

Customer:

date: 01.10.2025

Harman Professional Denmark ApS.
Olof Palmes Allé 44

8200 Aarhus N
Denmark

Project No: 25000137-3

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 Encore Two - wide beam

Serial No.: 15000000014

DMX Settings: dimmer: 65535
 zoom: 0
 focus: 22400
 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°	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: < 1%

Luminous Flux:

upper half space	lower half space	overall
-	21293,93 lm	21293,93 lm
-	100 %	100 %

Luminous Intensity max.: 40460,2 cd @ (γ=0°/C=0°)

Beam Angles:

Half Beam 50 % :	48,8°
Field Angle 10% :	57,4°
Cutoff Angel 3% :	59,2°

Symmetry Condition: Rotational symmetric

Luminous Efficacy: 24,64 lm/W

Electrical operating conditions:

voltage: 230,0 V (const. < 0.1%)
current: 3,802 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, 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:	230,02 V
Name:	MAC Encore Two wide beam	Current:	3,802 A
Report:	25000137-3	System Power:	864,1 W
Date:	30.09.2025 13:00:19		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two wide 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:	BZ1		
Divergences in the plane through maximum intensity:	Horizontal	Vertical	
One half peak divergence:	48,8°	48,8°	
Half peak side angle (left):	-24,4°	-24,4°	
Half peak side angle (right):	24,4°	24,4°	
One tenth peak divergence:	57,4°	57,4°	
Tenth peak side angle (left):	-28,7°	-28,7°	
Tenth peak side angle (right):	28,7°	28,7°	

PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	230,02 V
Name:	MAC Encore Two wide beam	Current:	3,802 A
Report:	25000137-3	System Power:	864,1 W
Date:	30.09.2025 13:00:19		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two wide beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

Intensity [cd] MAC Encore Two wide beam

G/C [cd]	0,0
0,0	40460,2
2,5	40358,8
5,0	40005,2
7,5	39564,3
10,0	38832,4
12,5	37766,2
15,0	36174,3
17,5	33829,2
20,0	30921,7
22,5	27478,7
25,0	17984,8
27,5	7765,8
30,0	47,3
32,5	30,8
35,0	23,9
37,5	17,6
40,0	14,1
42,5	11,4
45,0	9,1
47,5	7,3
50,0	5,9
52,5	4,7
55,0	3,8
57,5	2,9
60,0	2,2
62,5	1,6
65,0	1,0
67,5	0,5
70,0	0,2
72,5	0,1
75,0	0,1
77,5	0,1
80,0	0,1
82,5	0,1
85,0	0,0
87,5	0,0
90,0	0,0

PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	230,02 V
Name:	MAC Encore Two wide beam	Current:	3,802 A
Report:	25000137-3	System Power:	864,1 W
Date:	30.09.2025 13:00:19		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two wide beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

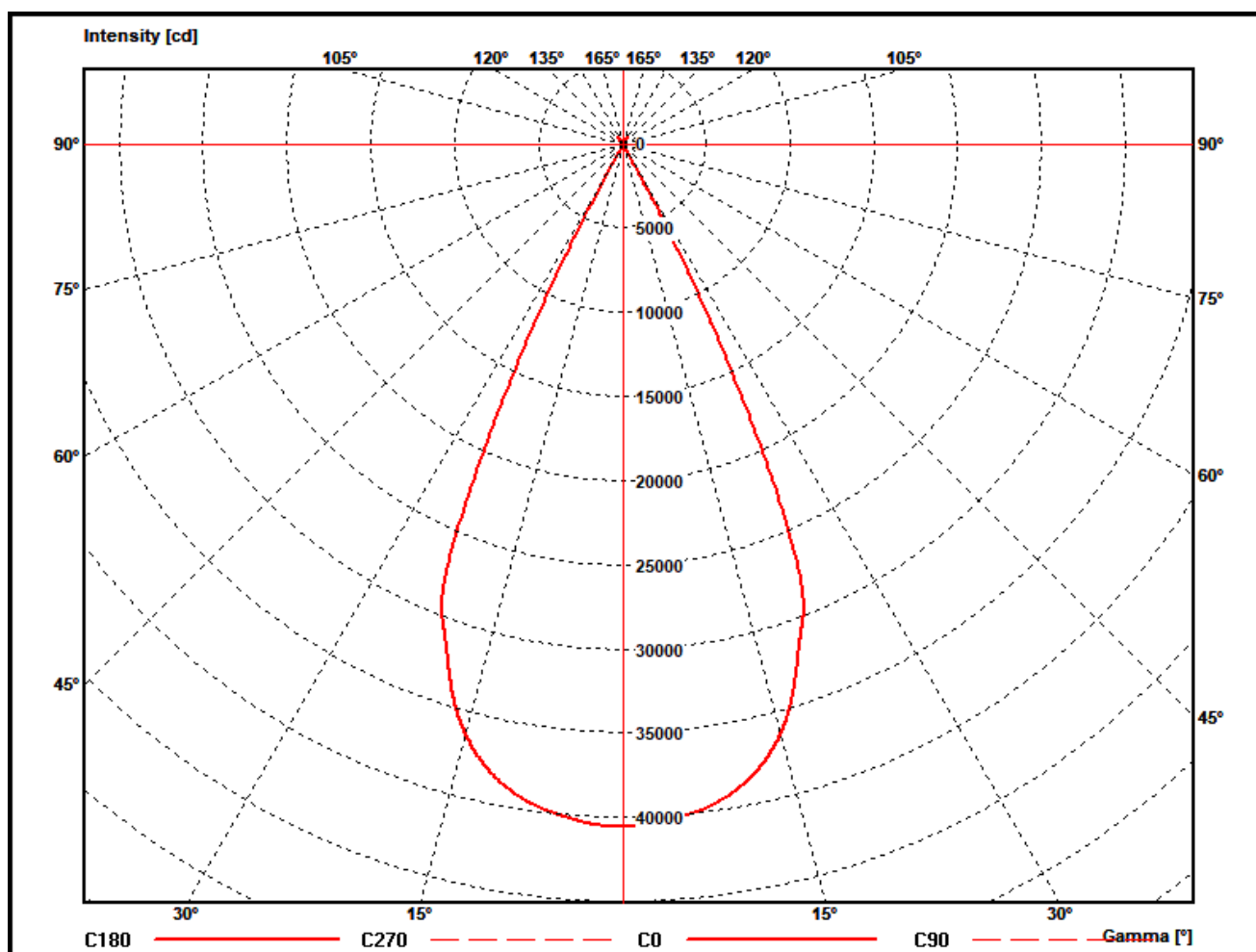
Zonal flux MAC Encore Two wide beam

Gamma [°]	Imin [cd]	Imax [cd]	Imean [cd]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
0,0	40460,2	40460,2	40460,2	0,0	0,00	0,00	0,00
2,5	40358,8	40358,8	40358,8	241,7	241,66	1,13	1,13
5,0	40005,2	40005,2	40005,2	720,4	962,09	3,38	4,52
7,5	39564,3	39564,3	39564,3	1187,3	2149,43	5,58	10,09
10,0	38832,4	38832,4	38832,4	1634,7	3784,09	7,68	17,77
12,5	37766,2	37766,2	37766,2	2048,3	5832,36	9,62	27,39
15,0	36174,3	36174,3	36174,3	2408,9	8241,27	11,31	38,70
17,5	33829,2	33829,2	33829,2	2685,0	10926,27	12,61	51,31
20,0	30921,7	30921,7	30921,7	2852,8	13779,12	13,40	64,71
22,5	27478,7	27478,7	27478,7	2901,2	16680,35	13,62	78,33
25,0	17984,8	17984,8	17984,8	2509,7	19190,08	11,79	90,12
27,5	7765,8	7765,8	7765,8	1561,1	20751,17	7,33	97,45
30,0	47,3	47,3	47,3	515,1	21266,27	2,42	99,87
32,5	30,8	30,8	30,8	5,6	21271,82	0,03	99,90
35,0	23,9	23,9	23,9	4,2	21275,98	0,02	99,92
37,5	17,6	17,6	17,6	3,4	21279,35	0,02	99,93
40,0	14,1	14,1	14,1	2,7	21282,07	0,01	99,94
42,5	11,4	11,4	11,4	2,3	21284,37	0,01	99,96
45,0	9,1	9,1	9,1	1,9	21286,31	0,01	99,96
47,5	7,3	7,3	7,3	1,6	21287,94	0,01	99,97
50,0	5,9	5,9	5,9	1,4	21289,30	0,01	99,98
52,5	4,7	4,7	4,7	1,1	21290,43	0,01	99,98
55,0	3,8	3,8	3,8	0,9	21291,37	0,00	99,99
57,5	2,9	2,9	2,9	0,8	21292,14	0,00	99,99
60,0	2,2	2,2	2,2	0,6	21292,74	0,00	99,99
62,5	1,6	1,6	1,6	0,4	21293,19	0,00	100,00
65,0	1,0	1,0	1,0	0,3	21293,50	0,00	100,00
67,5	0,5	0,5	0,5	0,2	21293,68	0,00	100,00
70,0	0,2	0,2	0,2	0,1	21293,76	0,00	100,00
72,5	0,1	0,1	0,1	0,0	21293,80	0,00	100,00
75,0	0,1	0,1	0,1	0,0	21293,83	0,00	100,00
77,5	0,1	0,1	0,1	0,0	21293,85	0,00	100,00
80,0	0,1	0,1	0,1	0,0	21293,88	0,00	100,00
82,5	0,1	0,1	0,1	0,0	21293,89	0,00	100,00
85,0	0,0	0,0	0,0	0,0	21293,90	0,00	100,00
87,5	0,0	0,0	0,0	0,0	21293,91	0,00	100,00
90,0	0,0	0,0	0,0	0,0	21293,93	0,00	100,00

PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	230,02 V
Name:	MAC Encore Two wide beam	Current:	3,802 A
Report:	25000137-3	System Power:	864,1 W
Date:	30.09.2025 13:00:19		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two wide beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

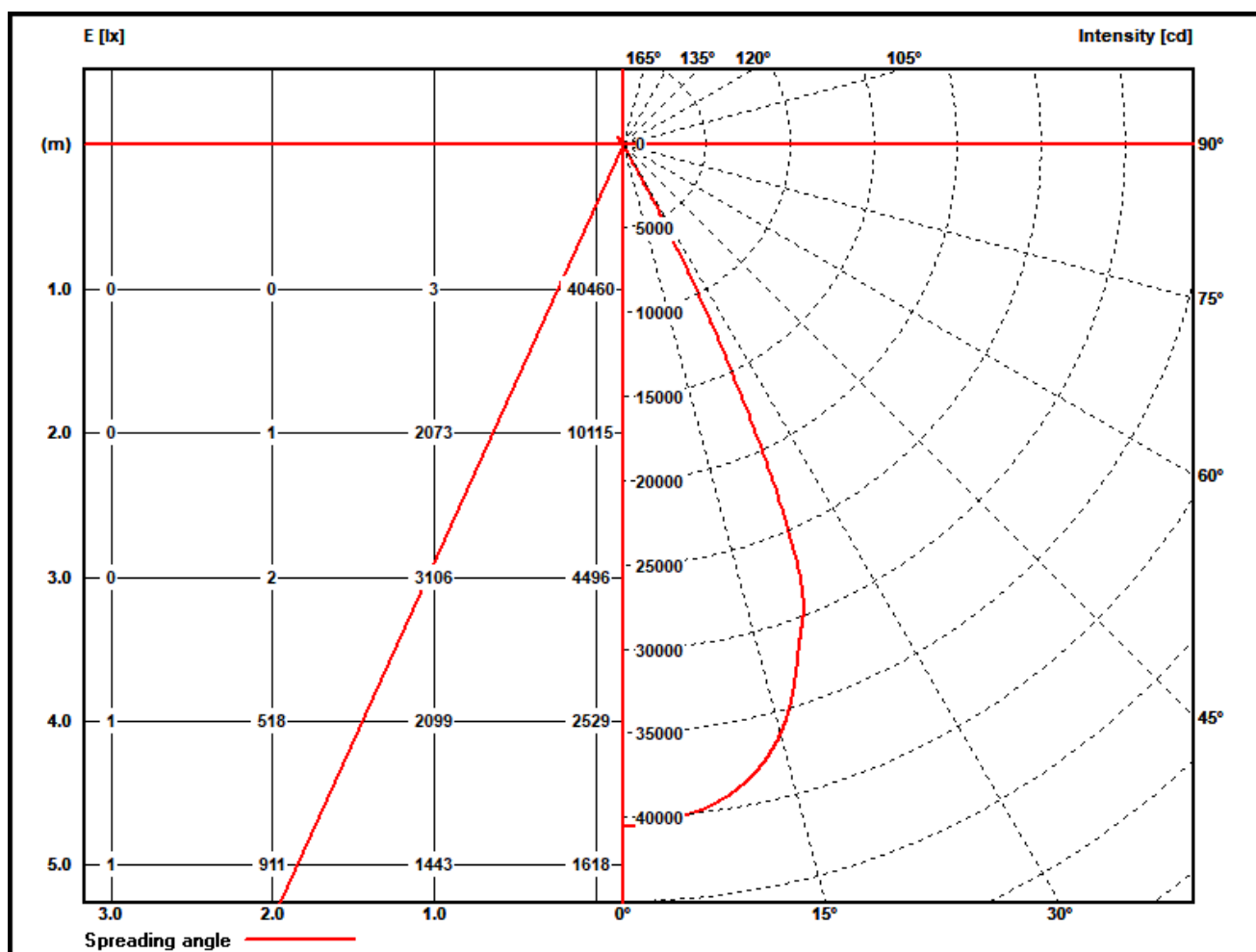
Polar diagram MAC Encore Two wide beam



PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	230,02 V
Name:	MAC Encore Two wide beam	Current:	3,802 A
Report:	25000137-3	System Power:	864,1 W
Date:	30.09.2025 13:00:19		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two wide beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

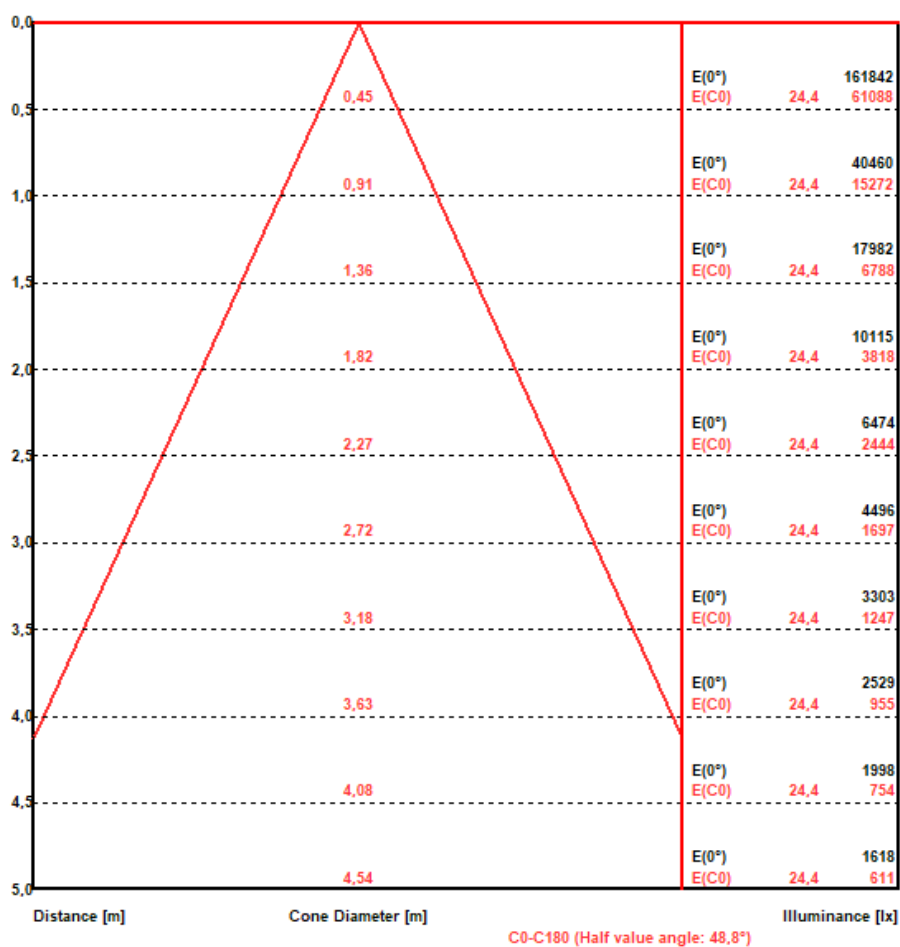
Illuminance and Intensity diagram MAC Encore Two wide beam



PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	230,02 V
Name:	MAC Encore Two wide beam	Current:	3,802 A
Report:	25000137-3	System Power:	864,1 W
Date:	30.09.2025 13:00:19		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two wide beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

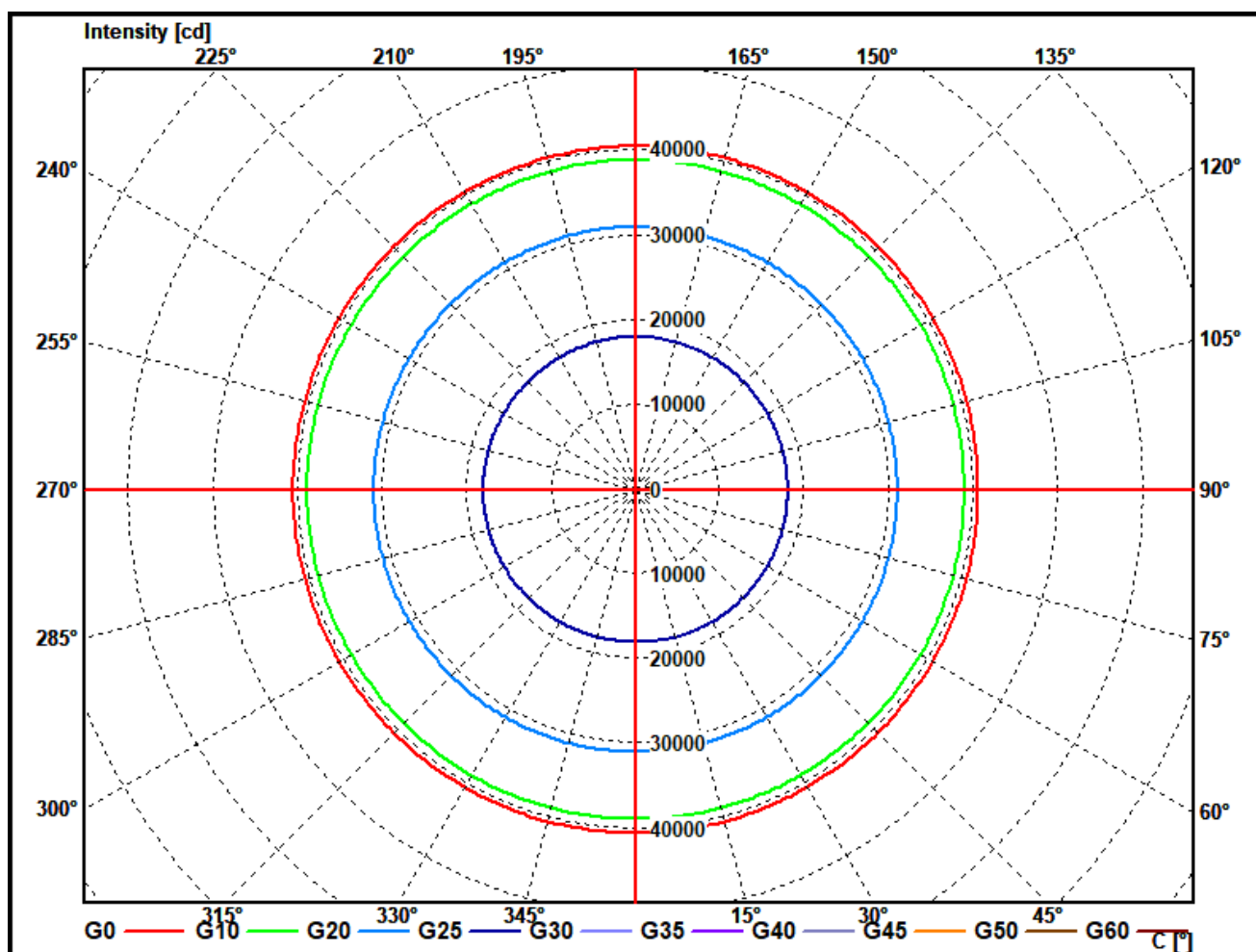
Illuminance cone diagram MAC Encore Two wide beam



PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	230,02 V
Name:	MAC Encore Two wide beam	Current:	3,802 A
Report:	25000137-3	System Power:	864,1 W
Date:	30.09.2025 13:00:19		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two wide beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

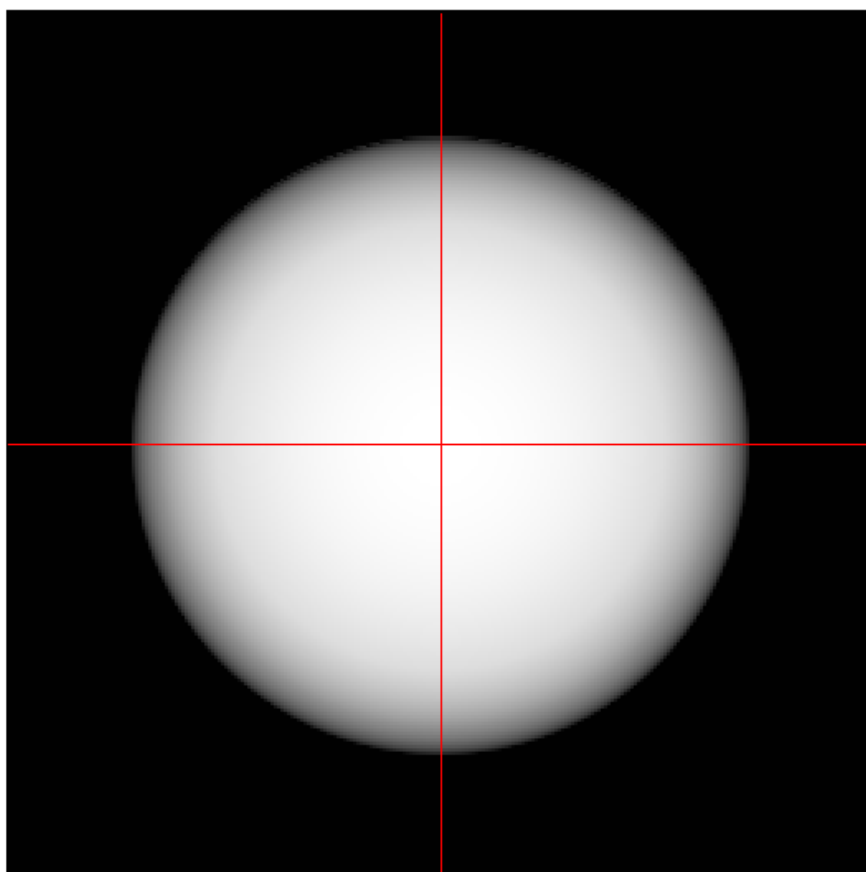
Cone diagram MAC Encore Two wide beam



PHOTOMETRIC RESULTS

Manufacturer:	Harman Professional ApS	Voltage:	230,02 V
Name:	MAC Encore Two wide beam	Current:	3,802 A
Report:	25000137-3	System Power:	864,1 W
Date:	30.09.2025 13:00:19		
Operator:	F. Siepe	No. of lamps:	1
		MAC Encore Two wide beam	
Luminaire dimensions:			
Length:	430 mm		
Height:	760 mm		
Width:	270 mm		
Diameter:	0 mm		

Isoline diagram MAC Encore Two 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