

The Philips logo is displayed in a white rounded rectangle on a teal background. The background of the entire page is a photograph of a high-end retail store with chandeliers, tables, and various merchandise.

MASTER
LEDspot LV

AR111



Technical Application Guide

Philips MASTER LEDspot LV AR111

With its new Perfect-fit design, the MASTER LEDspot LV AR111 now works with most luminaires in the market as a true retrofit.

The lamp creates a brilliant visual effect for retail and hospitality applications like shops, showrooms and galleries. The high quality light brings out the true colors in merchandise, including reds. MASTER LEDspot LV AR111 is an ideal retrofit solution for spot, track and general lighting applications in the hospitality and retail industry. The robustly designed MASTER LEDspot LV AR111 offers a well defined beam with a multitude of beam angles to suit various applications. This replacement lamp on 12V provides the light intensity and quality produced by traditional halogen lamps of 50W, 75W or 100W.



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up to
80%
energy
saving



Design highlights

- Up to 80% energy saving compared to standard halogen spots
- Long lifetime of 40,000 hours for 11/15W lamp and 25,000 hours for 20W lamp (F50, L70)
- Retrofits into a vast majority of G53 based fixtures
- 12, 24 & 40 degrees beam angle for a clearly defined beam spread
- CCT: 2700K, 3000K, 4000K
- Compatible with a broad selection of transformers
- No UV and Cool Beam (no IR), making it suitable for illuminating heat-sensitive objects (food, organic materials, paintings, etc.)
- Environmental friendly (free of mercury and other hazardous materials)
- RoHS compliant

Application areas

MASTER LEDspot LV AR111 is an ideal retrofit solution for spot track, and general lighting in hospitality and retail applications. The lamp is particularly suitable for creating accent lighting for shops, restaurants, hotels, galleries, exhibitions, and museums.

Hospitality: lobby, reception area, restaurants, bars, cafes

Retail: exhibitions, shops

Museum: display area for art work

Application notes

- Operating temperature range is between -20 °C and 45 °C ambient
- Only suitable for use in dry or damp locations and most open fixtures with G53 lamp-holders that offer sufficient space (10mm free air space)
- Not intended for use with emergency light fixtures or exit lights
- For use in fixtures that can structurally support the weight of a lamp

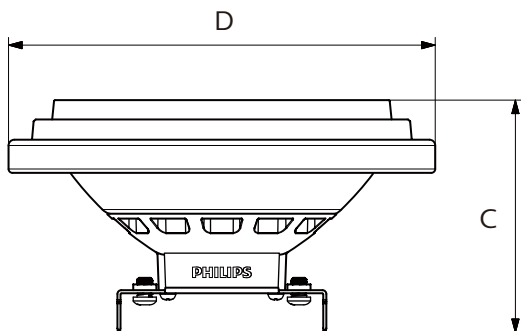
Product features

Technical Specifications

Product type	Voltage (VAC)	Lamp Wattage (W)	Replaced Wattage (W)	Cap	Total Lumen (lm)	Beam Angle (°)	CCT (K)	MBCP (cd)	Lifetime (Hrs)	CRI	SDCM	DIM
MAS LEDspotLV D 11-50W 927 AR111 24D	12	11	50	G53	620	24	2700	2900	40000	90	3	Yes
MAS LEDspotLV D 11-50W 927 AR111 40D	12	11	50	G53	620	40	2700	1100	40000	90	3	Yes
MAS LEDspotLV D 15-75W 927 AR111 24D	12	15	75	G53	830	24	2700	3900	40000	90	3	Yes
MAS LEDspotLV D 15-75W 930 AR111 24D	12	15	75	G53	840	24	3000	4000	40000	90	3	Yes
MAS LEDspotLV D 15-75W 927 AR111 40D	12	15	75	G53	830	40	2700	1400	40000	90	3	Yes
MAS LEDspotLV D 15-75W 930 AR111 40D	12	15	75	G53	840	40	3000	1450	40000	90	3	Yes
MAS LEDspotLV D 20-100W 830 AR111 12D	12	20	100	G53	1350	12	3000	10000	25000	80	3	Yes
MAS LEDspotLV D 20-100W 840 AR111 12D	12	20	100	G53	1400	12	4000	11000	25000	80	3	Yes
MAS LEDspotLV D 20-100W 830 AR111 24D	12	20	100	G53	1350	24	3000	6000	25000	80	3	Yes
MAS LEDspotLV D 20-100W 840 AR111 24D	12	20	100	G53	1400	24	4000	6100	25000	80	3	Yes
MAS LEDspotLV D 20-100W 830 AR111 40D	12	20	100	G53	1350	40	3000	2350	25000	80	3	Yes
MAS LEDspotLV D 20-100W 840 AR111 40D	12	20	100	G53	1400	40	4000	2400	25000	80	3	Yes

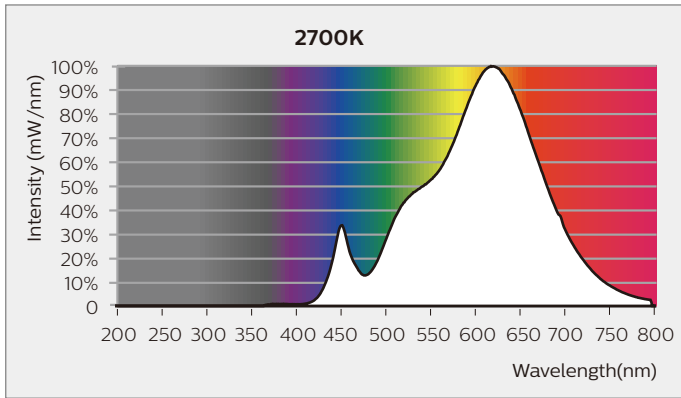
Fixture Compatibility

Type	C max. Overall Length (mm)	D max. Diameter (mm)	max. Weight (gram)
MAS LEDspotLV D 11-50W AR111	62.3	110.7	154
MAS LEDspotLV D 15-75W AR111	62.3	110.7	154
MAS LEDspotLV D 20-100W AR111	62.3	110.7	172

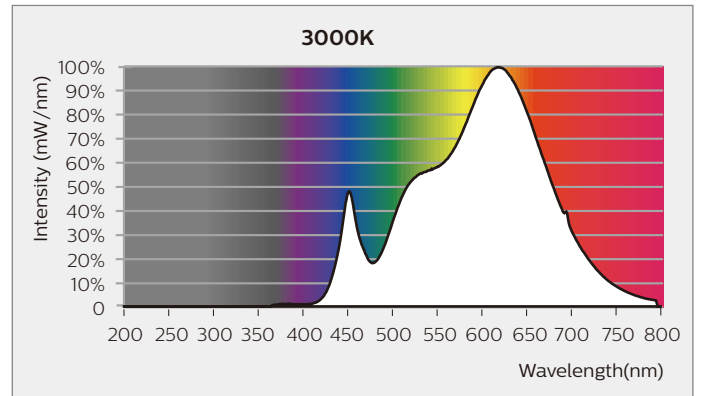
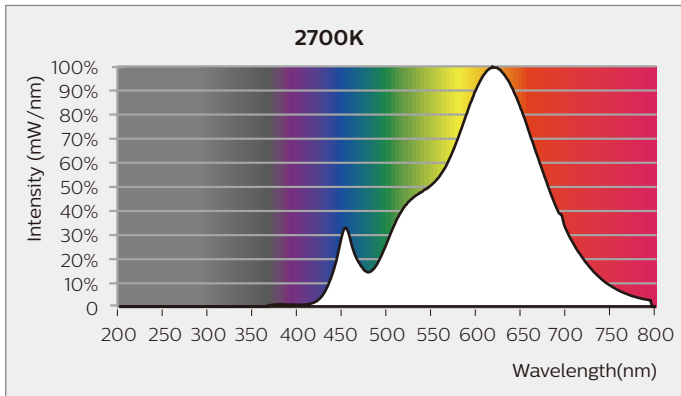


Spectral Power Distribution

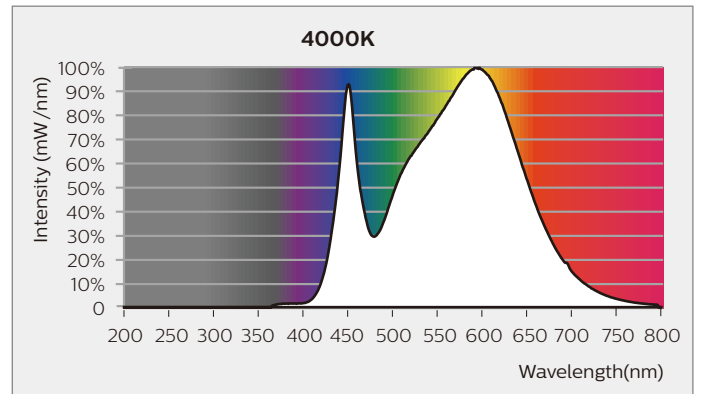
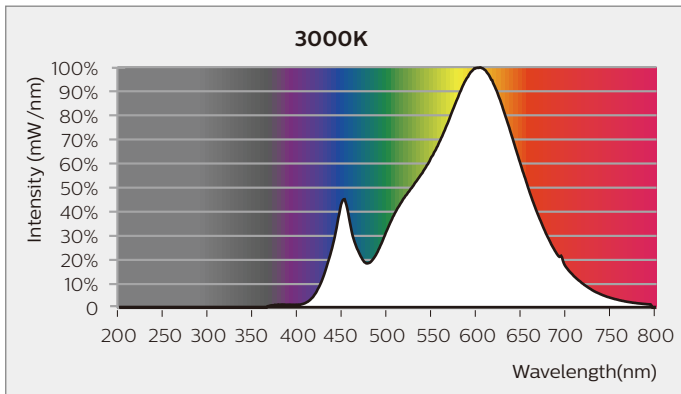
MAS LEDspotLV 11-50W AR111



MAS LEDspotLV 15-75W AR111



MAS LEDspotLV 20-100W AR111



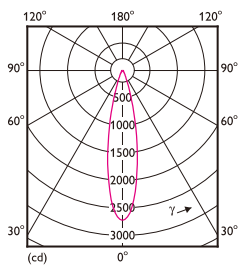
Photometric Diagrams

MAS LEDspotLV D 11-50W 2700K AR111 24D

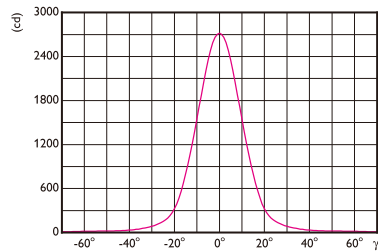
620 lm

Light output ratio	1.00	VBA	$2 \times 25^\circ$	I_{max}	2719 cd
Service upward	0.00	BS ($\frac{1}{2} I_{max}$)	$2 \times 12^\circ$	K5	
Service downward	1.00	VBA ($\frac{1}{2} E_0$)	$2 \times 11^\circ$		

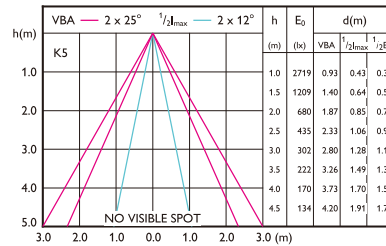
Polar intensity diagram



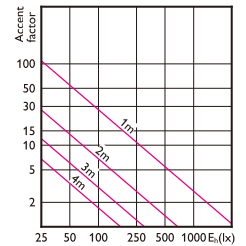
Cartesian intensity diagram



Beam diagram



Visual impact diagram

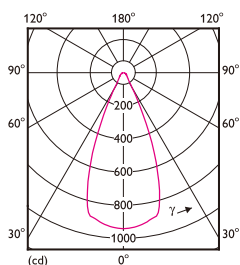


MAS LEDspotLV D 11-50W 2700K AR111 40D

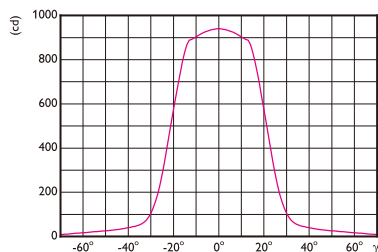
620 lm

Light output ratio	1.00	VBA	$2 \times 40^\circ$	I_{max}	941 cd
Service upward	0.00	BS ($\frac{1}{2} I_{max}$)	$2 \times 22^\circ$	K5	
Service downward	1.00	VBA ($\frac{1}{2} E_0$)	$2 \times 21^\circ$		

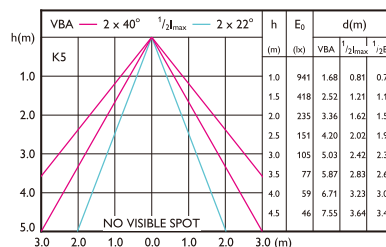
Polar intensity diagram



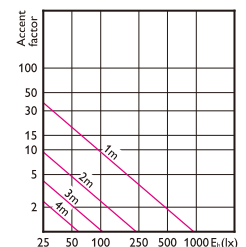
Cartesian intensity diagram



Beam diagram



Visual impact diagram

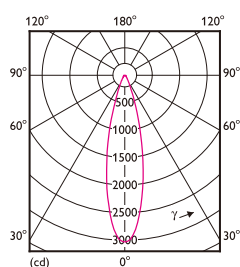


MAS LEDspotLV D 15-75W 2700K AR111 24D

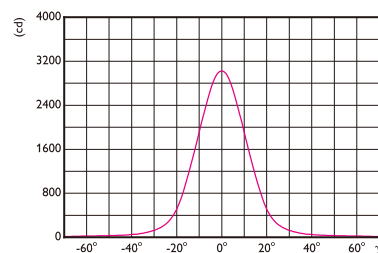
830 lm

Light output ratio	1.00	VBA	$2 \times 25^\circ$	I_{max}	3026 cd
Service upward	0.00	BS ($\frac{1}{2} I_{max}$)	$2 \times 13^\circ$	K5	
Service downward	1.00	VBA ($\frac{1}{2} E_0$)	$2 \times 12^\circ$		

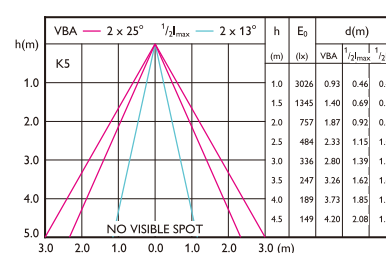
Polar intensity diagram



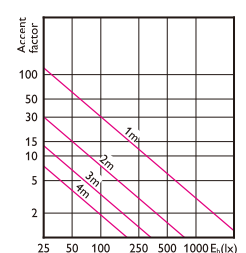
Cartesian intensity diagram



Beam diagram



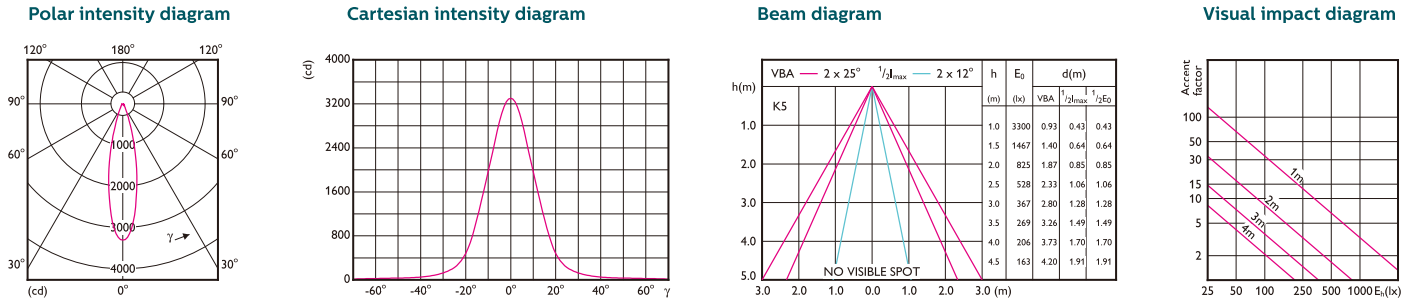
Visual impact diagram



MAS LEDspotLV D 15-75W 3000K AR111 24D

840 lm

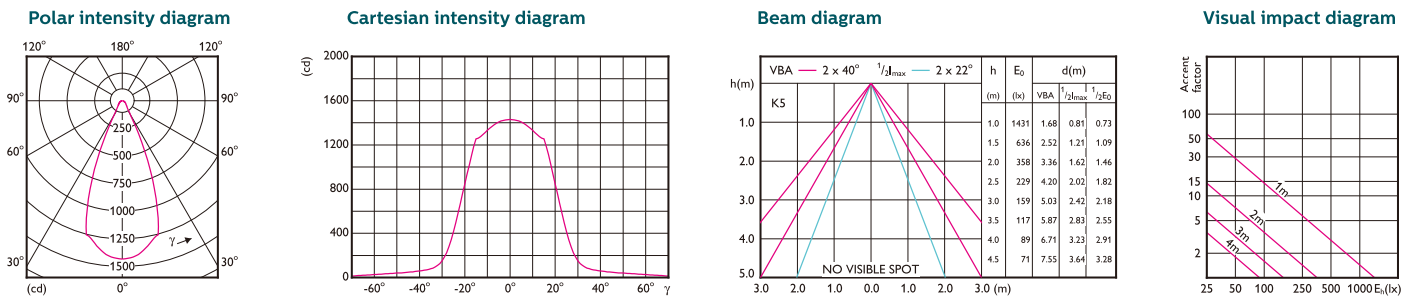
Light output ratio	1.00	VBA	2 x 25°	lmax	3300 cd
Service upward	0.00	BS (1/2 lmax)	2 x 12°	K5	
Service downward	1.00	VBA (1/2 E0)	2 x 12°		



MAS LEDspotLV D 15-75W 2700K AR111 40D

830 lm

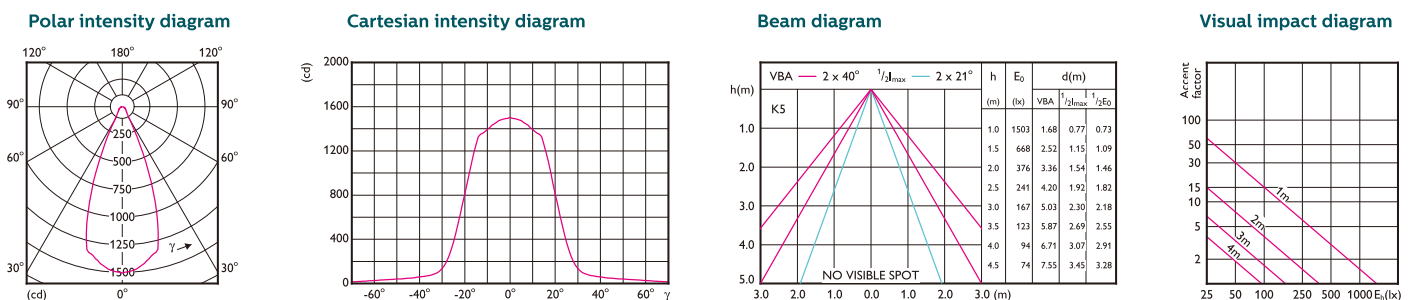
Light output ratio	1.00	VBA	2 x 40°	lmax	1431 cd
Service upward	0.00	BS (1/2 lmax)	2 x 22°	K5	
Service downward	1.00	VBA (1/2 E0)	2 x 20°		



MAS LEDspotLV D 15-75W 3000K AR111 40D

840 lm

Light output ratio	1.00	VBA	2 x 40°	lmax	1503 cd
Service upward	0.00	BS (1/2 lmax)	2 x 21°	K5	
Service downward	1.00	VBA (1/2 E0)	2 x 20°		

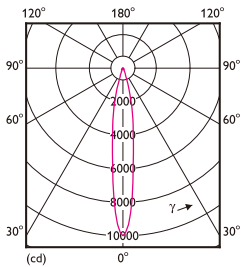


MAS LEDspotLV D 20-100W 3000K AR111 12D

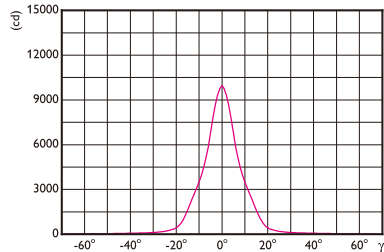
1350 lm

Light output ratio	1.00	VBA	$2 \times 15^\circ$	Imax	9975 cd
Service upward	0.00	BS ($1/2 I_{max}$)	$2 \times 8^\circ$	K5	
Service downward	1.00	VBA ($1/2 E_0$)	$2 \times 8^\circ$		

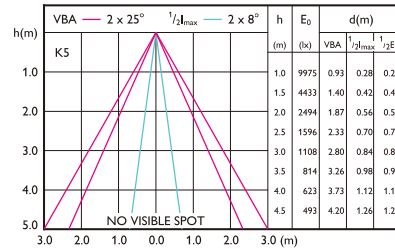
Polar intensity diagram



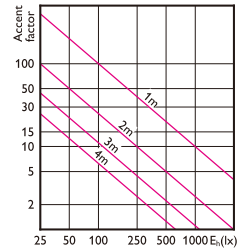
Cartesian intensity diagram



Beam diagram



Visual impact diagram

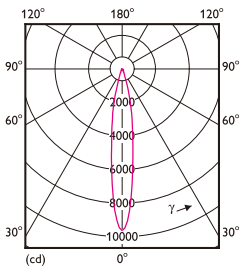


MAS LEDspotLV D 20-100W 4000K AR111 12D

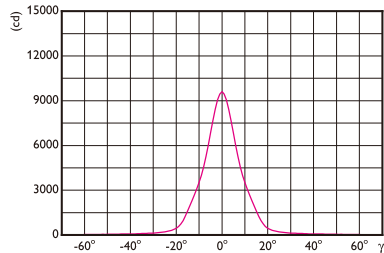
1400 lm

Light output ratio	1.00	VBA	$2 \times 25^\circ$	Imax	9614 cd
Service upward	0.00	BS ($1/2 I_{max}$)	$2 \times 8^\circ$	K5	
Service downward	1.00	VBA ($1/2 E_0$)	$2 \times 8^\circ$		

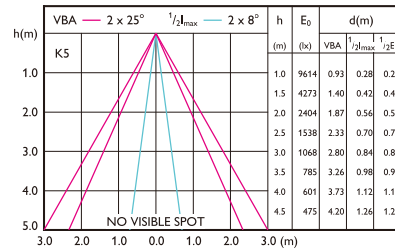
Polar intensity diagram



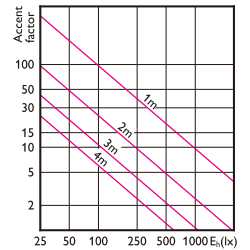
Cartesian intensity diagram



Beam diagram



Visual impact diagram

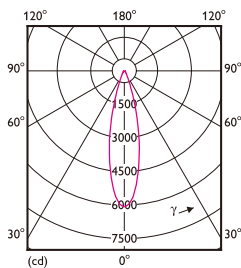


MAS LEDspotLV D 20-100W 3000K AR111 24D

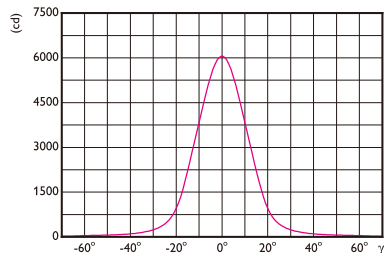
1350 lm

Light output ratio	1.00	VBA	$2 \times 25^\circ$	Imax	6069 cd
Service upward	0.00	BS ($1/2 I_{max}$)	$2 \times 13^\circ$	K5	
Service downward	1.00	VBA ($1/2 E_0$)	$2 \times 12^\circ$		

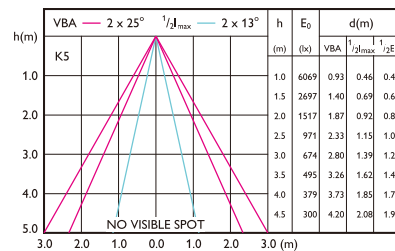
Polar intensity diagram



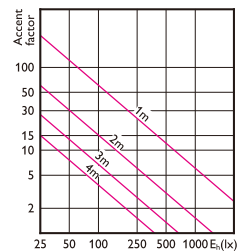
Cartesian intensity diagram



Beam diagram



Visual impact diagram

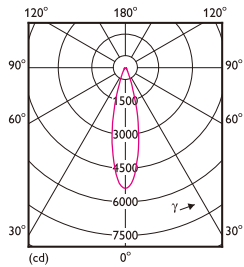


MAS LEDspotLV D 20-100W 4000K AR111 24D

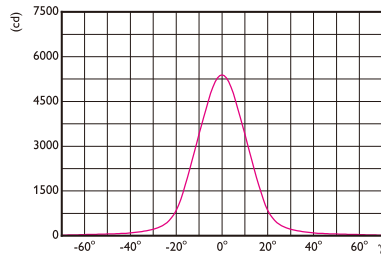
1400 lm

Light output ratio	1.00	VBA	$2 \times 25^\circ$	Imax	5388 cd
Service upward	0.00	BS ($1/2 I_{max}$)	$2 \times 13^\circ$	K5	
Service downward	1.00	VBA ($1/2 E_0$)	$2 \times 12^\circ$		

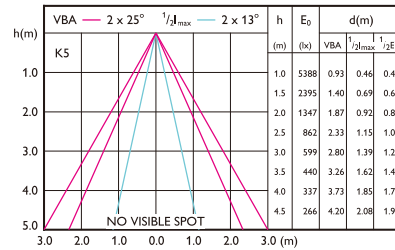
Polar intensity diagram



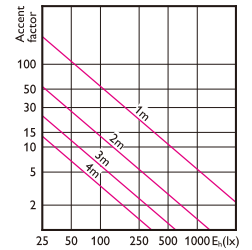
Cartesian intensity diagram



Beam diagram



Visual impact diagram

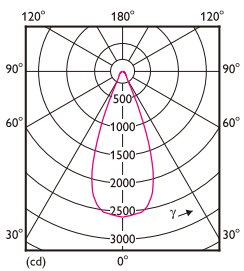


MAS LEDspotLV D 20-100W 3000K AR111 40D

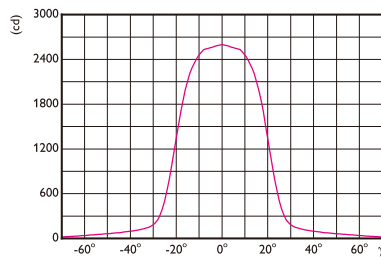
1350 lm

Light output ratio	1.00	VBA	$2 \times 40^\circ$	Imax	2599 cd
Service upward	0.00	BS ($1/2 I_{max}$)	$2 \times 21^\circ$	K5	
Service downward	1.00	VBA ($1/2 E_0$)	$2 \times 19^\circ$		

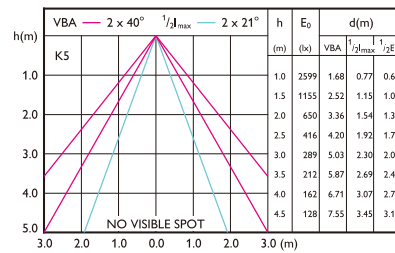
Polar intensity diagram



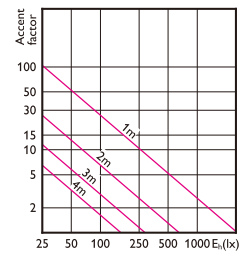
Cartesian intensity diagram



Beam diagram



Visual impact diagram

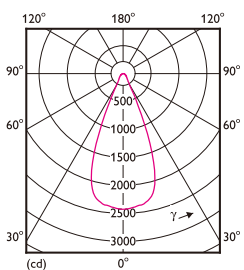


MAS LEDspotLV D 20-100W 4000K AR111 40D

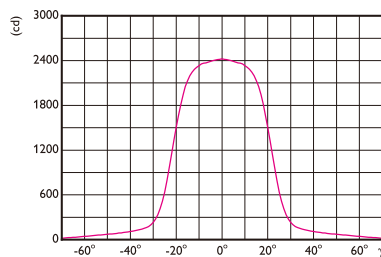
1400 lm

Light output ratio	1.00	VBA	$2 \times 40^\circ$	Imax	2423 cd
Service upward	0.00	BS ($1/2 I_{max}$)	$2 \times 22^\circ$	K5	
Service downward	1.00	VBA ($1/2 E_0$)	$2 \times 21^\circ$		

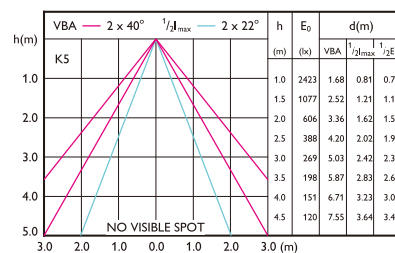
Polar intensity diagram



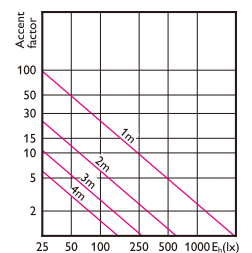
Cartesian intensity diagram



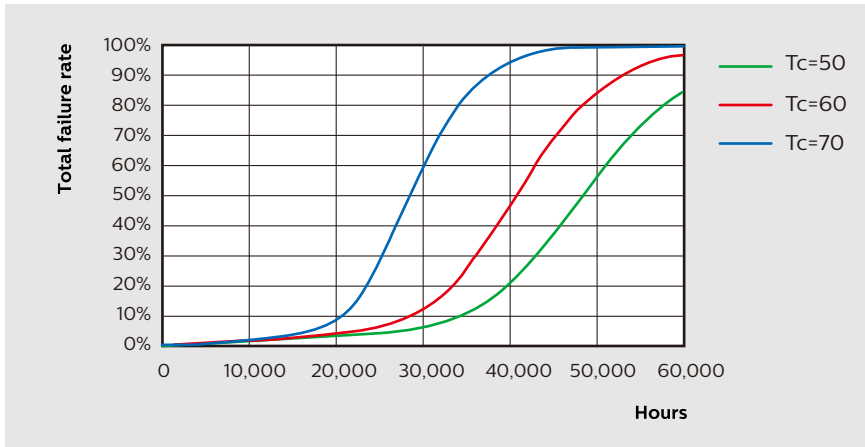
Beam diagram



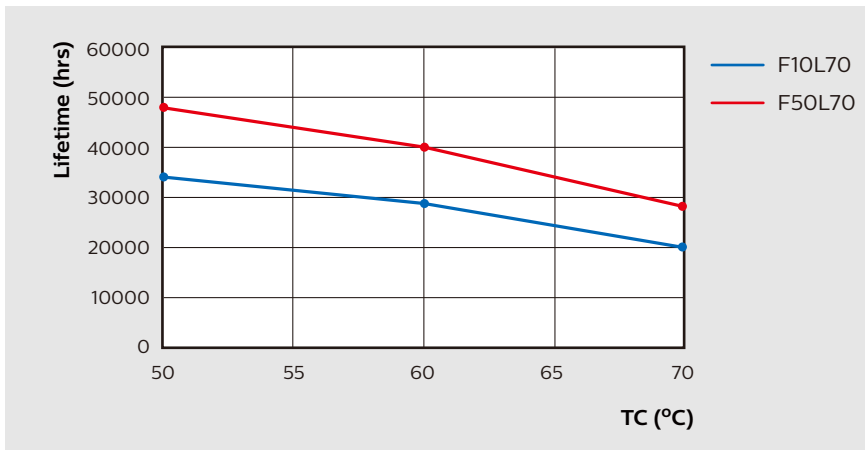
Visual impact diagram



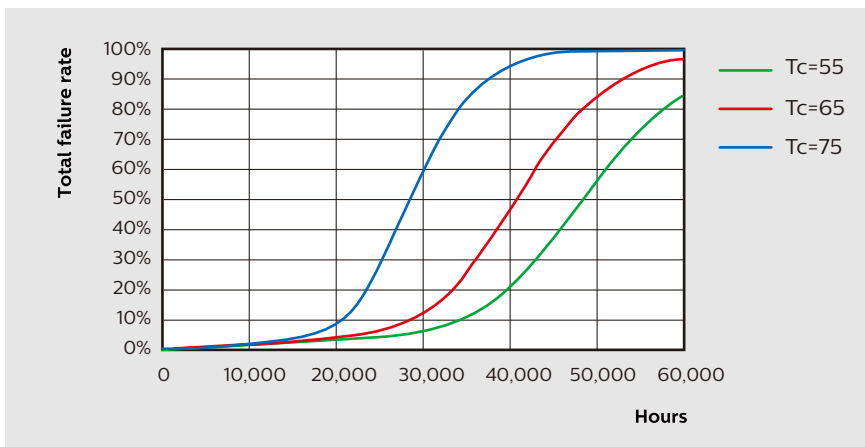
Failure Rate Curve of MAS LEDspotLV 11-50W AR111

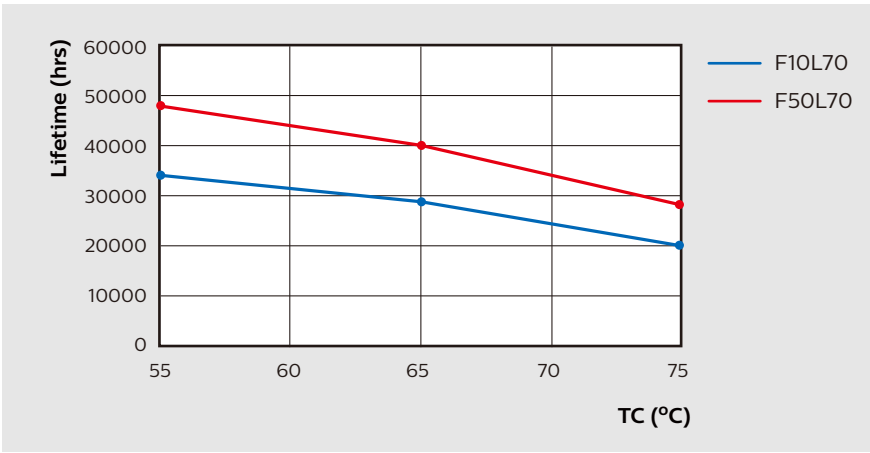


- Philips MASTER LEDspot LV AR111 family has a lifetime of 40,000 hours (11W, 15W); 25,000 hours (20W), defined as the number of hours when 50% of a large group of identical lamps becomes below 70% of its initial lumen. (F50, L70)
- Lifetime estimation based on the application environment condition at room temperature (25°C @ 10mm free air), base down burning position and at rated voltage.

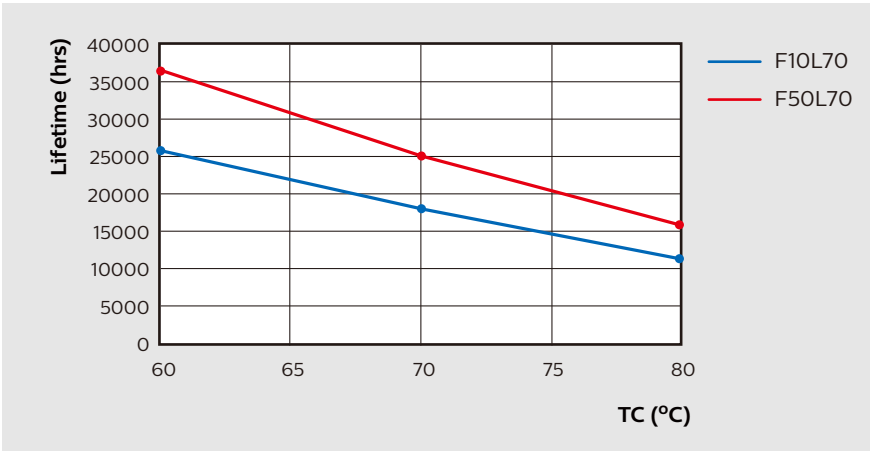
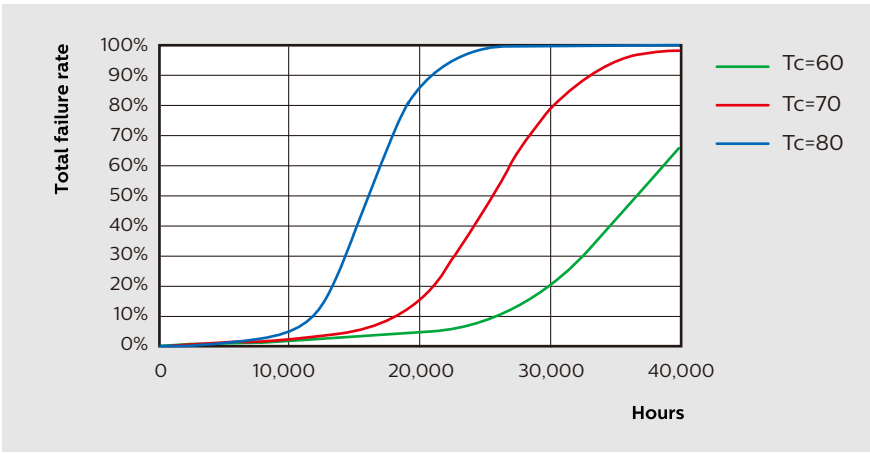


Failure Rate Curve of MAS LEDspotLV 15-75W AR111



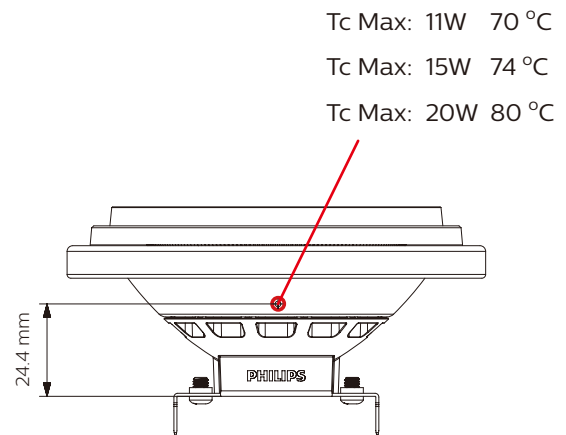
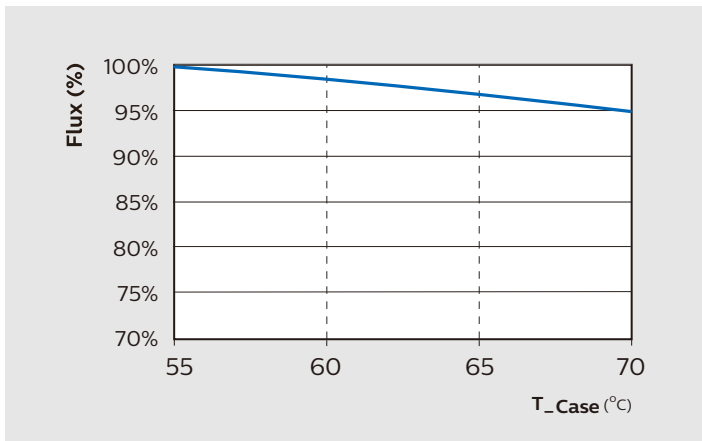


Failure Rate Curve of MAS LEDspotLV 20-100W AR111

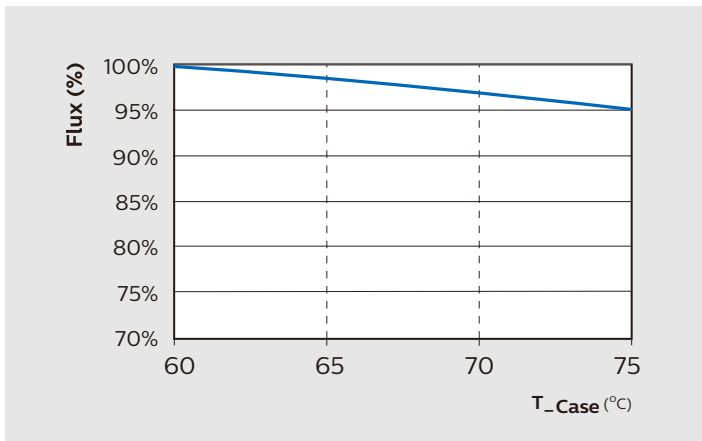


Temperature

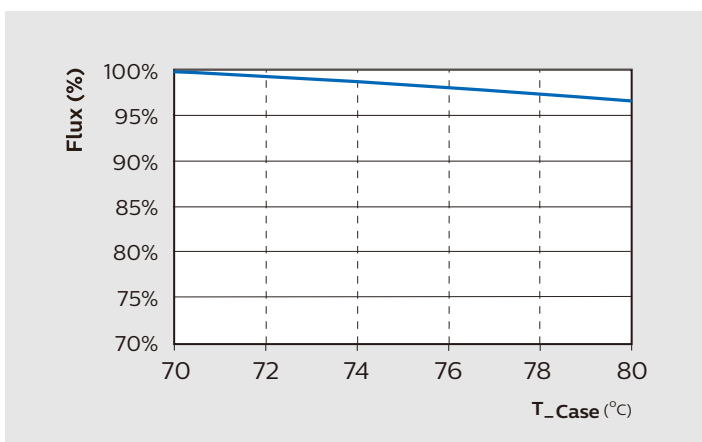
MASTER LEDspotLV AR111 11W



MASTER LEDspotLV AR111 15W



MASTER LEDspotLV AR111 20W



Low Voltage LED Lamps Loading Rule

To determine the maximum number of AR111 LED lamps that can be connected to a standard halogen transformer, simply divide 20% of rated power of the transformer by LED lamp wattage (rounded down). For example, a 150W Halogen transformer will hold 11W LED AR111 up to 2 lamps ($150 \times 20\% / 11 = 2.7$).



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