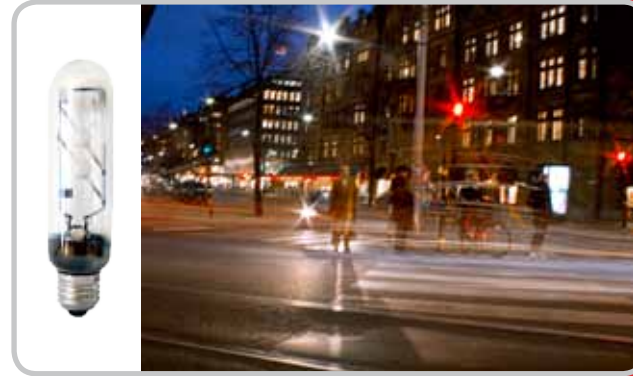


Aura develops and supplies Long Life light sources and solutions with a clear environmental and sustainable focus. With a lifetime that is three times longer than standard products, maintenance costs and environmental impact are cut by two thirds. Our energy-saving lighting solutions can lower your energy consumption by up to 80 percent, depending on your existing equipment. Aura helps you to reduce your costs and carbon footprint.



# Aura Crystal Long Life

## World's first Long Life metal halide lamp



Aura Light has developed the first real Long Life metal halide lamp. It more than doubles the lifetime of standard products and has an average lifetime of 36,000 hours in any burning position.

The lamp is designed to be applied in city centers, pedestrian areas and street lighting as well as other applications where high quality white light is important. Aura Crystal Long Life gives you crystal clear white light while reducing your maintenance costs by at least 50%.

### Benefits

- Double burners give it the longest lifetime on the market - six years, or 25,000 hours (10% mortality) and 36,000 hours (average).
- Reduced cost of ownership.
- Outstanding lumen maintenance, 80% at 17,000 hours.
- Quicker re-strike after net power breakage.
- Direct retrofit to HPS in existing luminaires for upgrade from yellow to white light.
- Excellent colour rendering and warm white colour temperature.

**City centers**

**Pedestrian areas**

**Residential lighting**

**Street lighting**

**Industrial lighting**

**Car parks**

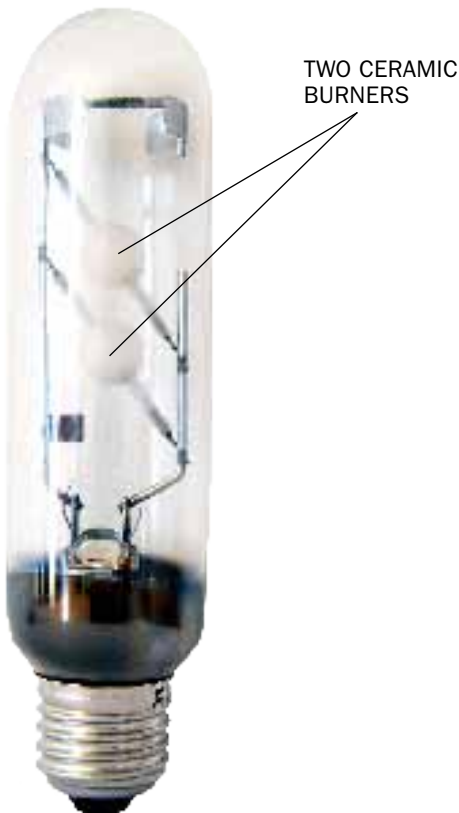
## Overview

To reach the outstanding lifetime extension of the Aura Crystal Long Life lamp Aura has developed the first metal halide lamp with two ceramic burners.

The two burners have been placed diagonally in the lamp and are positioned exactly and fixed in a stable holding system. This holding system provides a robust construction which resists vibrations and leads to improved reliability. The newly developed technical solution to reach an extended lifetime has resulted in an application for a patent.

The one of the two burners that needs the lowest voltage level is more prone to start. Over time of use the ignition voltage for the first burner will increase. At a certain point it will be higher than the ignition voltage of the second burner. Then the second burner will start working. This way the two burners will alternate during the life time of the lamp.

Standard single burner lamps need to cool down for five to 15 minutes before the lamp can be restarted. This is due to the high operating pressures inside the arc tube when the lamp is burning. In a double burner lamp like the Aura Crystal Long Life, the inactive burner is also heated up during operation of the lamp but the pressure inside is much lower compared to the active burner. Therefore after a short net power breakage the inactive burner will ignite in less than five minutes. This means that the light will return much faster with Aura Crystal Long Life, than with comparable single burner lamps.

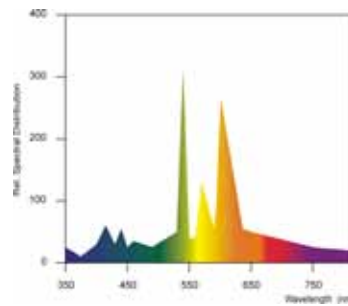


## Technical information

Aura metal halide Long Life lamps are designed for operation in existing installation infrastructures. They comply with the relevant standard IEC 61167 and the geometric data is comparable. All Aura Crystal Long Life lamps are made with very high quality components and operate on both electronic and electromagnetic ballasts. The Aura Crystal Long Life lamps can be operated at any burning position.

Aura Crystal Long Life lamps are available with a colour temperature of 3000 K. The high colour rendering index (CRI) of  $Ra \geq 80$  improves the ability of drivers to recognise shapes and colours, especially in peripheral vision. The white light also gives a high sense of security for pedestrians.

SPECTRAL DISTRIBUTION OF AURA CRYSTAL LONG LIFE



The outer bulb of the Aura Crystal Long Life is made of a special hard glass. This protects the components inside from damage and secures the functionality over the long lifetime. The hard glass is lead free and filters out UV radiation. Metal halide lamps must be operated in fully enclosed fixtures. In the rare event of the arc-tube shattering, the luminaire must be able to retain all fragments of hot ceramic and glass.

Aura Crystal Long Life uses spherical ceramic arc-tubes. The round form and constant wall thickness makes it possible to further increase the wall temperature which improves luminous efficacy and colour rendering. With spherical ceramic arc tubes you also face less risk of ceramic corrosion and the failures that might result.

A cold metal halide lamp requires a run-up time to produce its full light capacity as the temperature and pressure in the inner arc chamber require time to reach full operating levels. Starting the initial argon arc sometimes takes a few seconds, and the warm-up period can be as long as five minutes (depending upon lamp type). During this time the lamp exhibits different colors as the various metal halides vaporize in the arc chamber. Run-up time for the Aura Crystal Long Life lamp is four minutes.

All Aura Long Life lamps comply with the requirements of the Eco-Design Directive ErP and the RoHS Directive. Like all other metal halide lamps, they have to be collected and disposed at end-of-life according to the EC WEEE directive.

## Lifetime

The rated average life of Aura Crystal Long Life is 36,000 hours, based on a 12 h switching cycle (11 hours on, 1 hour off). For a 12 h switching cycle and maximum failure rate of 10%, the lifetime is 25,000 hours. Maximum lumen depreciation is then 22%.

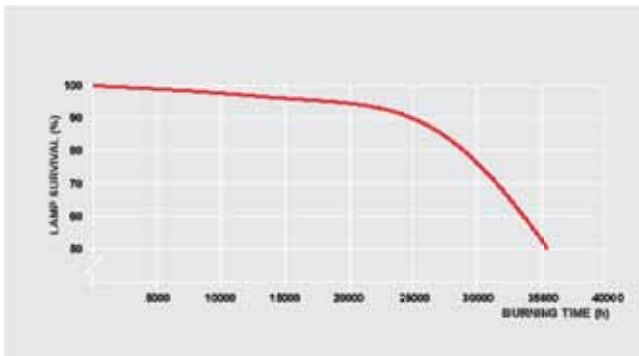
The long lifetime and the extremely low failure rate is possible thanks to the two burner technology. This extends the necessary maintenance intervals to a long time of stable operation.

In installations where lamp replacement is difficult and cost intensive, the long burning time of Aura Long Life lamps enables more cost effective lighting maintenance and improved long term planning for group replacement. Group replacement of lamps provides an optimal control of the operational costs and a uniform level of light.

For economical and environmental reasons Aura Light recommends group replacement of Long Life lamps.

### LIFETIME OF AURA CRYSTAL LONG LIFE

- based on 12h-switching cycle (11h on, 1h off).
- operation by electronic or magnetic ballast and external ignitor.
- 70W, tubular, transparent.



## Long Life guarantee

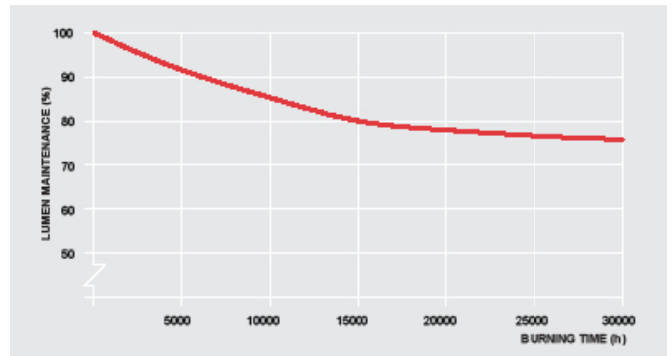
The Aura Long Life metal halide lamps are developed and manufactured in accordance with the IEC/EN 61167 standard. A strict and continuous quality control ensures high intensity discharge lamps of top quality.

Aura guarantees the published lifetime data of the Aura Crystal Long Life lamps for installations complying with the relevant standards.

LIFETIME	SWITCHING CYCLE (11 h on, 1 h off)	
	HOURS OF OPERATION	FAILURE RATE
	8,000 h	2%
	10,000 h	2,5%
	12,000 h	3%
	16,000 h	4%
	20,000 h	6%
	25,000 h	10%
	36,000 h	50% (Average Life)

### LUMEN MAINTENANCE OF AURA CRYSTAL LONG LIFE

- based on 12h-switching cycle (11h on, 1h off).
- operation by electronic or magnetic ballast and external ignitor.
- 70W, tubular, transparent.



PROGRAMME	ARTICLE NO.	TYPE	COLOUR TEMP. (K)	LUMINOUS FLUX (lm)	LUMINOUS EFFICACY (lm/W)	Ø (mm)	LENGTH MAX (mm)	LIGHT CENTER LENGTH (mm)	CAP	UNITS/PACK (pcs)
	<b>Aura Crystal Long Life, Tubular transparent</b>									
	510123	CT 70W	3000	6500	93	38	156	97-107	E27	12
	510125	CT 100W	3000	15000	100	46	211	127-137	E40	12

Range will be expanded during 2012. Contact your Aura sales representative for more details.

