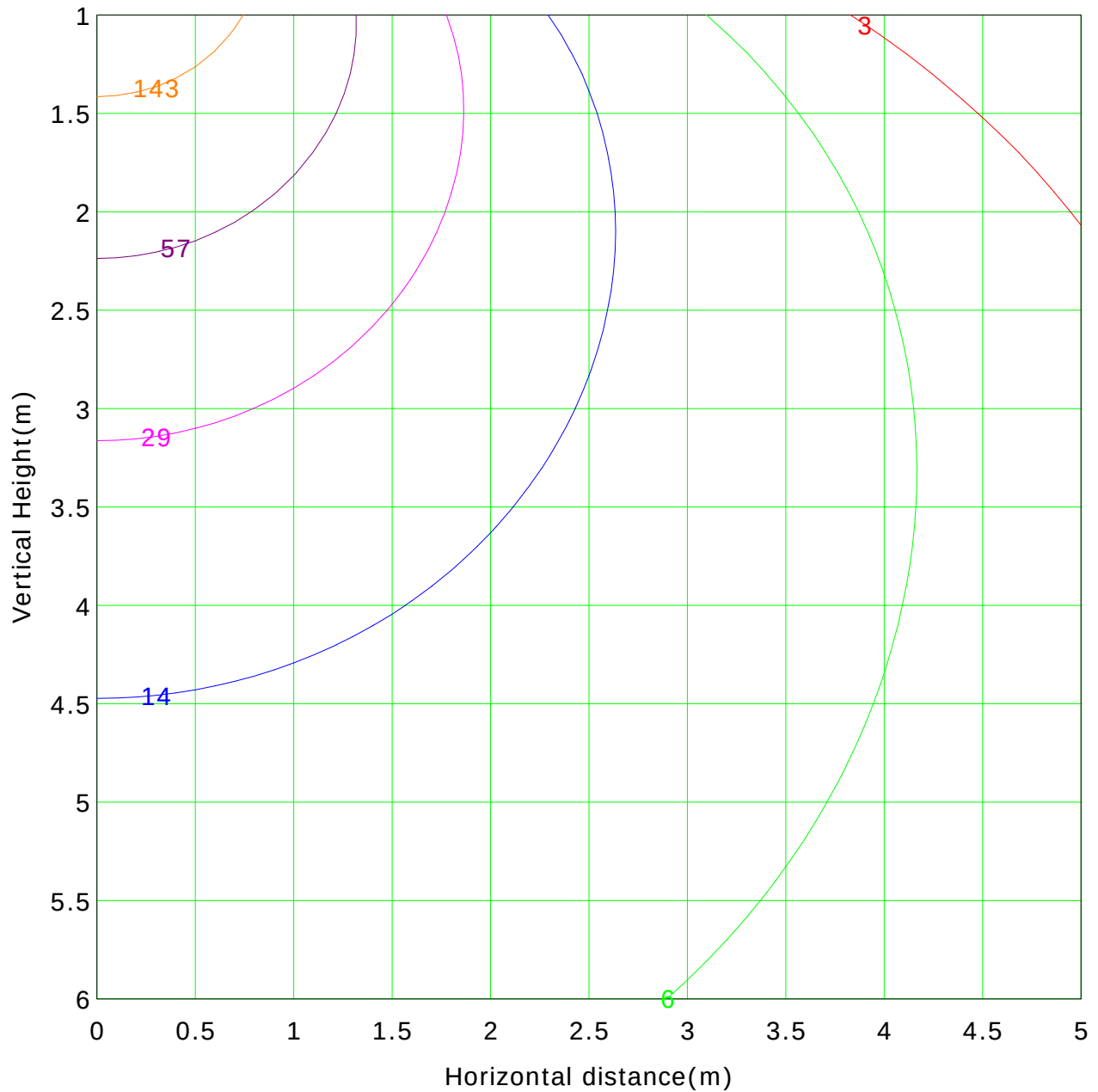
Humidity:

Inspector:

Illuminance at a Distance



Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 6.0m Max Lux: 286.2 lx

(1%): 2.9 lx	(2%): 5.7 lx
(5%): 14.3 lx	(10%): 28.6 lx
(20%): 57.2 lx	(50%): 143.1 lx
(100%): 286.2 lx	

C Plane (°):0.0-360.0: 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: