

Customer:

date: 09.10.2025

Harman Professional Denmark ApS.  
Olof Palmes Allé 44

8200 Aarhus N  
Denmark

Project No: 25000137-2

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 Encore Two - medium beam

Serial No.: 15000000014

DMX Settings:      dimmer: 65535  
                         zoom: 22528  
                         focus: 29568  
                         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 - 90°	1°

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
-	20236,83 lm	20236,83 lm
-	100 %	100 %

Luminous Intensity max.: 129587,7 cd @ (γ=0°/C=0°)

Beam Angles:

Half Beam 50 % :	26,9°
Field Angle 10% :	30,0°
Cutoff Angel 3% :	31,4°

Symmetry Condition: Rotational symmetric

Luminous Efficacy: 23,42 lm/W

Electrical operating conditions:

voltage: 230,0 V (const. < 0.1%)  
 current: 3,803 A  
 system power: 864,10 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, 09.10.2025



F. Siepe (Management Board)



Annex: page 3-12 Test Report  
 page 13 Test Sample  
 page 14 Test Equipment

## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,97 V
Name:	MAC Encore Two medium beam 1°	Current:	3,803 A
Report:	25000137-2	System Power:	864,1 W
Date:	08.10.2025 13:57:48		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two 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:	26,9°	26,9°	
Half peak side angle (left):	-13,5°	-13,5°	
Half peak side angle (right):	13,5°	13,5°	
One tenth peak divergence:	30,0°	30,0°	
Tenth peak side angle (left):	-15,0°	-15,0°	
Tenth peak side angle (right):	15,0°	15,0°	

## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,97 V
Name:	MAC Encore Two medium beam 1°	Current:	3,803 A
Report:	25000137-2	System Power:	864,1 W
Date:	08.10.2025 13:57:48		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two medium beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

### Intensity [cd] MAC Encore Two medium beam 1°

G/C [cd]	0,0
0,0	129588,7
1,0	129327,5
2,0	129020,7
3,0	128248,5
4,0	126994,8
5,0	125673,0
6,0	123481,4
7,0	120416,3
8,0	115752,3
9,0	112048,7
10,0	106389,3
11,0	99968,3
12,0	91444,7
13,0	82211,6
14,0	45304,4
15,0	12469,2
16,0	127,2
17,0	77,3
18,0	55,0
19,0	43,7
20,0	35,7
21,0	28,8
22,0	23,2
23,0	19,6
24,0	17,1
25,0	15,2
26,0	13,3
27,0	11,9
28,0	10,5
29,0	9,7
30,0	9,0
31,0	8,8
32,0	8,1
33,0	7,3
34,0	6,6
35,0	6,1
36,0	5,6
37,0	5,2
38,0	4,8
39,0	4,5
40,0	4,1
41,0	3,8
42,0	3,6
43,0	3,3
44,0	3,1
45,0	2,9
46,0	2,7

## Intensity [cd] MAC Encore Two medium beam 1°

<b>G/C [cd]</b>	<b>0,0</b>
47,0	2,5
48,0	2,4
49,0	2,2
50,0	2,0
51,0	1,9
52,0	1,7
53,0	1,6
54,0	1,5
55,0	1,4
56,0	1,3
57,0	1,2
58,0	1,1
59,0	1,0
60,0	0,9
61,0	0,8
62,0	0,7
63,0	0,6
64,0	0,5
65,0	0,4
66,0	0,3
67,0	0,3
68,0	0,2
69,0	0,1
70,0	0,1
71,0	0,1
72,0	0,1
73,0	0,1
74,0	0,1
75,0	0,1
76,0	0,1
77,0	0,1
78,0	0,1
79,0	0,0
80,0	0,0
81,0	0,0
82,0	0,0
83,0	0,0
84,0	0,0
85,0	0,0
86,0	0,0
87,0	0,0
88,0	0,0
89,0	0,0
90,0	0,0

## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,97 V
Name:	MAC Encore Two medium beam 1°	Current:	3,803 A
Report:	25000137-2	System Power:	864,1 W
Date:	08.10.2025 13:57:48		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two medium beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

### Zonal flux MAC Encore Two medium beam 1°

Gamma [°]	Imin [cd]	Imax [cd]	Imean [cd]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
0,0	129587,7	129587,7	129587,7	0,0	0,00	0,00	0,00
1,0	129326,4	129326,4	129326,4	123,9	123,89	0,61	0,61
2,0	129019,6	129019,6	129019,6	370,8	494,69	1,83	2,44
3,0	128247,4	128247,4	128247,4	615,3	1109,99	3,04	5,48
4,0	126993,7	126993,7	126993,7	854,4	1964,36	4,22	9,71
5,0	125671,9	125671,9	125671,9	1087,0	3051,31	5,37	15,08
6,0	123480,4	123480,4	123480,4	1309,4	4360,67	6,47	21,55
7,0	120415,3	120415,3	120415,3	1513,9	5874,53	7,48	29,03
8,0	115751,3	115751,3	115751,3	1690,2	7564,73	8,35	37,38
9,0	112047,8	112047,8	112047,8	1846,2	9410,92	9,12	46,50
10,0	106388,4	106388,4	106388,4	1976,8	11387,68	9,77	56,27
11,0	99967,5	99967,5	99967,5	2061,9	13449,60	10,19	66,46
12,0	91443,9	91443,9	91443,9	2092,4	15542,00	10,34	76,80
13,0	82210,9	82210,9	82210,9	2060,8	17602,85	10,18	86,98
14,0	45304,0	45304,0	45304,0	1632,2	19235,03	8,07	95,05
15,0	12469,0	12469,0	12469,0	793,1	20028,16	3,92	98,97
16,0	127,2	127,2	127,2	184,6	20212,73	0,91	99,88
17,0	77,3	77,3	77,3	3,2	20215,92	0,02	99,90
18,0	55,0	55,0	55,0	2,2	20218,10	0,01	99,91
19,0	43,7	43,7	43,7	1,7	20219,81	0,01	99,92
20,0	35,7	35,7	35,7	1,5	20221,27	0,01	99,92
21,0	28,8	28,8	28,8	1,2	20222,50	0,01	99,93
22,0	23,2	23,2	23,2	1,0	20223,55	0,01	99,93
23,0	19,6	19,6	19,6	0,9	20224,45	0,00	99,94
24,0	17,1	17,1	17,1	0,8	20225,25	0,00	99,94
25,0	15,2	15,2	15,2	0,7	20225,98	0,00	99,95
26,0	13,3	13,3	13,3	0,7	20226,66	0,00	99,95
27,0	11,9	11,9	11,9	0,6	20227,27	0,00	99,95
28,0	10,5	10,5	10,5	0,6	20227,84	0,00	99,96
29,0	9,7	9,7	9,7	0,5	20228,37	0,00	99,96
30,0	9,0	9,0	9,0	0,5	20228,88	0,00	99,96
31,0	8,8	8,8	8,8	0,5	20229,37	0,00	99,96
32,0	8,1	8,1	8,1	0,5	20229,85	0,00	99,97
33,0	7,3	7,3	7,3	0,5	20230,31	0,00	99,97
34,0	6,6	6,6	6,6	0,4	20230,73	0,00	99,97
35,0	6,1	6,1	6,1	0,4	20231,12	0,00	99,97
36,0	5,6	5,6	5,6	0,4	20231,49	0,00	99,97
37,0	5,2	5,2	5,2	0,4	20231,84	0,00	99,98
38,0	4,8	4,8	4,8	0,3	20232,18	0,00	99,98
39,0	4,5	4,5	4,5	0,3	20232,49	0,00	99,98
40,0	4,1	4,1	4,1	0,3	20232,79	0,00	99,98
41,0	3,8	3,8	3,8	0,3	20233,07	0,00	99,98
42,0	3,6	3,6	3,6	0,3	20233,34	0,00	99,98
43,0	3,3	3,3	3,3	0,3	20233,60	0,00	99,98
44,0	3,1	3,1	3,1	0,2	20233,84	0,00	99,99

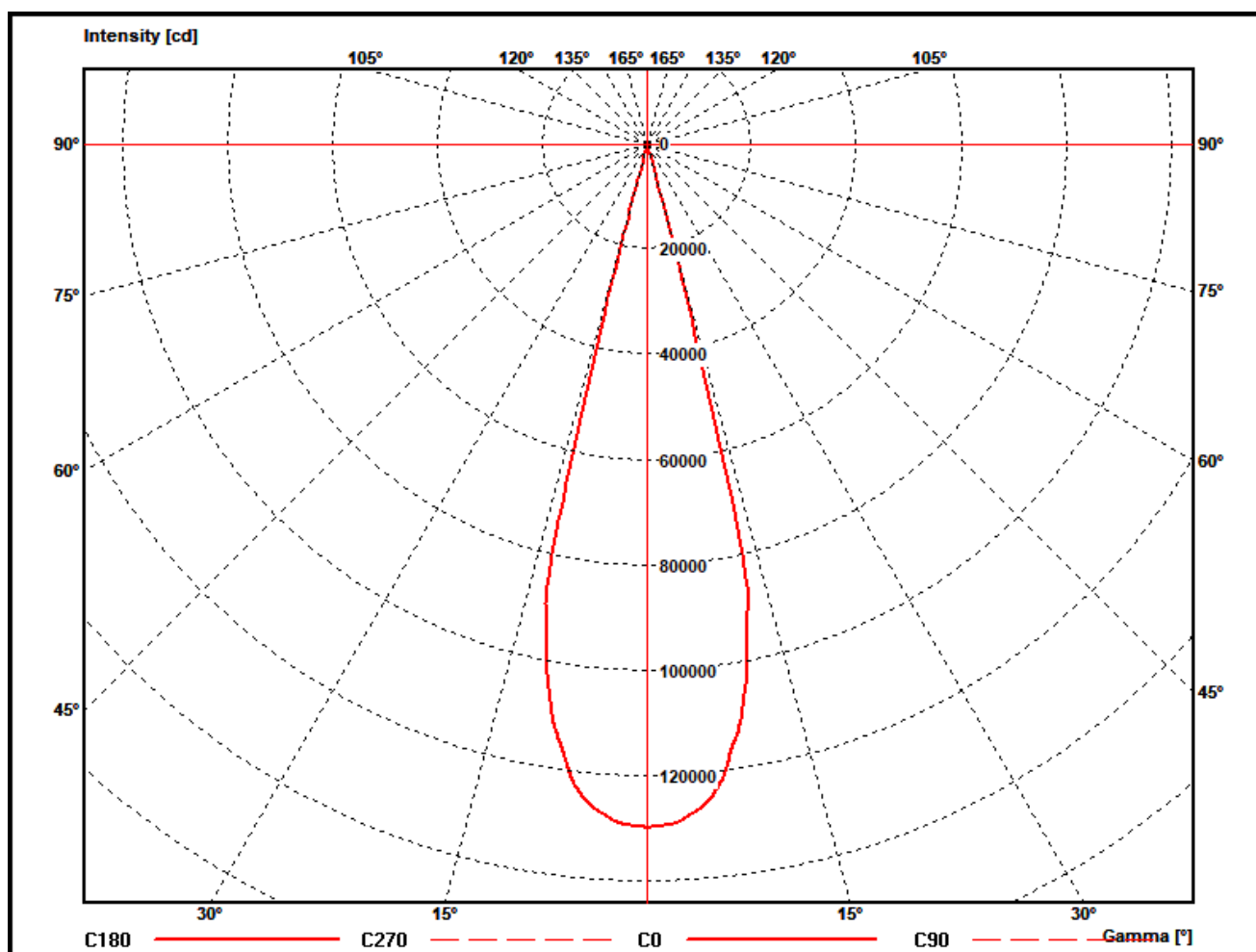
## Zonal flux MAC Encore Two medium beam 1°

Gamma [°]	Imin [cd]	Imax [cd]	Imean [cd]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
45,0	2,9	2,9	2,9	0,2	20234,07	0,00	99,99
46,0	2,7	2,7	2,7	0,2	20234,29	0,00	99,99
47,0	2,5	2,5	2,5	0,2	20234,50	0,00	99,99
48,0	2,4	2,4	2,4	0,2	20234,70	0,00	99,99
49,0	2,2	2,2	2,2	0,2	20234,88	0,00	99,99
50,0	2,0	2,0	2,0	0,2	20235,06	0,00	99,99
51,0	1,9	1,9	1,9	0,2	20235,22	0,00	99,99
52,0	1,7	1,7	1,7	0,2	20235,38	0,00	99,99
53,0	1,6	1,6	1,6	0,1	20235,53	0,00	99,99
54,0	1,5	1,5	1,5	0,1	20235,66	0,00	99,99
55,0	1,4	1,4	1,4	0,1	20235,79	0,00	99,99
56,0	1,3	1,3	1,3	0,1	20235,91	0,00	100,00
57,0	1,2	1,2	1,2	0,1	20236,02	0,00	100,00
58,0	1,1	1,1	1,1	0,1	20236,13	0,00	100,00
59,0	1,0	1,0	1,0	0,1	20236,22	0,00	100,00
60,0	0,9	0,9	0,9	0,1	20236,31	0,00	100,00
61,0	0,8	0,8	0,8	0,1	20236,39	0,00	100,00
62,0	0,7	0,7	0,7	0,1	20236,46	0,00	100,00
63,0	0,6	0,6	0,6	0,1	20236,52	0,00	100,00
64,0	0,5	0,5	0,5	0,1	20236,57	0,00	100,00
65,0	0,4	0,4	0,4	0,0	20236,62	0,00	100,00
66,0	0,3	0,3	0,3	0,0	20236,65	0,00	100,00
67,0	0,3	0,3	0,3	0,0	20236,68	0,00	100,00
68,0	0,2	0,2	0,2	0,0	20236,71	0,00	100,00
69,0	0,1	0,1	0,1	0,0	20236,72	0,00	100,00
70,0	0,1	0,1	0,1	0,0	20236,73	0,00	100,00
71,0	0,1	0,1	0,1	0,0	20236,73	0,00	100,00
72,0	0,1	0,1	0,1	0,0	20236,74	0,00	100,00
73,0	0,1	0,1	0,1	0,0	20236,75	0,00	100,00
74,0	0,1	0,1	0,1	0,0	20236,75	0,00	100,00
75,0	0,1	0,1	0,1	0,0	20236,76	0,00	100,00
76,0	0,1	0,1	0,1	0,0	20236,77	0,00	100,00
77,0	0,1	0,1	0,1	0,0	20236,77	0,00	100,00
78,0	0,1	0,1	0,1	0,0	20236,78	0,00	100,00
79,0	0,0	0,0	0,0	0,0	20236,78	0,00	100,00
80,0	0,0	0,0	0,0	0,0	20236,79	0,00	100,00
81,0	0,0	0,0	0,0	0,0	20236,79	0,00	100,00
82,0	0,0	0,0	0,0	0,0	20236,80	0,00	100,00
83,0	0,0	0,0	0,0	0,0	20236,80	0,00	100,00
84,0	0,0	0,0	0,0	0,0	20236,80	0,00	100,00
85,0	0,0	0,0	0,0	0,0	20236,81	0,00	100,00
86,0	0,0	0,0	0,0	0,0	20236,81	0,00	100,00
87,0	0,0	0,0	0,0	0,0	20236,82	0,00	100,00
88,0	0,0	0,0	0,0	0,0	20236,82	0,00	100,00
89,0	0,0	0,0	0,0	0,0	20236,83	0,00	100,00
90,0	0,0	0,0	0,0	0,0	20236,83	0,00	100,00

## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,97 V
Name:	MAC Encore Two medium beam 1°	Current:	3,803 A
Report:	25000137-2	System Power:	864,1 W
Date:	08.10.2025 13:57:48		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two medium beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

### Polar diagram MAC Encore Two medium beam 1°

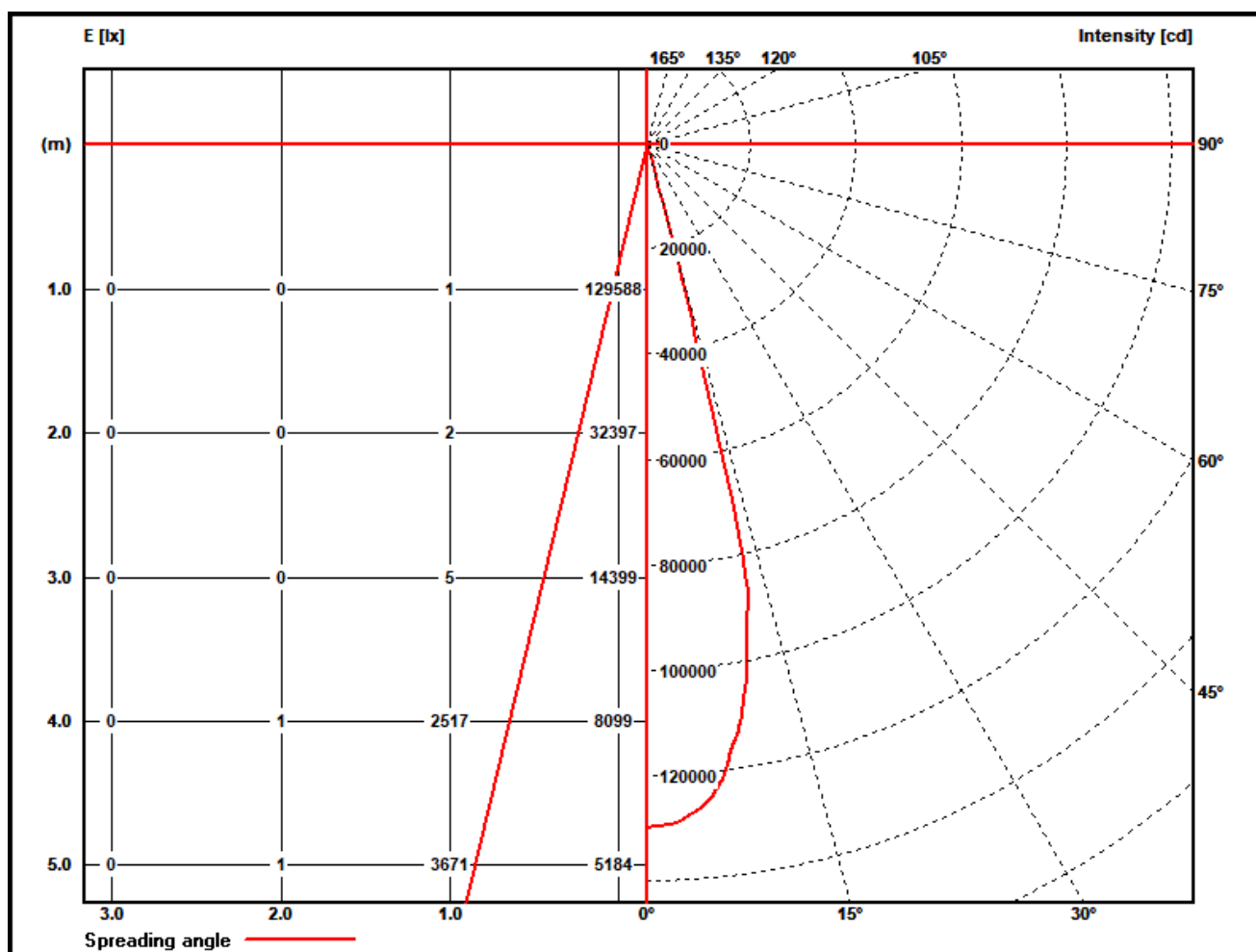




## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,97 V
Name:	MAC Encore Two medium beam 1°	Current:	3,803 A
Report:	25000137-2	System Power:	864,1 W
Date:	08.10.2025 13:57:48		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two medium beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

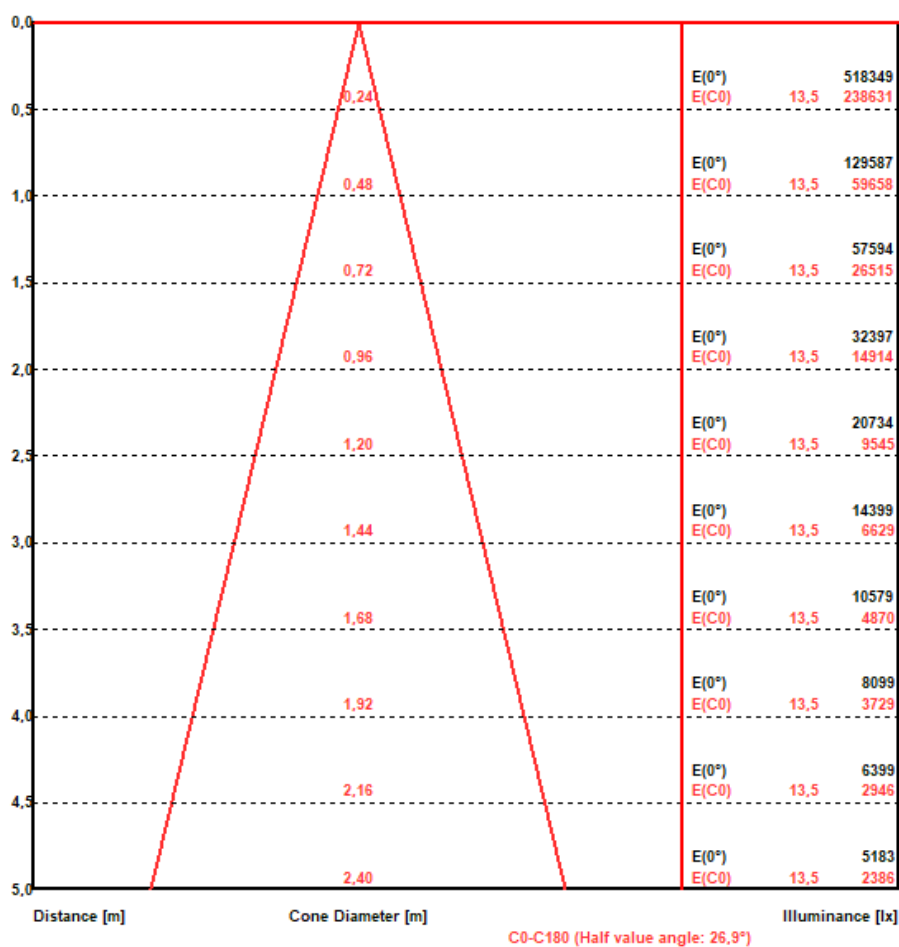
### Illuminance and Intensity diagram MAC Encore Two medium beam 1°



## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,97 V
Name:	MAC Encore Two medium beam 1°	Current:	3,803 A
Report:	25000137-2	System Power:	864,1 W
Date:	08.10.2025 13:57:48		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two medium beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

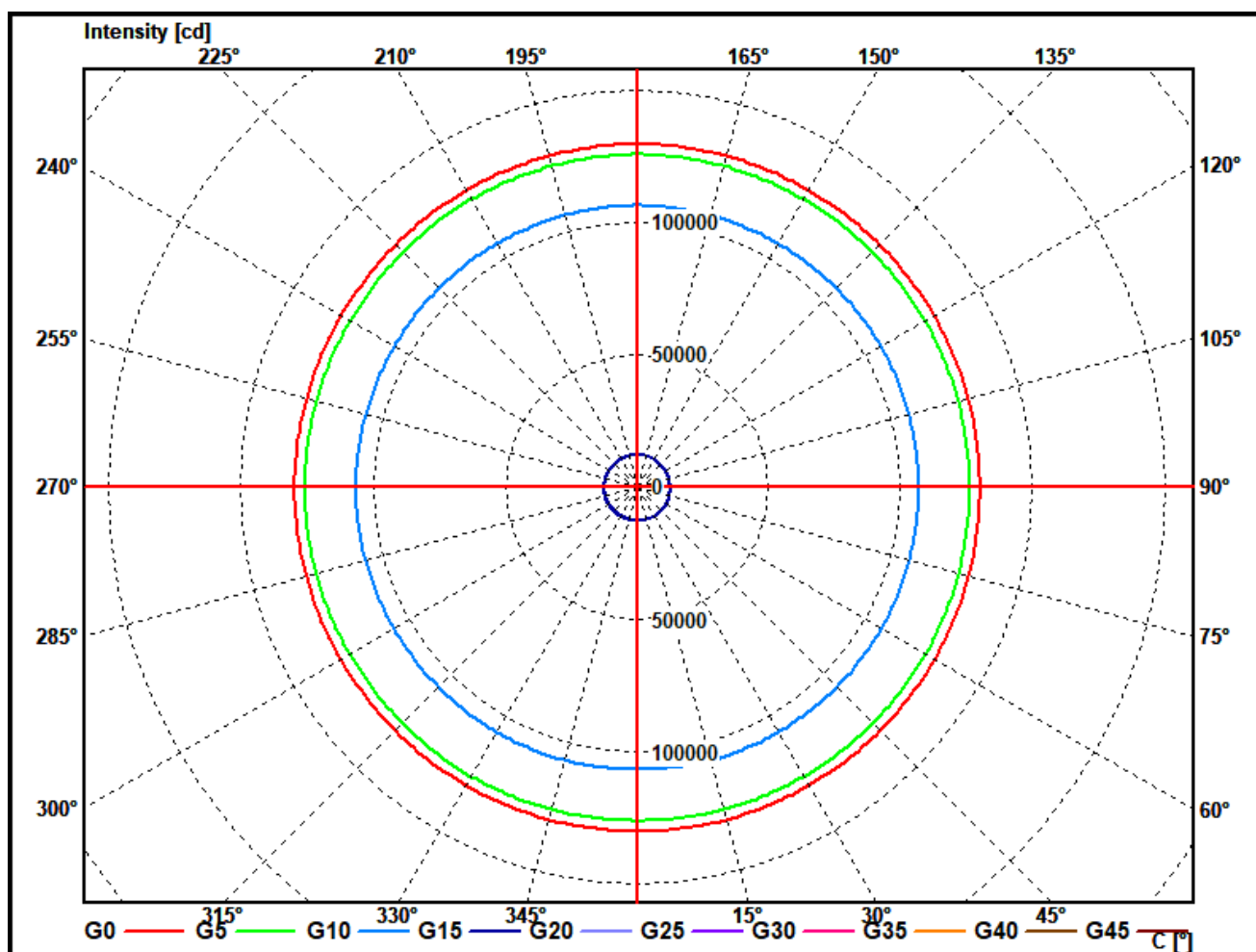
### Illuminance cone diagram MAC Encore Two medium beam 1°



## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,97 V
Name:	MAC Encore Two medium beam 1°	Current:	3,803 A
Report:	25000137-2	System Power:	864,1 W
Date:	08.10.2025 13:57:48		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two medium beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

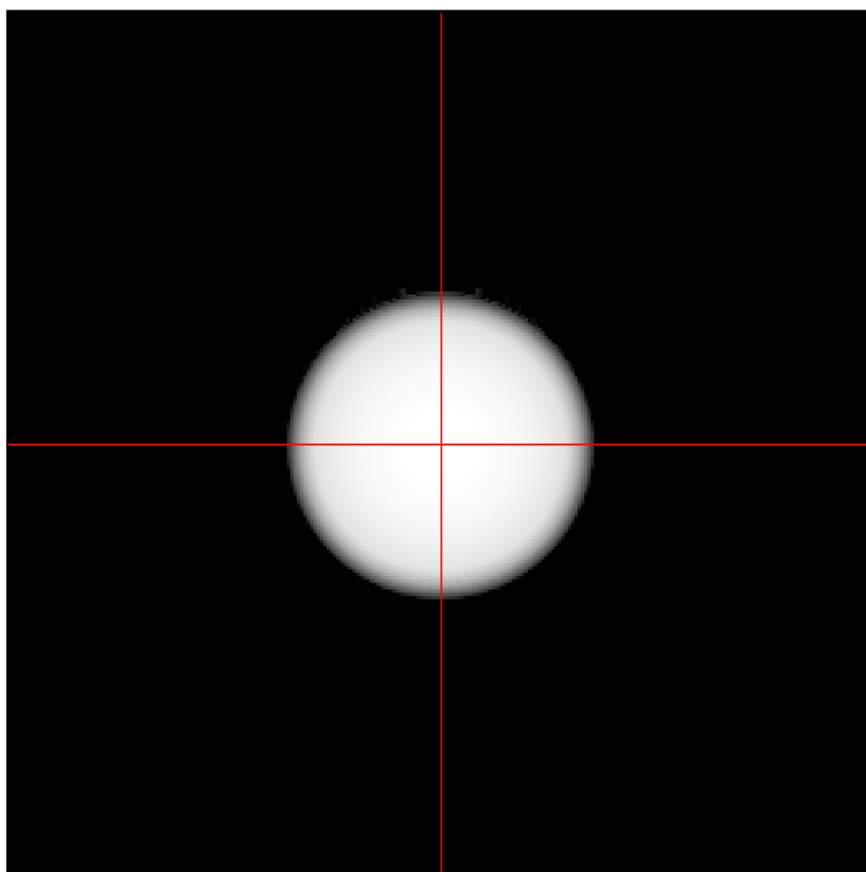
### Cone diagram MAC Encore Two medium beam 1°



## PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	229,97 V
Name:	MAC Encore Two medium beam 1°	Current:	3,803 A
Report:	25000137-2	System Power:	864,1 W
Date:	08.10.2025 13:57:48		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two medium beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

### Isoline diagram MAC Encore Two medium beam 1°



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