

Customer:

date: 01.10.2025

Harman Professional Denmark ApS.  
Olof Palmes Allé 44

8200 Aarhus N  
Denmark

Project No: 25000137-1

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 Encore Two - narrow beam

Serial No.: 15000000014

DMX Settings: dimmer: 65535  
zoom: 62720  
focus: 0  
fans: Regulated High

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 - 5°	0.2°
	5 - 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
-	12314,22 lm	12314,22 lm
-	100 %	100 %

Luminous Intensity max.: 1965800,0 cd @ (γ=0°/C=0°)

Beam Angles:  
Half Beam 50 % : 5,3°  
Field Angle 10% : 6,3°  
Cutoff Angel 3% : 6,7°

Symmetry Condition: Rotational symmetric

Luminous Efficacy: 14,25 lm/W

Electrical operating conditions:

voltage: 230,0 V (const. < 0.1%)  
current: 3,802 A  
system power: 863,90 W  
power factor: 0,988

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, 01.10.2025



F. Siepe (Management Board)



Annex: page 3-10 Test Report  
page 11 Test Sample  
page 12 Test Equipment

## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	230,01 V
Name:	MAC Encore Two narrow beam	Current:	3,803 A
Report:	25000134-1	System Power:	863,9 W
Date:	30.09.2025 14:24:54		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two narrow beam	
Luminaire dimensions:			
Length:	430 mm		
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>	Not available		
<b>Divergences in the plane through maximum intensity:</b>	Horizontal	Vertical	
<b>One half peak divergence:</b>	5,3°	5,3°	
<b>Half peak side angle (left):</b>	-2,6°	-2,6°	
<b>Half peak side angle (right):</b>	2,6°	2,6°	
<b>One tenth peak divergence:</b>	6,3°	6,3°	
<b>Tenth peak side angle (left):</b>	-3,2°	-3,2°	
<b>Tenth peak side angle (right):</b>	3,2°	3,2°	

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### Intensity [cd] MAC Encore Two narrow beam

G/C [cd]	0,0
0,0	1965800,0
0,2	1963321,0
0,4	1959192,0
0,6	1949557,0
0,8	1924294,0
1,0	1896873,0
1,2	1850758,0
1,4	1768644,0
1,6	1733581,0
1,8	1602509,0
2,0	1548379,0
2,2	1374992,0
2,4	1306794,0
2,6	1080543,0
2,8	614179,4
3,0	478505,5
3,2	122101,4
3,4	22151,0
3,6	1734,4
3,8	1559,1
4,0	1129,0
4,2	1020,6
4,4	846,7
4,6	725,1
4,8	621,4
5,0	553,2
10,0	102,4
15,0	45,9
20,0	28,4
25,0	19,6
30,0	14,0
35,0	11,2
40,0	12,2
45,0	16,0
50,0	15,8
55,0	13,8
60,0	9,4
65,0	4,9
70,0	0,2
75,0	0,1
80,0	0,1
85,0	0,1
90,0	0,0

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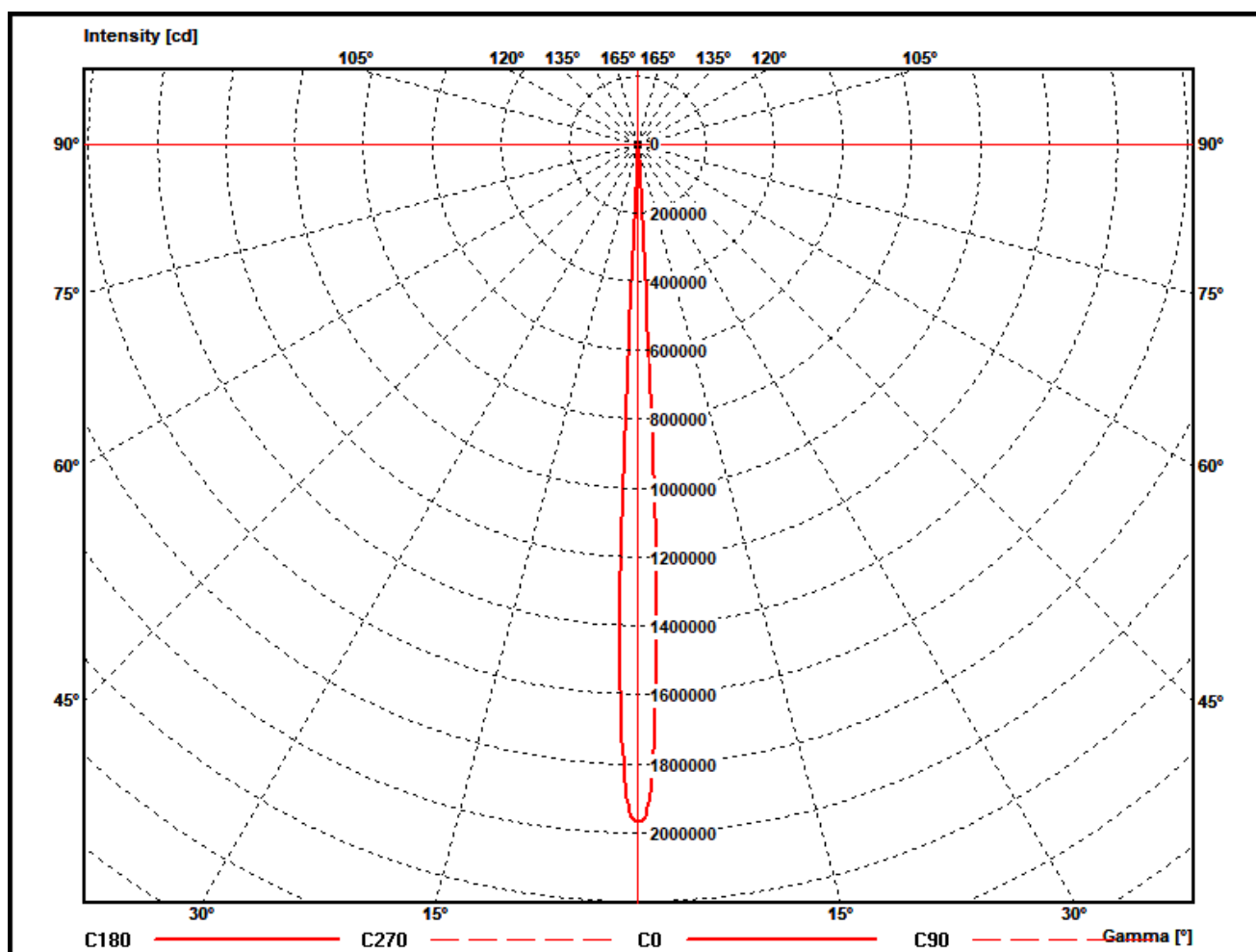
### Zonal flux MAC Encore Two narrow beam

Gamma [°]	Imin [cd]	Imax [cd]	Imean [cd]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
0,0	1965800,0	1965800,0	1965800,0	0,0	0,00	0,00	0,00
0,2	1963321,0	1963321,0	1963321,0	75,2	75,20	0,61	0,61
0,4	1959192,0	1959192,0	1959192,0	225,2	300,43	1,83	2,44
0,6	1949557,0	1949557,0	1949557,0	374,1	674,48	3,04	5,48
0,8	1924294,0	1924294,0	1924294,0	519,0	1193,48	4,21	9,69
1,0	1896873,0	1896873,0	1896873,0	658,2	1851,68	5,35	15,04
1,2	1850758,0	1850758,0	1850758,0	789,0	2640,64	6,41	21,44
1,4	1768644,0	1768644,0	1768644,0	900,5	3541,13	7,31	28,76
1,6	1733581,0	1733581,0	1733581,0	1005,4	4546,48	8,16	36,92
1,8	1602509,0	1602509,0	1602509,0	1085,3	5631,80	8,81	45,73
2,0	1548379,0	1548379,0	1548379,0	1145,6	6777,42	9,30	55,04
2,2	1374992,0	1374992,0	1374992,0	1174,7	7952,16	9,54	64,58
2,4	1306794,0	1306794,0	1306794,0	1180,2	9132,40	9,58	74,16
2,6	1080543,0	1080543,0	1080543,0	1142,0	10274,36	9,27	83,43
2,8	614179,4	614179,4	614179,4	875,5	11149,82	7,11	90,54
3,0	478505,5	478505,5	478505,5	606,2	11756,05	4,92	95,47
3,2	122101,4	122101,4	122101,4	356,2	12112,24	2,89	98,36
3,4	22151,0	22151,0	22151,0	91,1	12203,30	0,74	99,10
3,6	1734,4	1734,4	1734,4	16,0	12219,29	0,13	99,23
3,8	1559,1	1559,1	1559,1	2,3	12221,62	0,02	99,25
4,0	1129,0	1129,0	1129,0	2,0	12223,62	0,02	99,26
4,2	1020,6	1020,6	1020,6	1,7	12225,31	0,01	99,28
4,4	846,7	846,7	846,7	1,5	12226,84	0,01	99,29
4,6	725,1	725,1	725,1	1,4	12228,20	0,01	99,30
4,8	621,4	621,4	621,4	1,2	12229,41	0,01	99,31
5,0	553,2	553,2	553,2	1,1	12230,51	0,01	99,32
10,0	102,4	102,4	102,4	23,5	12253,96	0,19	99,51
15,0	45,9	45,9	45,9	8,8	12262,75	0,07	99,58
20,0	28,4	28,4	28,4	6,1	12268,87	0,05	99,63
25,0	19,6	19,6	19,6	5,0	12273,91	0,04	99,67
30,0	14,0	14,0	14,0	4,3	12278,17	0,03	99,71
35,0	11,2	11,2	11,2	3,7	12281,88	0,03	99,74
40,0	12,2	12,2	12,2	3,9	12285,78	0,03	99,77
45,0	16,0	16,0	16,0	5,2	12291,00	0,04	99,81
50,0	15,8	15,8	15,8	6,4	12297,43	0,05	99,86
55,0	13,8	13,8	13,8	6,4	12303,87	0,05	99,92
60,0	9,4	9,4	9,4	5,4	12309,24	0,04	99,96
65,0	4,9	4,9	4,9	3,5	12312,72	0,03	99,99
70,0	0,2	0,2	0,2	1,3	12314,01	0,01	100,00
75,0	0,1	0,1	0,1	0,1	12314,10	0,00	100,00
80,0	0,1	0,1	0,1	0,1	12314,15	0,00	100,00
85,0	0,1	0,1	0,1	0,0	12314,19	0,00	100,00
90,0	0,0	0,0	0,0	0,0	12314,21	0,00	100,00

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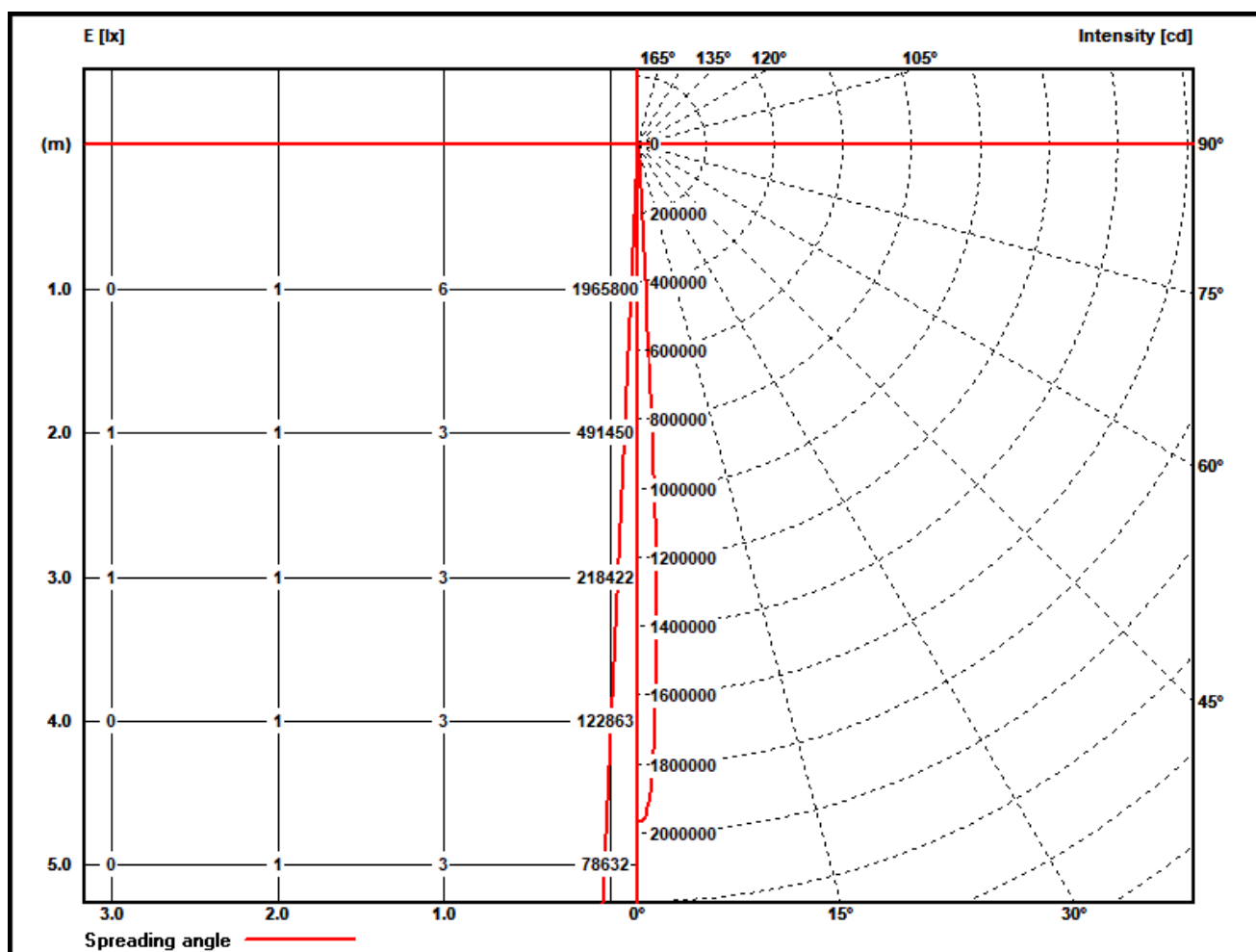
### Polar diagram MAC Encore Two narrow beam



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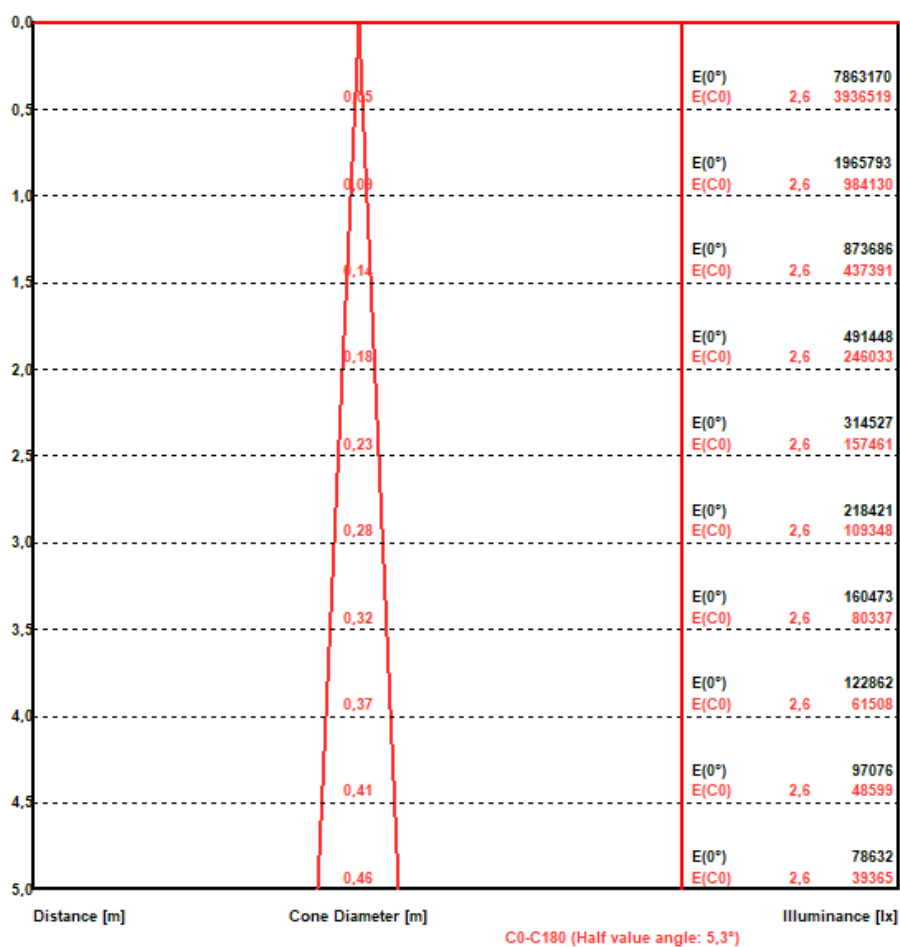
### Illuminance and Intensity diagram MAC Encore Two narrow beam



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### Illuminance cone diagram MAC Encore Two narrow beam

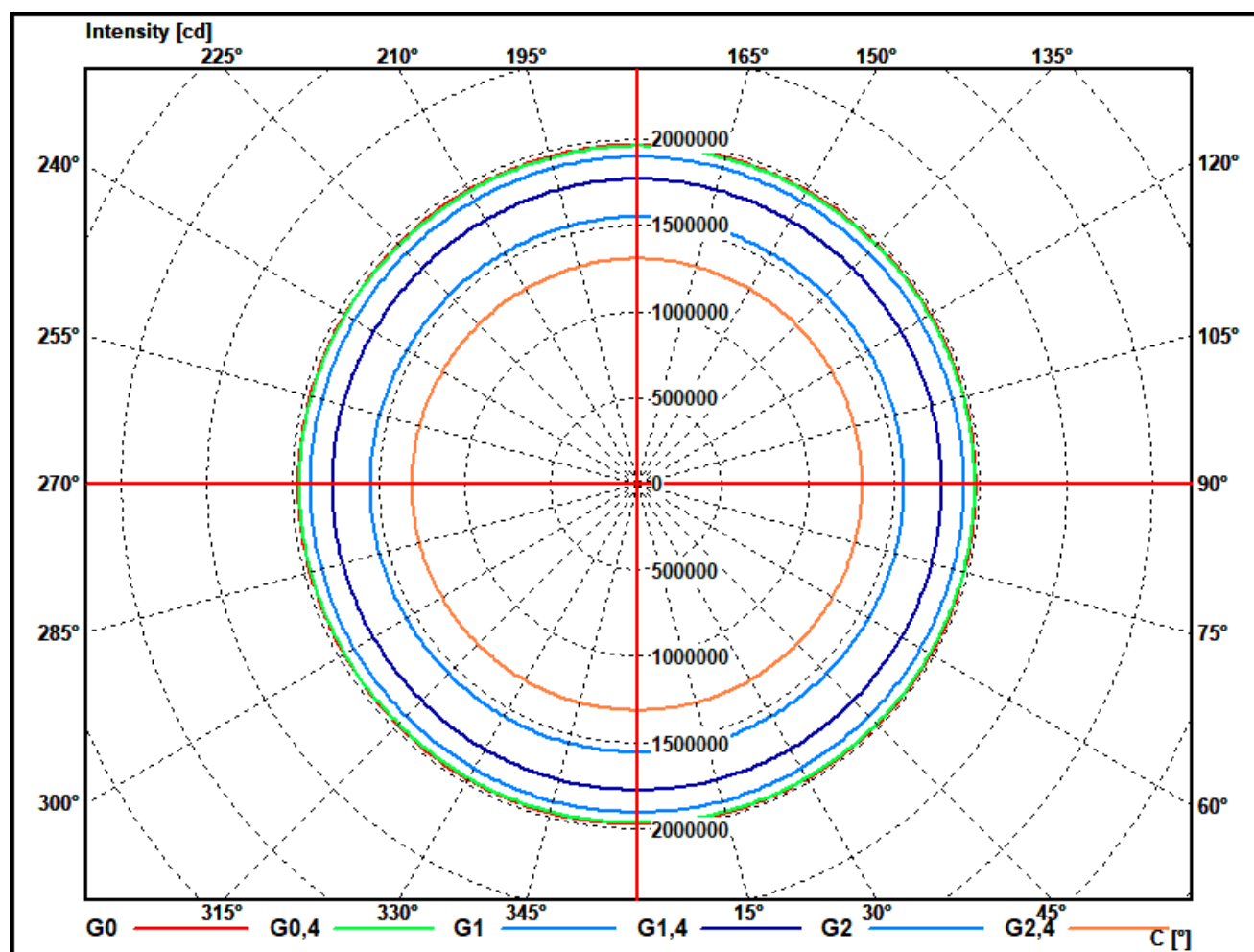




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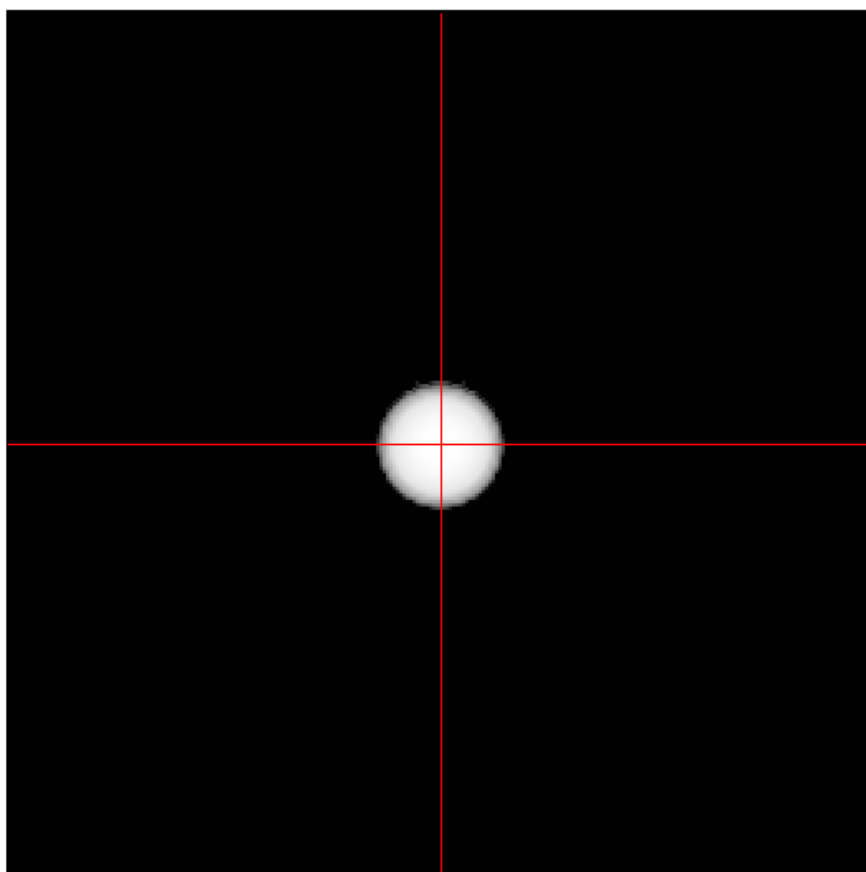
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### Isoline diagram MAC Encore Two narrow beam



Luminaire mounting height above ground: 20 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