

Customer:

date: 25.06.2025

Harman Professional Denmark ApS.  
Olof Palmes Allé 44

8200 Aarhus N  
Denmark

Project No: 25000091-1

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 Aura Raven XIP - narrow beam

Serial No.: 15079820060

DMX Settings: dimmer coarse: 65536  
red, green, blue: 65536  
zoom coarse: 0  
fans: full fans

Test Sample Dimensions:

Luminaire Dimensions:

length:	510 mm
width:	280 mm
height:	500 mm
diameter:	- mm

Dimensions of luminant areas:

length:	- mm
width:	- mm
height:	- mm
diameter:	347 mm

Measurement Configuration:

	area	step size
C- planes	0 - 360°	1°
γ- angle	0 - 5°	0.2°
	5 - 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
-	25949,50 lm	25949,50 lm
-	100 %	100 %

Luminous Intensity max.: 1992321 cd @ (γ=0°/C=0°)

Beam Angles:

Half Beam 50 % : 6,5°

Field Angle 10% : 9,7°

Cutoff Angel 3% : 13,3°

Symmetry Condition: Rotational Symmetric

Luminous Efficacy: 28,61 lm/W

Electrical Operating Conditions:

voltage: 230,0 V (const. < 0.1%)

current: 3,988 A

system power: 906,90 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, 25.06.2025



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:	229,99 V
Name:	MAC Aura Raven XIP - narrow beam	Current:	3,989 A
Report:	25000091-1	System Power:	906,9 W
Date:	24.06.2025 15:30:37		
Operator:	F. Siepe	No. of lamps:	1
		MAC Aura Raven XIP - narrow beam	
Luminaire dimensions:			
Length:	510 mm		
Height:	500 mm		
Width:	280 mm		
Diameter:	0 mm		

## Luminaire data

LiTG-class:	A60		
UTE-class:	Not available		
IES-class:	98 - 99 - 100 - 100 - 100		
TM5-class:	Not available		
Divergences in the plane through maximum intensity:	Horizontal	Vertical	
One half peak divergence:	6,5°	6,5°	
Half peak side angle (left):	-3,2°	-3,2°	
Half peak side angle (right):	3,2°	3,2°	
One tenth peak divergence:	9,7°	9,7°	
Tenth peak side angle (left):	-4,8°	-4,8°	
Tenth peak side angle (right):	4,8°	4,8°	

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Height:	500 mm		
Width:	280 mm		
Diameter:	0 mm		

### Intensity [cd] MAC Aura Raven XIP - narrow beam

G/C [cd]	0,0
0,0	1992321,0
0,2	1988779,0
0,4	1980349,0
0,6	1975064,0
0,8	1959928,0
1,0	1933219,0
1,2	1914061,0
1,4	1857152,0
1,6	1828592,0
1,8	1734702,0
2,0	1691399,0
2,2	1555035,0
2,4	1497350,0
2,6	1378401,0
2,8	1268077,0
3,0	1137358,0
3,2	1020424,0
3,4	898695,2
3,6	718487,7
3,8	658925,8
4,0	500415,1
4,2	451283,1
4,4	350232,6
4,6	281165,7
4,8	209203,6
5,0	161384,7
7,5	7839,8
10,0	1683,1
12,5	881,9
15,0	597,8
17,5	458,4
20,0	387,1
22,5	348,5
25,0	333,7
27,5	339,8
30,0	367,2
32,5	418,3
35,0	478,8
37,5	522,7
40,0	522,9
42,5	467,2
45,0	404,9
47,5	341,1
50,0	265,3
52,5	208,5
55,0	161,9
57,5	126,4

## Intensity [cd] MAC Aura Raven XIP - narrow beam

<b>G/C [cd]</b>	<b>0,0</b>
<b>60,0</b>	99,6
<b>62,5</b>	83,5
<b>65,0</b>	78,6
<b>67,5</b>	80,6
<b>70,0</b>	83,0
<b>72,5</b>	74,6
<b>75,0</b>	58,8
<b>77,5</b>	41,6
<b>80,0</b>	24,0
<b>82,5</b>	8,1
<b>85,0</b>	1,0
<b>87,5</b>	0,4
<b>90,0</b>	0,1

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Height:	500 mm		
Width:	280 mm		
Diameter:	0 mm		

### Zonal flux MAC Aura Raven XIP - 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	1992321,0	1992321,0	1992321,0	0,0	0,00	0,00	0,00
0,2	1988779,0	1988779,0	1988779,0	76,2	76,20	0,29	0,29
0,4	1980349,0	1980349,0	1980349,0	227,9	304,10	0,88	1,17
0,6	1975064,0	1975064,0	1975064,0	378,5	682,62	1,46	2,63
0,8	1959928,0	1959928,0	1959928,0	527,2	1209,81	2,03	4,66
1,0	1933219,0	1933219,0	1933219,0	670,6	1880,40	2,58	7,25
1,2	1914061,0	1914061,0	1914061,0	809,9	2690,35	3,12	10,37
1,4	1857152,0	1857152,0	1857152,0	938,3	3628,60	3,62	13,98
1,6	1828592,0	1828592,0	1828592,0	1058,0	4686,64	4,08	18,06
1,8	1734702,0	1734702,0	1734702,0	1159,2	5845,87	4,47	22,53
2,0	1691399,0	1691399,0	1691399,0	1245,7	7091,56	4,80	27,33
2,2	1555035,0	1555035,0	1555035,0	1304,6	8396,12	5,03	32,36
2,4	1497350,0	1497350,0	1497350,0	1343,3	9739,45	5,18	37,53
2,6	1378401,0	1378401,0	1378401,0	1375,6	11115,04	5,30	42,83
2,8	1268077,0	1268077,0	1268077,0	1367,1	12482,16	5,27	48,10
3,0	1137358,0	1137358,0	1137358,0	1334,6	13816,72	5,14	53,24
3,2	1020424,0	1020424,0	1020424,0	1279,7	15096,38	4,93	58,18
3,4	898695,2	898695,2	898695,2	1211,5	16307,84	4,67	62,84
3,6	718487,7	718487,7	718487,7	1082,7	17390,50	4,17	67,02
3,8	658925,8	658925,8	658925,8	974,8	18365,26	3,76	70,77
4,0	500415,1	500415,1	500415,1	864,7	19229,98	3,33	74,11
4,2	451283,1	451283,1	451283,1	746,2	19976,16	2,88	76,98
4,4	350232,6	350232,6	350232,6	659,0	20635,20	2,54	79,52
4,6	281165,7	281165,7	281165,7	543,3	21178,45	2,09	81,61
4,8	209203,6	209203,6	209203,6	440,6	21619,08	1,70	83,31
5,0	161384,7	161384,7	161384,7	347,1	21966,21	1,34	84,65
7,5	7839,8	7839,8	7839,8	2525,2	24491,38	9,73	94,38
10,0	1683,1	1683,1	1683,1	198,6	24689,94	0,77	95,15
12,5	881,9	881,9	881,9	68,6	24758,53	0,26	95,41
15,0	597,8	597,8	597,8	48,2	24806,74	0,19	95,60
17,5	458,4	458,4	458,4	40,5	24847,25	0,16	95,75
20,0	387,1	387,1	387,1	37,2	24884,50	0,14	95,90
22,5	348,5	348,5	348,5	36,5	24921,04	0,14	96,04
25,0	333,7	333,7	333,7	37,7	24958,70	0,15	96,18
27,5	339,8	339,8	339,8	40,8	24999,53	0,16	96,34
30,0	367,2	367,2	367,2	46,6	25046,14	0,18	96,52
32,5	418,3	418,3	418,3	55,8	25101,99	0,22	96,73
35,0	478,8	478,8	478,8	68,3	25170,30	0,26	97,00
37,5	522,7	522,7	522,7	81,2	25251,47	0,31	97,31
40,0	522,9	522,9	522,9	89,7	25341,17	0,35	97,66
42,5	467,2	467,2	467,2	89,5	25430,66	0,34	98,00
45,0	404,9	404,9	404,9	82,7	25513,32	0,32	98,32
47,5	341,1	341,1	341,1	73,9	25587,20	0,28	98,60
50,0	265,3	265,3	265,3	62,5	25649,69	0,24	98,84
52,5	208,5	208,5	208,5	50,7	25700,35	0,20	99,04

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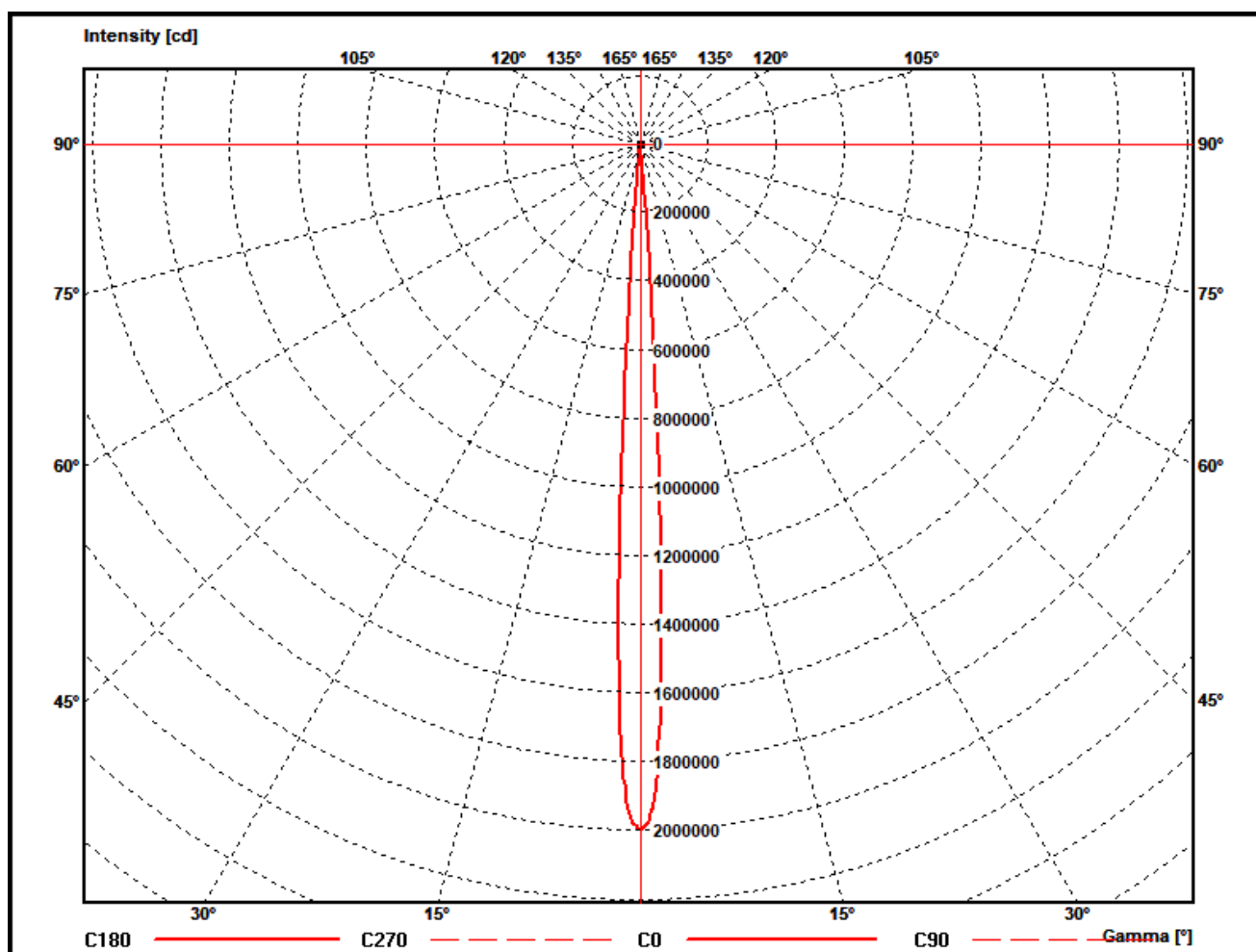
## Zonal flux MAC Aura Raven XIP - narrow beam

Gamma [°]	Imin [cd]	Imax [cd]	Imean [cd]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
55,0	161,9	161,9	161,9	41,0	25741,30	0,16	99,20
57,5	126,4	126,4	126,4	32,9	25774,16	0,13	99,32
60,0	99,6	99,6	99,6	26,5	25800,64	0,10	99,43
62,5	83,5	83,5	83,5	22,0	25822,64	0,08	99,51
65,0	78,6	78,6	78,6	19,9	25842,57	0,08	99,59
67,5	80,6	80,6	80,6	20,0	25862,54	0,08	99,66
70,0	83,0	83,0	83,0	20,9	25883,44	0,08	99,75
72,5	74,6	74,6	74,6	20,4	25903,89	0,08	99,82
75,0	58,8	58,8	58,8	17,5	25921,44	0,07	99,89
77,5	41,6	41,6	41,6	13,4	25934,81	0,05	99,94
80,0	24,0	24,0	24,0	8,8	25943,63	0,03	99,98
82,5	8,1	8,1	8,1	4,4	25947,99	0,02	99,99
85,0	1,0	1,0	1,0	1,2	25949,23	0,00	100,00
87,5	0,4	0,4	0,4	0,2	25949,42	0,00	100,00
90,0	0,1	0,1	0,1	0,1	25949,50	0,00	100,00

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Length:	510 mm		
Height:	500 mm		
Width:	280 mm		
Diameter:	0 mm		

### Polar diagram MAC Aura Raven XIP - narrow beam

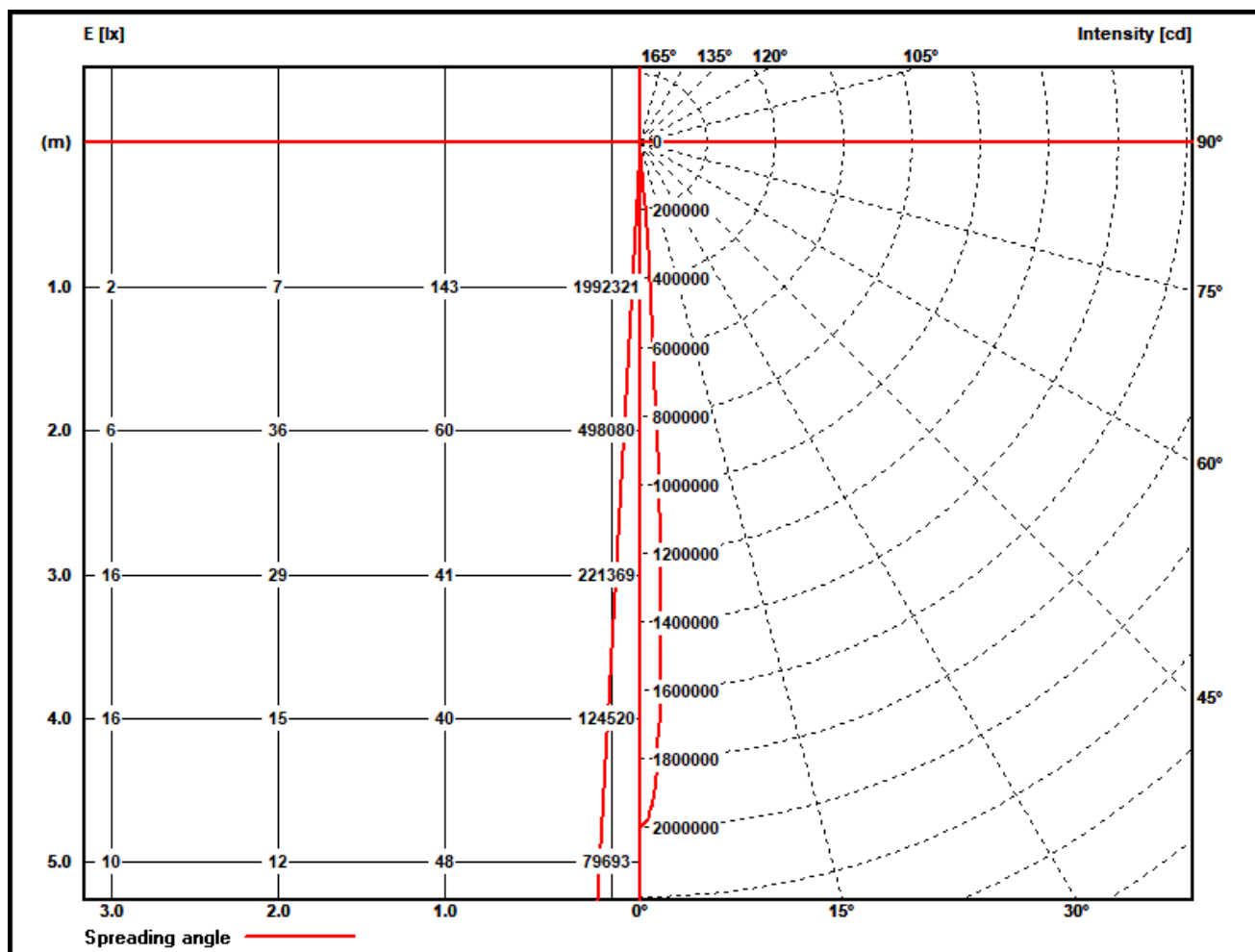




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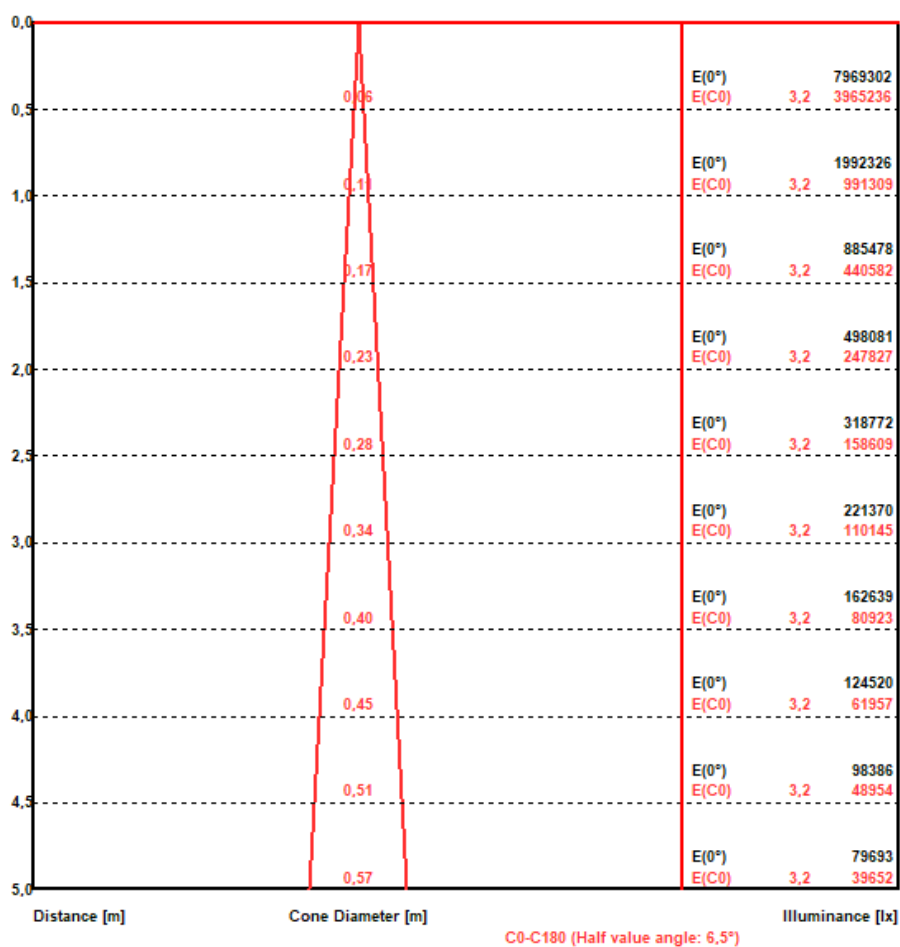
### Illuminance and Intensity diagram MAC Aura Raven XIP - narrow beam



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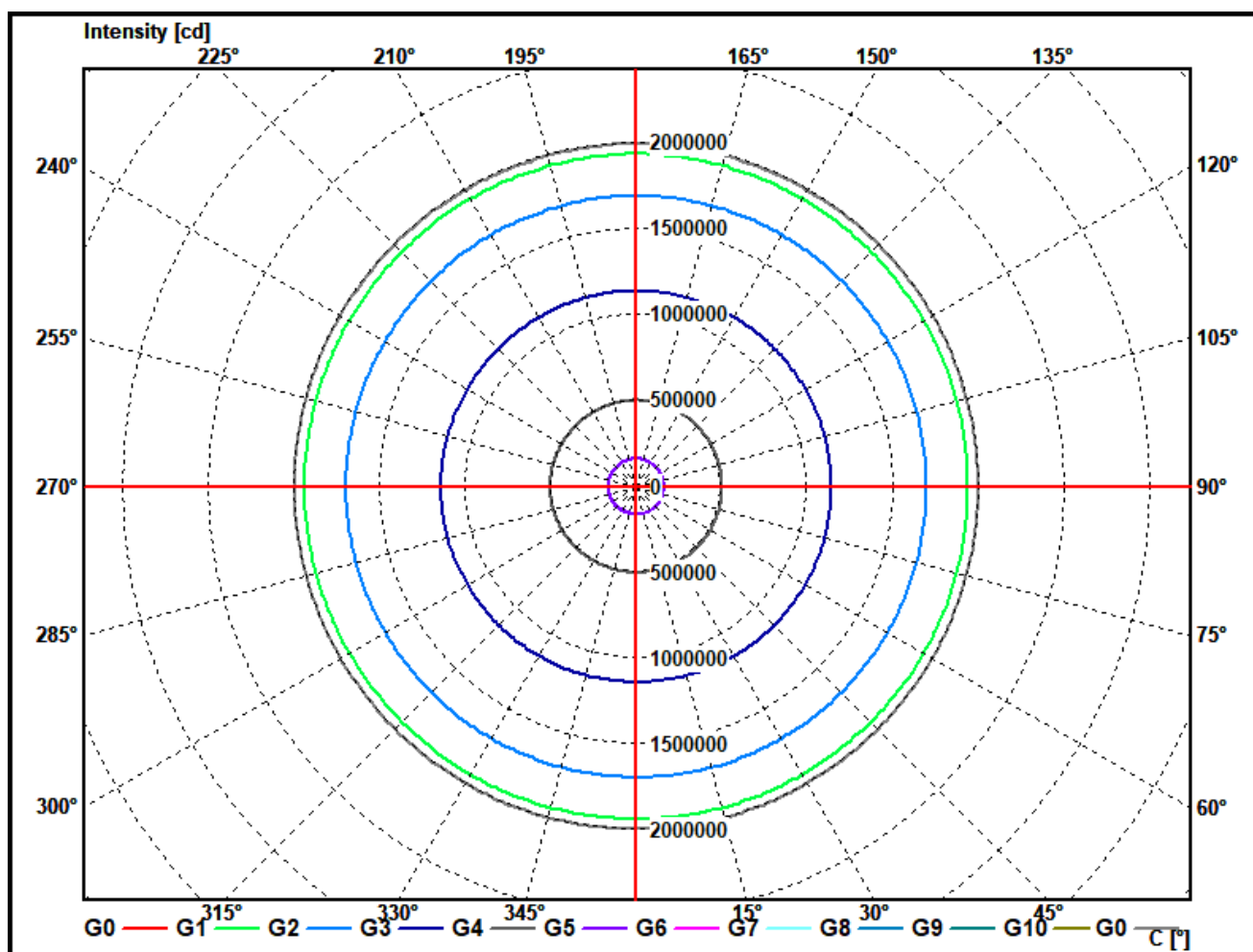
### Illuminance cone diagram MAC Aura Raven XIP - narrow beam



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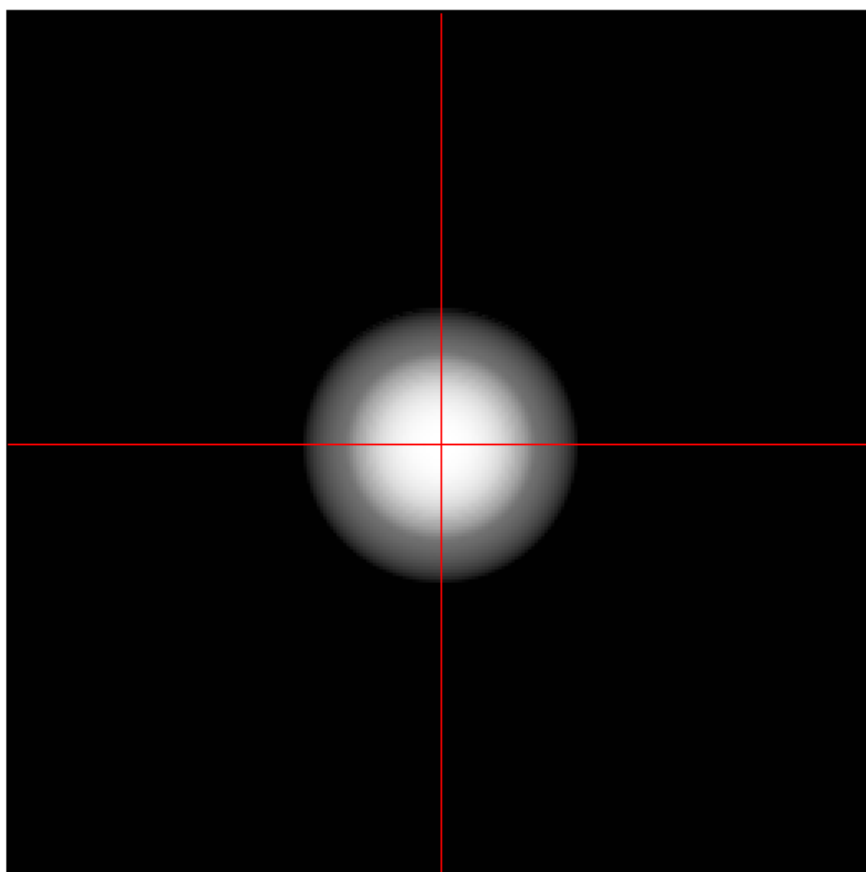
### Cone diagram MAC Aura Raven XIP - narrow beam



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### Isoline diagram MAC Aura Raven XIP - narrow beam



Luminaire mounting height above ground: 20 m  
Luminaire rotation angle: 0 °

testsample:

dimensions [L x W x H]: 510 x 280 x 500 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