

customer:

date: 29.10.2024

Harman Professional Denmark ApS.  
Olof Palmes Allé 44

8200 Aarhus N  
Denmark

project No: 24000108-3

inspection order: Photometric measurement according DIN EN 13032-1,  
EN 13032-4:2015 and IES LM-79-08

- measurement of intensity distribution
- measurement of luminous flux

measurement procedure: - measurement with goniophotometer according DIN EN 13032

test sample specification:

luminaire: LED fixture for stage and studio, direct beam

description: MAC Viper XIP - wide beam

Serial No.: 15077051976

DMX settings:      dimmer: 65535  
                         zoom: 0  
                         focus: 22400  
                         fans: full fan

test sample dimensions:

luminaire dimensions:

length:	430 mm
width:	270 mm
height:	760 mm
diameter:	- mm

dimensions of luminant areas:

length:	- mm
width:	- mm
height:	- mm
diameter:	215 mm

measurement configuration:

	area	step size
C- planes	0 - 360°	1°
γ- angle	0 - 90°	2.5°

luminaire position: hanging, light beam vertical

light center: central, bottom of light output

test results:

stabilization time: 30 min.

stability of luminous flux: &lt; 1%

luminous flux:

upper half space	lower half space	overall
-	28819,28 lm	28819,28 lm
-	100 %	100 %

max. luminous intensity: 50440,9 cd @ ( $\gamma=0^\circ/C=0^\circ$ )

beam angles:

half beam 50 % :	49,8°
field angle 10% :	57,3°
cutoff angel 3% :	59,2°

symmetry condition: rotational symmetric

luminous efficiency: 30,80 lm/W

electrical operating conditions:

voltage: 230,0 V (const. < 0.1%)  
 current: 4,113 A  
 system power: 935,60 W  
 power factor: 0,982

ambient temperature:

T = 25° C ± 1° C

The company ILUmetriX insures that all statements are made by the best of knowledge, according to European standards.

Meschede, 29.10.2024



F. Siepe (Management Board)



annex: page 3-10 testreport  
 page 11 testsample  
 page 12 testequipment

## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,99 V
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Report:	24000108-3	System Power:	935,6 W
Date:	25.10.2024 12:31:28		
Operator:	F. Siepe	No. of lamps:	1
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Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

## Luminaire data

<b>LiTG-class:</b>	A60		
<b>UTE-class:</b>	Not available		
<b>IES-class:</b>	100 - 100 - 100 - 100 - 100		
<b>TM5-class:</b>	BZ1		
<b>Divergences in the plane through maximum intensity:</b>	Horizontal	Vertical	
<b>One half peak divergence:</b>	49,8°	49,8°	
<b>Half peak side angle (left):</b>	-24,9°	-24,9°	
<b>Half peak side angle (right):</b>	24,9°	24,9°	
<b>One tenth peak divergence:</b>	57,3°	57,3°	
<b>Tenth peak side angle (left):</b>	-28,6°	-28,6°	
<b>Tenth peak side angle (right):</b>	28,6°	28,6°	

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### Intensity [cd] MAC VIPER XIP wide beam

G/C [cd]	0,0
0,0	50440,9
2,5	50434,7
5,0	50272,5
7,5	50145,4
10,0	49807,8
12,5	49430,1
15,0	48519,6
17,5	46899,8
20,0	44461,8
22,5	40313,2
25,0	24725,2
27,5	9192,8
30,0	68,7
32,5	40,4
35,0	28,5
37,5	20,7
40,0	16,4
42,5	13,1
45,0	10,3
47,5	8,3
50,0	6,7
52,5	5,4
55,0	4,3
57,5	3,3
60,0	2,4
62,5	1,7
65,0	1,1
67,5	0,6
70,0	0,3
72,5	0,2
75,0	0,2
77,5	0,2
80,0	0,1
82,5	0,1
85,0	0,1
87,5	0,1
90,0	0,0

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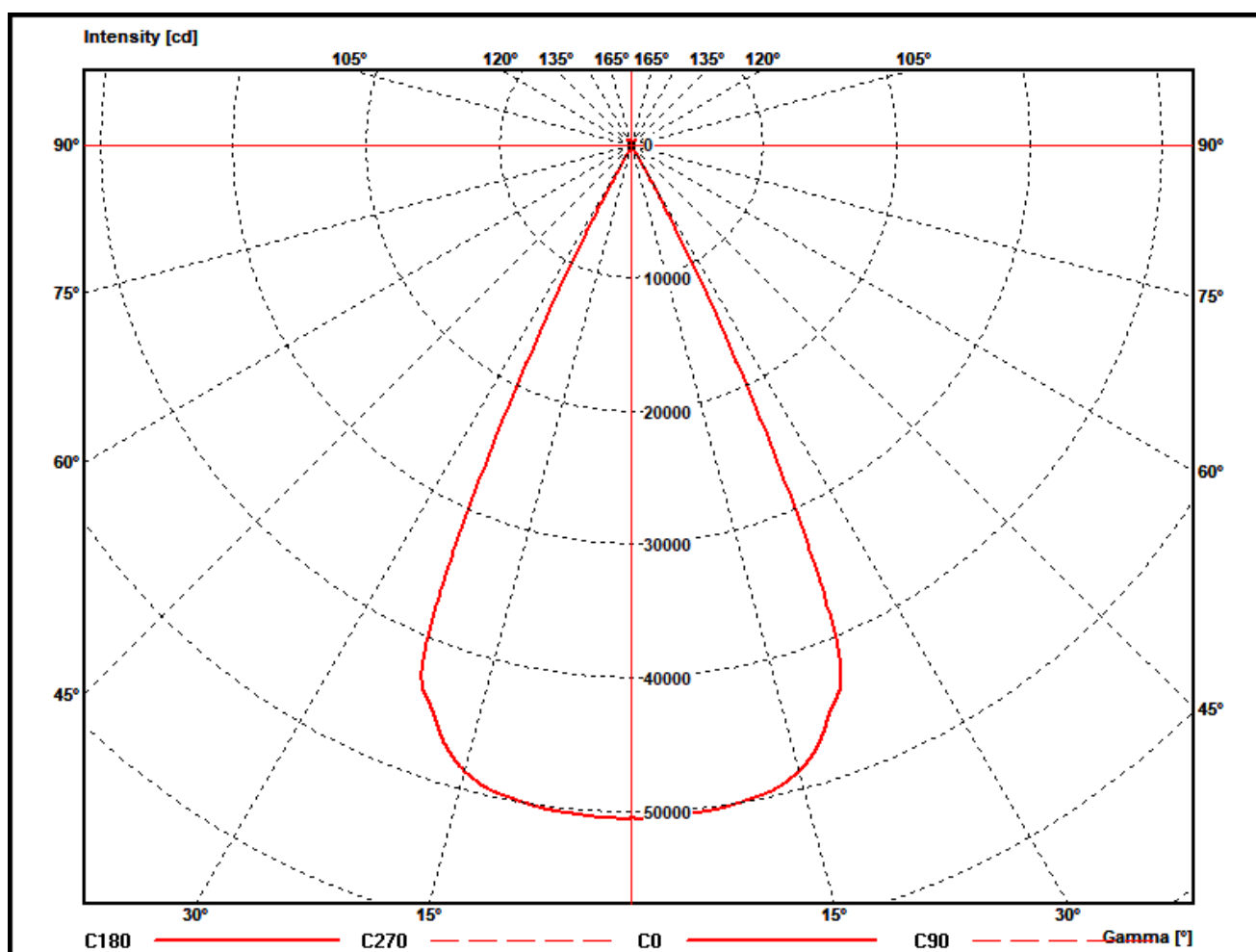
### Zonal flux MAC VIPER XIP wide beam

Gamma [°]	Imin [cd]	Imax [cd]	Imean [cd]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
0,0	50440,9	50440,9	50440,9	0,0	0,00	0,00	0,00
2,5	50434,7	50434,7	50434,7	301,6	301,63	1,05	1,05
5,0	50272,5	50272,5	50272,5	902,8	1204,43	3,13	4,18
7,5	50145,4	50145,4	50145,4	1498,4	2702,87	5,20	9,38
10,0	49807,8	49807,8	49807,8	2084,1	4787,00	7,23	16,61
12,5	49430,1	49430,1	49430,1	2653,7	7440,67	9,21	25,82
15,0	48519,6	48519,6	48519,6	3191,1	10631,76	11,07	36,89
17,5	46899,8	46899,8	46899,8	3659,8	14291,60	12,70	49,59
20,0	44461,8	44461,8	44461,8	4025,3	18316,87	13,97	63,56
22,5	40313,2	40313,2	40313,2	4211,5	22528,35	14,61	78,17
25,0	24725,2	24725,2	24725,2	3590,3	26118,68	12,46	90,63
27,5	9192,8	9192,8	9192,8	2056,2	28174,89	7,13	97,76
30,0	68,7	68,7	68,7	610,6	28785,48	2,12	99,88
32,5	40,4	40,4	40,4	7,8	28793,24	0,03	99,91
35,0	28,5	28,5	28,5	5,3	28798,49	0,02	99,93
37,5	20,7	20,7	20,7	4,0	28802,48	0,01	99,94
40,0	16,4	16,4	16,4	3,2	28805,67	0,01	99,95
42,5	13,1	13,1	13,1	2,7	28808,34	0,01	99,96
45,0	10,3	10,3	10,3	2,2	28810,56	0,01	99,97
47,5	8,3	8,3	8,3	1,8	28812,40	0,01	99,98
50,0	6,7	6,7	6,7	1,5	28813,94	0,01	99,98
52,5	5,4	5,4	5,4	1,3	28815,23	0,00	99,99
55,0	4,3	4,3	4,3	1,1	28816,29	0,00	99,99
57,5	3,3	3,3	3,3	0,9	28817,16	0,00	99,99
60,0	2,4	2,4	2,4	0,7	28817,83	0,00	99,99
62,5	1,7	1,7	1,7	0,5	28818,32	0,00	100,00
65,0	1,1	1,1	1,1	0,3	28818,67	0,00	100,00
67,5	0,6	0,6	0,6	0,2	28818,88	0,00	100,00
70,0	0,3	0,3	0,3	0,1	28818,98	0,00	100,00
72,5	0,2	0,2	0,2	0,1	28819,04	0,00	100,00
75,0	0,2	0,2	0,2	0,1	28819,10	0,00	100,00
77,5	0,2	0,2	0,2	0,0	28819,14	0,00	100,00
80,0	0,1	0,1	0,1	0,0	28819,19	0,00	100,00
82,5	0,1	0,1	0,1	0,0	28819,22	0,00	100,00
85,0	0,1	0,1	0,1	0,0	28819,24	0,00	100,00
87,5	0,1	0,1	0,1	0,0	28819,26	0,00	100,00
90,0	0,0	0,0	0,0	0,0	28819,28	0,00	100,00

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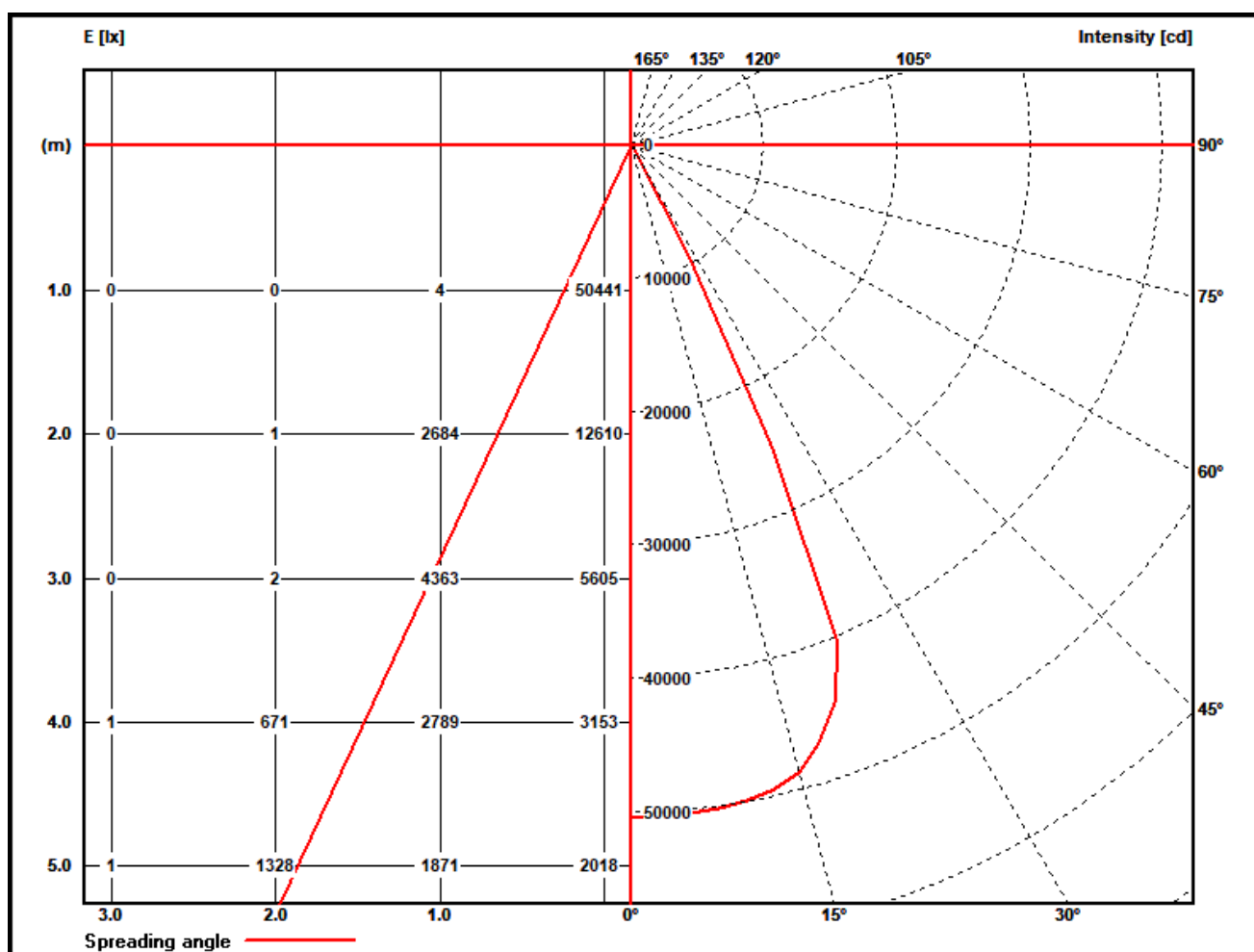
### Polar diagram MAC VIPER XIP wide beam



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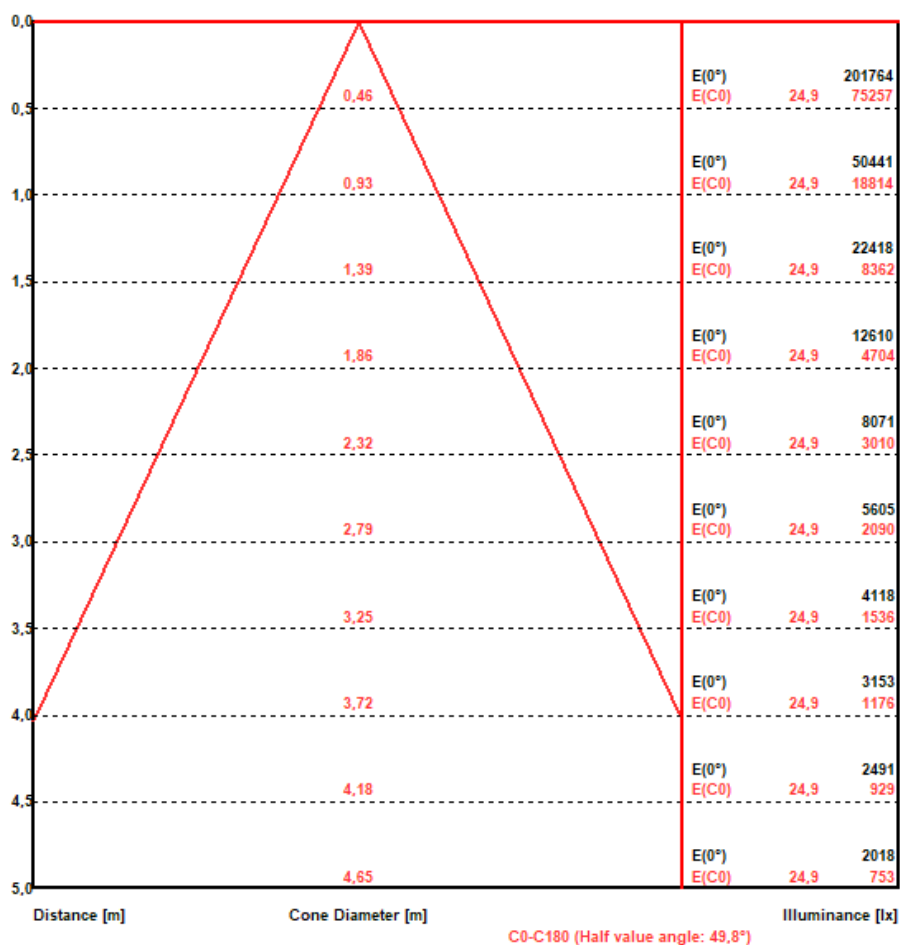
### Illuminance and Intensity diagram MAC VIPER XIP wide beam



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### Illuminance cone diagram MAC VIPER XIP wide beam

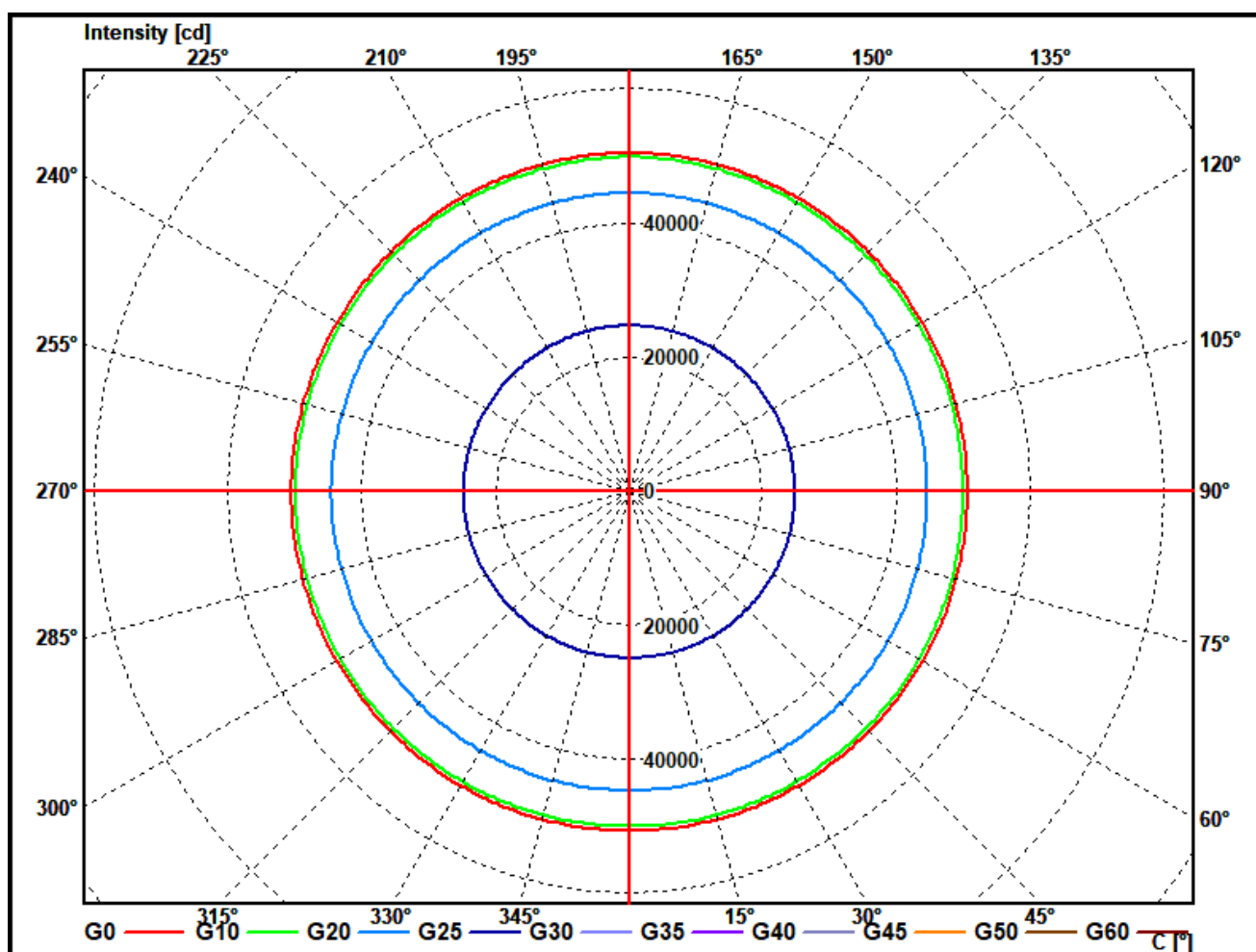




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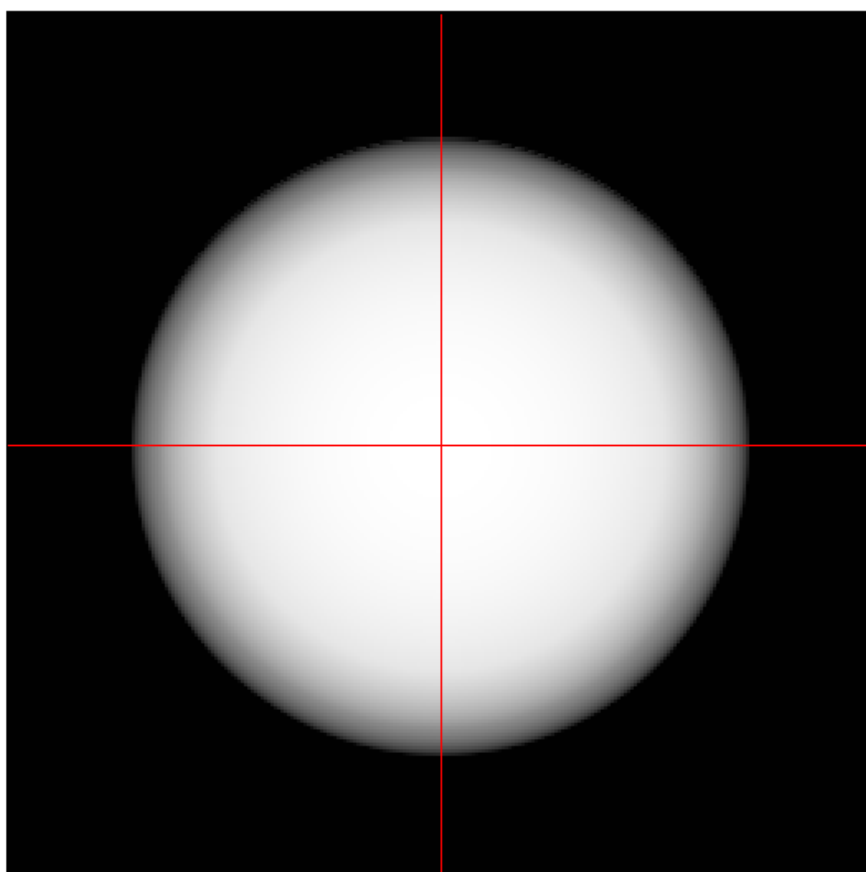
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### Isoline diagram MAC VIPER XIP wide beam



Luminaire mounting height above ground: 10 m  
Luminaire rotation angle: 0 °

testsample:

dimensions [L x W x H]: 430 x 270 x 760 mm



*test equipment - ILUmetriX GmbH*

- goniophotometer with mirror arrangement GO-DS 2000 No.: 09A84831	Manufacturer: LMT GmbH, Berlin
- Photometer head GO-DS 2000, Nr.: 09A84812	Manufacturer: LMT GmbH, Berlin
- integrating sphere UL 1650/2250, Nr.: 09A8482	Manufacturer: LMT GmbH, Berlin
- colormeter C 1210 with colorimeterhead CH60	Manufacturer: LMT GmbH, Berlin
- power supply, Chroma 6415	Manufacturer: Chroma ATE INC.
- powermeter, Yokogawa WT 2010	Manufacturer: Yokogawa, Japan