

customer:

date: 29.10.2024

Harman Professional Denmark ApS.
Olof Palmes Allé 44

8200 Aarhus N
Denmark

project No: 24000108-2

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 - medium beam

Serial No.: 15077051976

DMX settings: dimmer: 65535
 zoom: 22528
 focus: 30080
 fans: full fan

test sample dimensions:

luminaire dimensions:

length:	440 mm
width:	325 mm
height:	755 mm
diameter:	- mm

dimensions of luminant areas:

length:	- mm
width:	- mm
height:	- mm
diameter:	132 mm

measurement configuration:

	area	step size
C- planes	0 - 360°	1°
γ- angle	0 - 15°	1°
	15 - 90°	5°

luminaire position: hanging, light beam vertical

light center: central, bottom of light output

test results:

stabilization time: 30 min.

stability of luminous flux: < 1%

luminous flux:

upper half space	lower half space	overall
-	28164,82 lm	28164,82 lm
-	100 %	100 %

max. luminous intensity: 176343,8 cd @ ($\gamma=0^\circ/C=0^\circ$)
 beam angles:

half beam 50 % :	26,5°
field angle 10% :	29,3°
cutoff angel 3% :	29,8°

symmetry condition: rotational symmetric

luminous efficiency: 30,10 lm/W

electrical operating conditions:

voltage:	230,0 V (const. < 0.1%)
current:	4,113 A
system power:	935,60 W
power factor:	0,989

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:	230,01 V
Name:	MAC VIPER XIP medium beam	Current:	4,111 A
Report:	24000108-2	System Power:	935,6 W
Date:	25.10.2024 12:06:38		
Operator:	F. Siepe	No. of lamps:	1
		MAC VIPER XIP medium beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

Luminaire data

LiTG-class:	A60		
UTE-class:	Not available		
IES-class:	100 - 100 - 100 - 100 - 100		
TM5-class:	Not available		
Divergences in the plane through maximum intensity:	Horizontal	Vertical	
One half peak divergence:	26,5°	26,5°	
Half peak side angle (left):	-13,2°	-13,2°	
Half peak side angle (right):	13,2°	13,2°	
One tenth peak divergence:	29,3°	29,3°	
Tenth peak side angle (left):	-14,6°	-14,6°	
Tenth peak side angle (right):	14,6°	14,6°	

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Intensity [cd] MAC VIPER XIP medium beam

G/C [cd]	0,0
0,0	176343,8
1,0	176210,0
2,0	176132,3
3,0	176153,5
4,0	175802,5
5,0	175495,1
6,0	173866,1
7,0	171875,2
8,0	168949,6
9,0	165475,0
10,0	160100,5
11,0	152385,0
12,0	139728,0
13,0	100343,7
14,0	46491,7
15,0	1590,0
20,0	67,0
25,0	34,5
30,0	23,4
35,0	16,0
40,0	11,2
45,0	8,1
50,0	5,9
55,0	4,1
60,0	2,6
65,0	1,2
70,0	0,1
75,0	0,1
80,0	0,1
85,0	0,0
90,0	0,0

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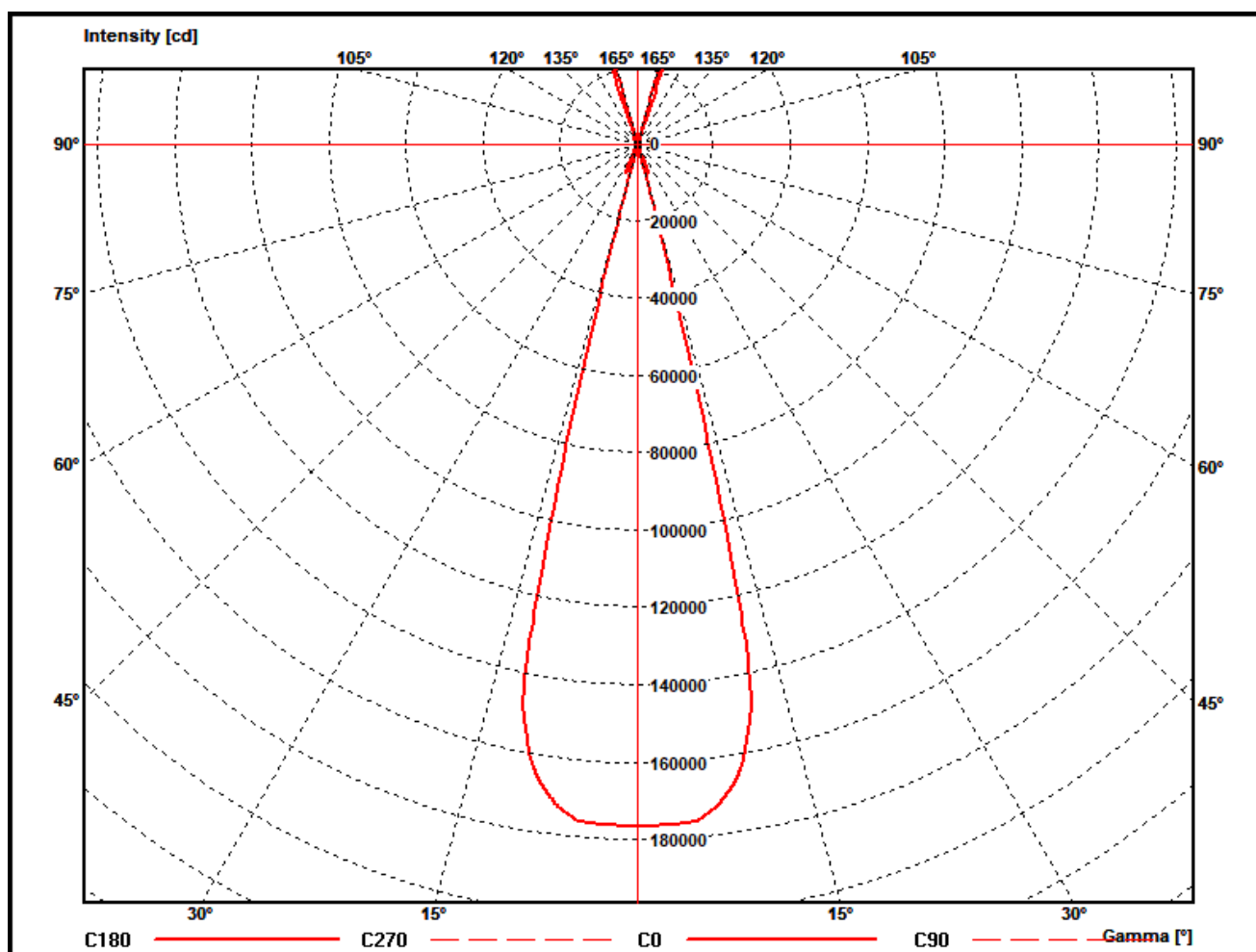
Zonal flux MAC VIPER XIP medium beam

Gamma [°]	Imin [cd]	Imax [cd]	Imean [cd]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
0,0	176343,8	176343,8	176343,8	0,0	0,00	0,00	0,00
1,0	176210,0	176210,0	176210,0	168,7	168,69	0,60	0,60
2,0	176132,3	176132,3	176132,3	505,7	674,40	1,80	2,39
3,0	176153,5	176153,5	176153,5	842,6	1516,96	2,99	5,39
4,0	175802,5	175802,5	175802,5	1178,1	2695,07	4,18	9,57
5,0	175495,1	175495,1	175495,1	1511,3	4206,33	5,37	14,93
6,0	173866,1	173866,1	173866,1	1836,0	6042,31	6,52	21,45
7,0	171875,2	171875,2	171875,2	2146,0	8188,32	7,62	29,07
8,0	168949,6	168949,6	168949,6	2439,2	10627,54	8,66	37,73
9,0	165475,0	165475,0	165475,0	2710,3	13337,87	9,62	47,36
10,0	160100,5	160100,5	160100,5	2946,3	16284,21	10,46	57,82
11,0	152385,0	152385,0	152385,0	3122,4	19406,58	11,09	68,90
12,0	139728,0	139728,0	139728,0	3193,2	22599,79	11,34	80,24
13,0	100343,7	100343,7	100343,7	2849,0	25448,84	10,12	90,36
14,0	46491,7	46491,7	46491,7	1879,5	27328,32	6,67	97,03
15,0	1590,0	1590,0	1590,0	660,1	27988,41	2,34	99,37
20,0	67,0	67,0	67,0	136,6	28124,96	0,48	99,86
25,0	34,5	34,5	34,5	10,7	28135,62	0,04	99,90
30,0	23,4	23,4	23,4	7,3	28142,95	0,03	99,92
35,0	16,0	16,0	16,0	5,8	28148,76	0,02	99,94
40,0	11,2	11,2	11,2	4,5	28153,29	0,02	99,96
45,0	8,1	8,1	8,1	3,6	28156,88	0,01	99,97
50,0	5,9	5,9	5,9	2,8	28159,71	0,01	99,98
55,0	4,1	4,1	4,1	2,2	28161,88	0,01	99,99
60,0	2,6	2,6	2,6	1,5	28163,42	0,01	100,00
65,0	1,2	1,2	1,2	0,9	28164,35	0,00	100,00
70,0	0,1	0,1	0,1	0,3	28164,68	0,00	100,00
75,0	0,1	0,1	0,1	0,1	28164,74	0,00	100,00
80,0	0,1	0,1	0,1	0,0	28164,77	0,00	100,00
85,0	0,0	0,0	0,0	0,0	28164,80	0,00	100,00
90,0	0,0	0,0	0,0	0,0	28164,82	0,00	100,00

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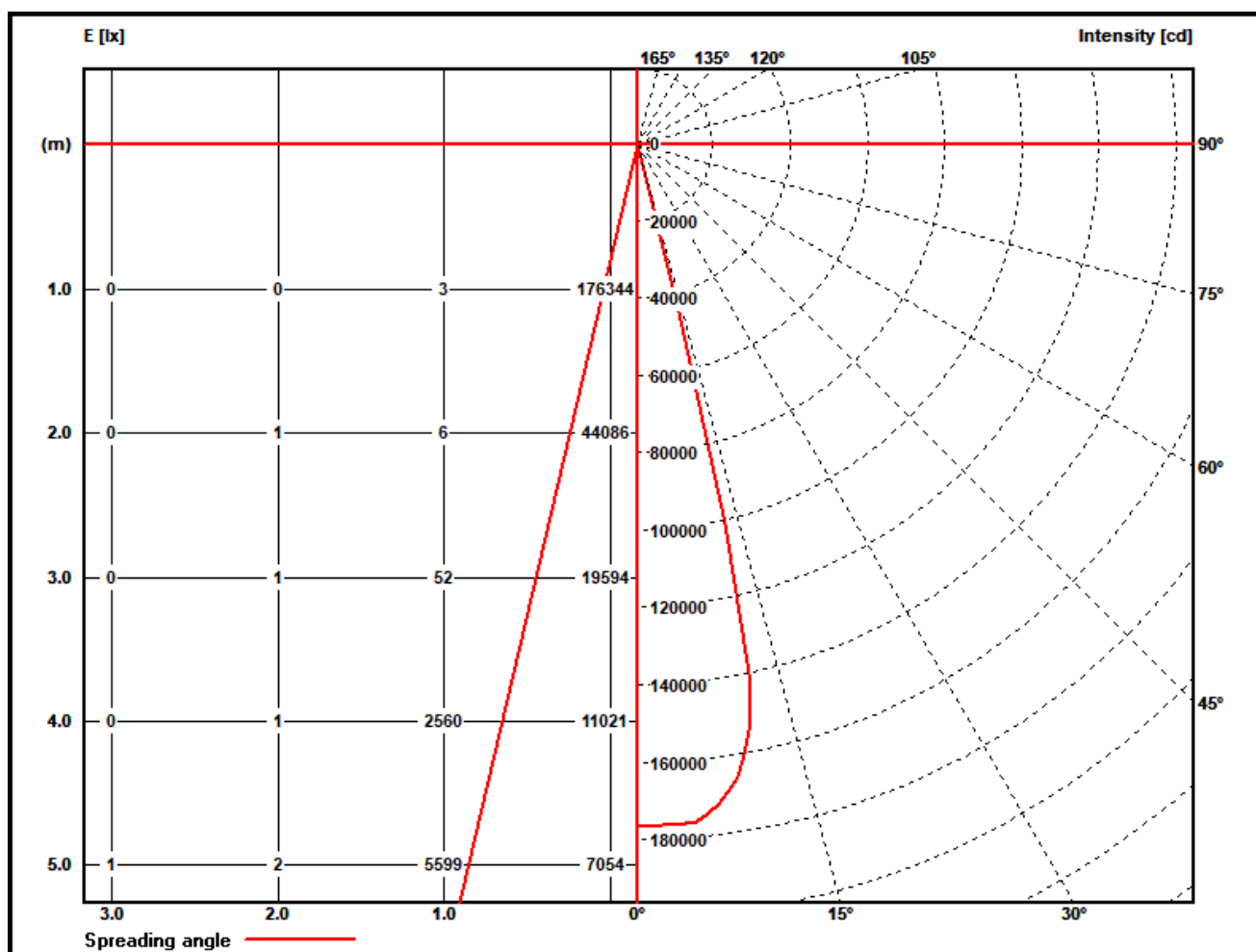
Polar diagram MAC VIPER XIP medium beam



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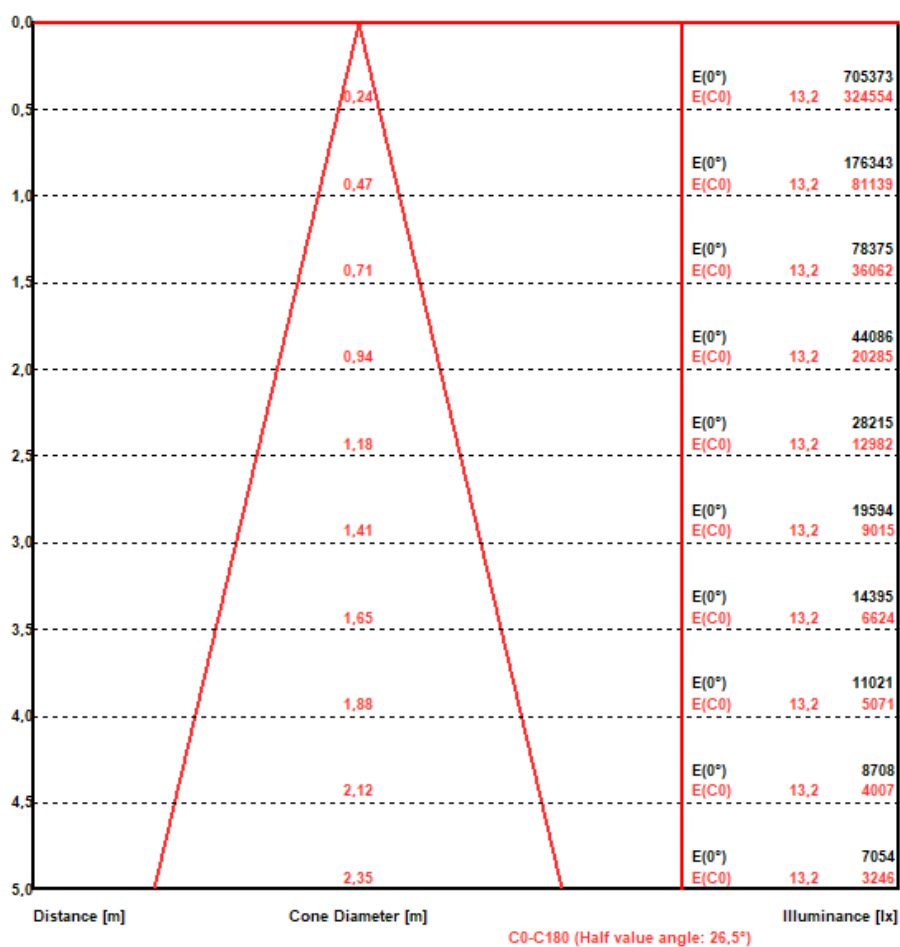
Illuminance and Intensity diagram MAC VIPER XIP medium beam



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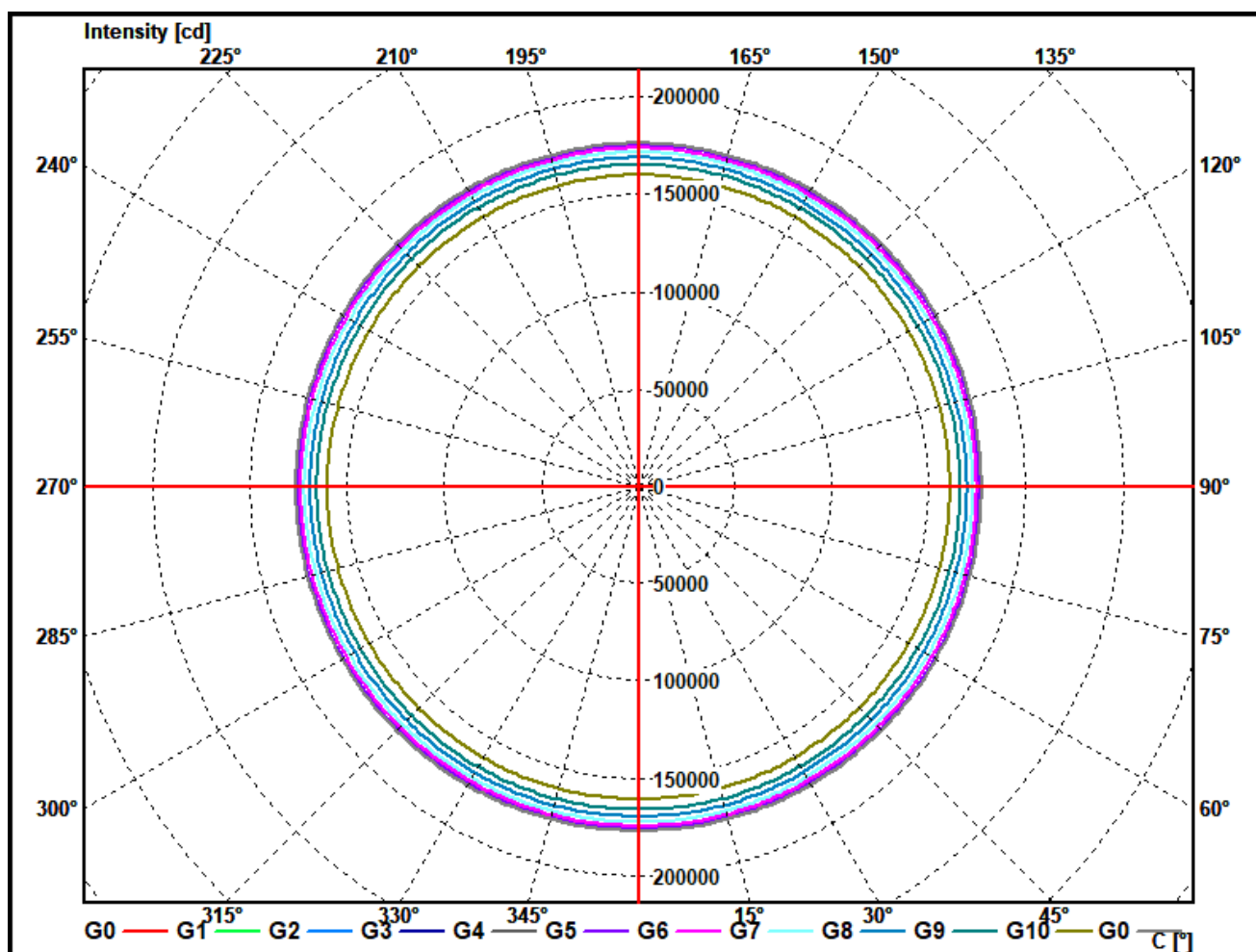
Illuminance cone diagram MAC VIPER XIP medium beam



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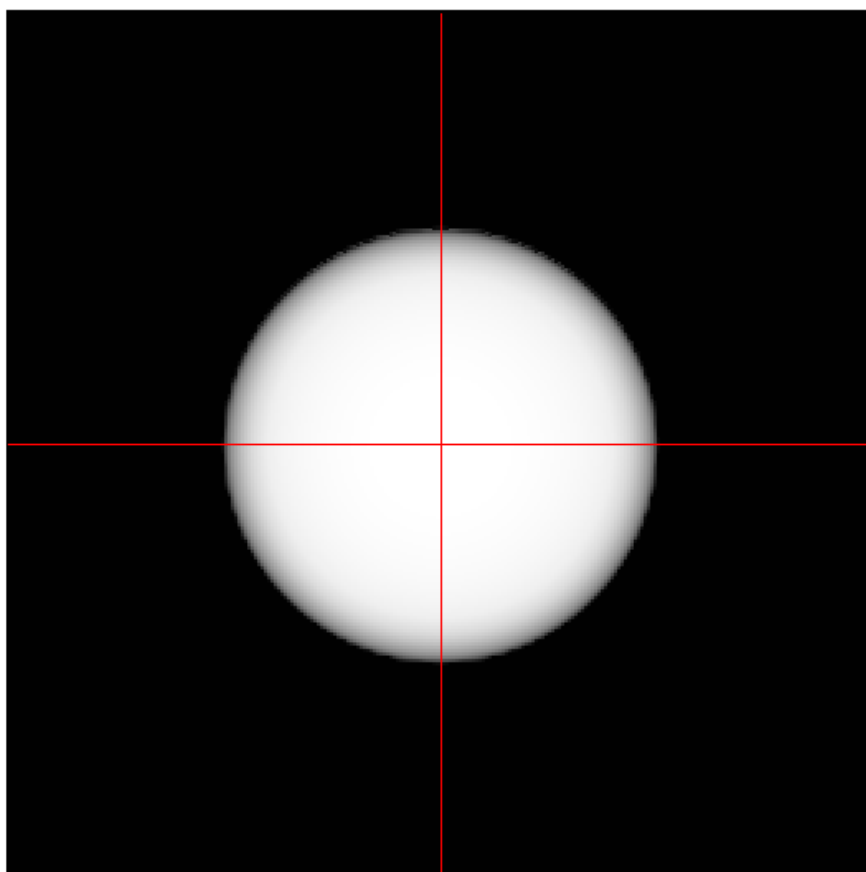
Cone diagram MAC VIPER XIP medium beam



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Isoline diagram MAC VIPER XIP medium beam



Luminaire mounting height above ground: 15 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