

Data Sheet

Discharge Lamps

MBI-T/U

Metal Halide lamp

ARCSTREAM 3000

150W

Description

Arcstream consists of a high pressure metal halide discharge operating in a quartz bulb. With an electrode spacing of only 6mm the arc is extremely compact.

An outer quartz envelope gives thermal and physical protection and the lamp has a ceramic bi-pin cap.

Features

Small bright source size enables compact fittings with accurate optical control to be designed.

Single bi-pin cap for easy insertion and replacement.

High efficiency — low operating costs

Excellent colour rendering

Colour appearance blends with Lightstream and fluorescent lamps.

Long life — reduced maintenance costs

Good colour stability through life.

Applications

The features above make Arcstream suitable for a wide range of applications where the quality of lighting is important.

It is particularly suitable where precise optical control of the light source is required.

e.g. Display spotlights

Uplights

Downlights

Floodlights

Physical Data

Dimensions — see drawing

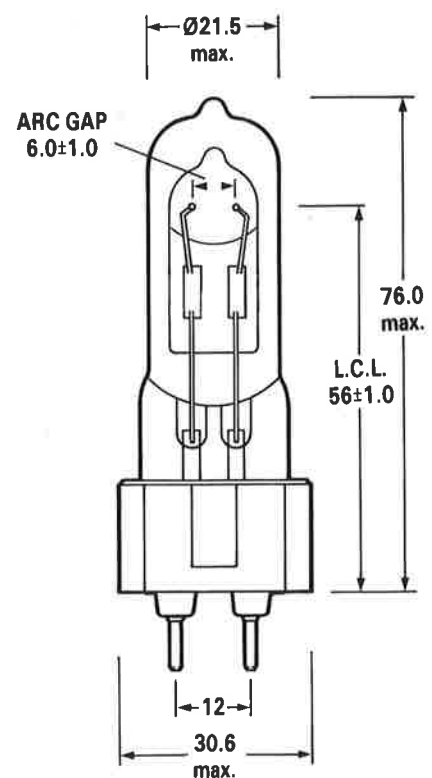
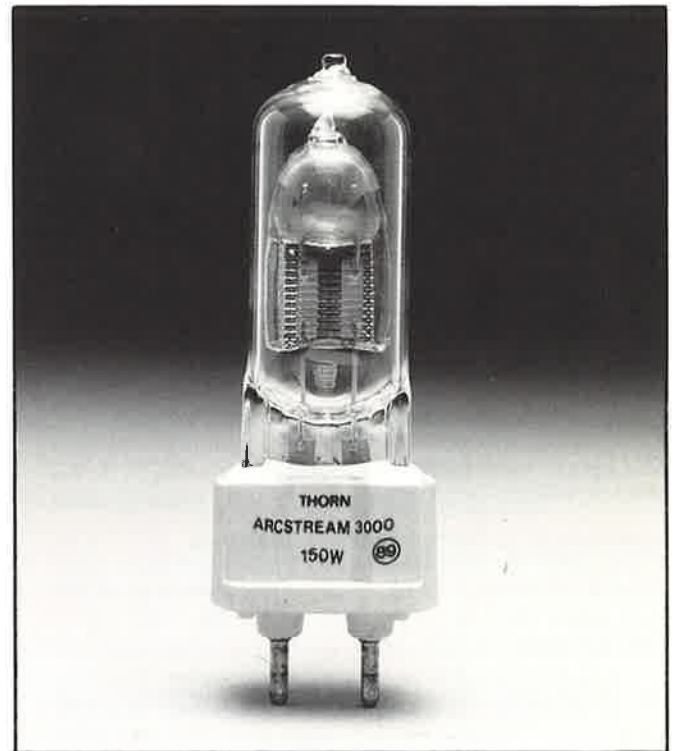
Base — G12

Operating position — Universal

Minimum starting temperature — -20°C

Weight 3bg max.

Average lamp life 6000 hours to 50% failures
(see graph overleaf)



Dimensions in mm

The graph shows the survival of representative groups of lamps operated under control conditions at 5 hrs/start. Lamp life in service will be affected by a number of parameters such as mains voltage deviations, switching cycle, operating position, vibration and shocks, luminaire design and control gear. The information given is intended to be a practical guide in determining lamp replacement schedules. More frequent switching will reduce lamp life.

Arcstream lamps are not suitable for dimming.

Electrical Data

(For nominal lamp and control gear)

Lamp Power (W)	150	
Lamp Voltage (V)	95	
Lamp Current (A)	1.8	
* Supply Voltage (V)	220	240
Supply Current (A)	0.85	0.76
Supply Power (W)	170	172
Power factor lagging	0.9	0.9
% 3rd harmonic	16%	18%
+ Capacitor current (A)	1.4	1.4
Recommended fuse rating (A)	4	4

* Supply voltage - In order to maximise lamp survival, lumen maintenance and colour uniformity, the supply voltage and ballast design voltage should be within $\pm 3\%$.

+ This figure is the maximum circuit current with a failed lamp or with no lamp installed.

Fuse ratings for multiple lamp installations

Number of lamps	1	2	3	4	5	6
Fuse rating (A)	4	6	10	10	16	16
HBC or MCB						

For further information on fuse ratings see Data Sheet

4:90.2.

Run - up characteristics - see diagram

Restrike time - 4 minutes

Thorn Ballasts G.53400.T
G.53460.T
G.53467.T

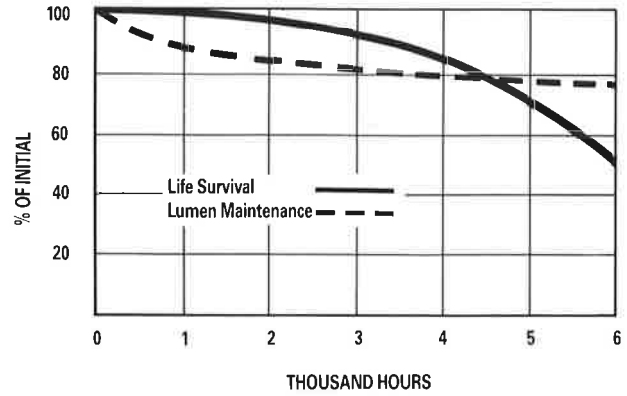
Thorn Ignitor G.53459
P.F. Capacitor GC.2331 (20 μ F)

Other approved ignitors are
BAG Turgi MZN 150-S
MZN 250-SE
Zumtobel ZRM 6ES
ZRM 1.8ES/2
May & Christie ZG4.5SE
Parry PWE 400

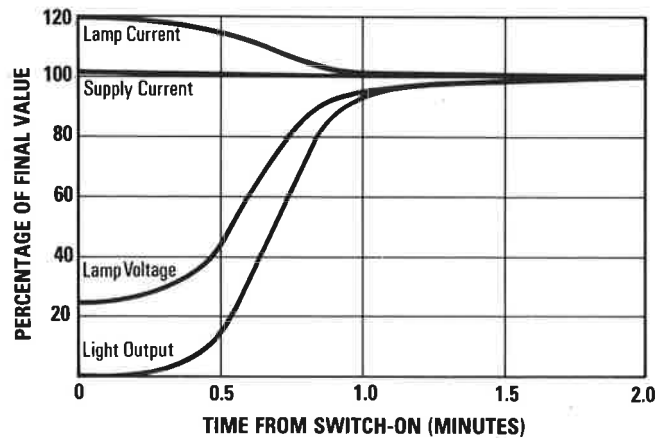
Approved Gear Sets

ADVANCE (USA)	Ballast - 71A5480 for 120V and 277V 60Hz supplies Ignitor - L1520 PFC - 16 μ F 330V
OHYAMA (Japan)	TM-150TA for 100V 50Hz (single piece ballast)
HERMES (Japan)	QH1.5HIA for 100V 50Hz (single piece ballast)
TOEI (Japan)	TM-150TA for 100V 50Hz (single piece ballast)
EYE (Japan)	MT1.5TCPIA for 100V 50Hz (single piece ballast)

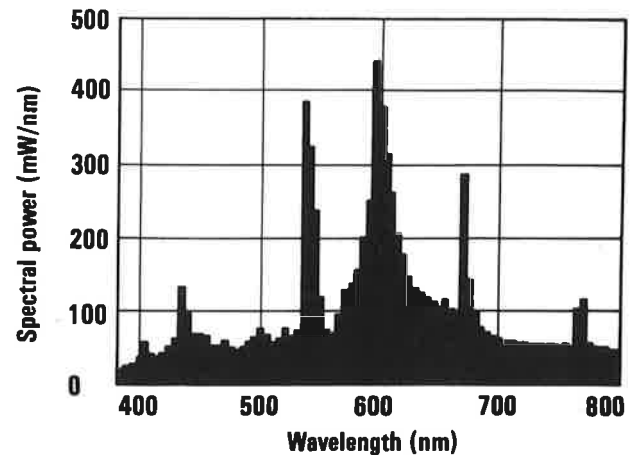
LIFE SURVIVAL



RUN UP CHARACTERISTICS



SPECTRAL DISTRIBUTION



Supply voltage variations of $\pm 5\%$ are permissible for short periods only.

It is therefore essential to use the choke tapping appropriate to the supply voltage at the fitting.

Nominal Luminous Data

Light output

Lumens 100 hrs 12,000

Time for light output to reach 90% - 1 minute

Colour appearance

Nominal correlated colour temperature 3000K

Chromaticity co-ordinates $x = 0.437$

$y = 0.404$

The spread of colour appearance of a typical batch of lamps under standard conditions will be within $\pm 200K$.

Variations in operating position and supply voltage should be minimised for best colour uniformity.

Colour rendering

General colour rendering index (Ra) 80

DIN 5035 Colour rendering group, Group 1B.

Guidance for luminaire manufacturers

Temperature limits

Bulb maximum 600°C

Cap/bulb interface maximum 150°C

Lamp Enclosure

The outer bulb of the lamp is made of quartz which transmits UVA and UVB radiation.

Lamps should always be operated in enclosed luminaires with UV absorbent cover glasses and personnel should never be exposed to radiation from a bare lamp.

Warning

This lamp operates with a high internal pressure and there is a slight risk that the lamp may shatter, particularly if it is run beyond its rated life.

THE LAMP MUST BE FULLY ENCLOSED BY A LUMINAIRE TO ENSURE THE RETENTION OF ANY FRAGMENTS.

When the lamp is cold it may be handled with ordinary precautions.

Reflector Design

Due to the nature of the arc, colour appearance variation is possible when it is viewed from different directions. This effect can be minimised by reflector design.

In general, to produce a homogeneous beam, reflectors should be parabolic in section. Any spreading of the beam required should be achieved using the degree of facetting and surface texture rather than use of an ellipsoidal shape. Narrow angle reflectors should incorporate a small degree of facetting or surface texture.

NOTE

All the performance information quoted has been measured with the lamp in the base down position and at rated supply volts.

Operation and Maintenance

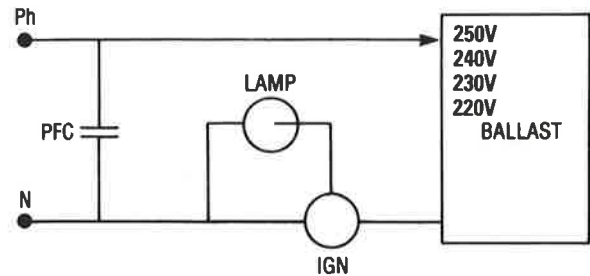
Important The following information gives precautions for the safe handling, installation, use and disposal of Arcstream lamps.

Compliance with these instructions is essential.

Before use

1. Always isolate the equipment from the electricity supply before inserting or removing a lamp.

CIRCUIT DIAGRAM



2. Check that the replacement lamp is of the correct type for the application and for use in the circuit. Only the appropriate control gear must be used.
3. Ensure that the lamp is correctly located in the lampholder and that the outer Quartz bulb is clean. Operating when dirty results in permanent marking of the bulb surface. Excessive handling of the Quartz outer bulb should be avoided. The lamp can be cleaned with a soft cloth moistened with methylated spirit.

During use

4. During operation, parts of the lamp surface may reach temperatures up to 600°C. Prevent liquid condensation droplets or water splashing onto the lamp as these may cause the bulb to shatter.
5. If the outer bulb is broken or scratched the lamp must not be operated.
6. The outer bulb is made of quartz which transmits UVA and UVB radiation. This radiation is harmful to eyes and skin, operators must be shielded from direct or reflected short wave ultra violet radiation.
7. It is essential that the lamp only be used within a luminaire with a front glass that will not break if the lamp shatters during operation. The lamp should not be operated if the front glass is either missing or broken.

Disposal

8. Ensure that the lamp has cooled sufficiently and the supply is isolated before removal from the luminaire.
9. Small quantities of lamps may be disposed of with ordinary refuse. The lamps should be placed in original or similar packaging before disposal.
10. Large quantities of lamps must be disposed of in accordance with the rules of the Local Authority.

Packaging

Individual bubble pack

12 way outer carton
Dimensions 220 x 120 x 75mm
Weight 505g

Thorn Lighting reserve the right to alter the specification without prior notice or public announcement.

Made in the United Kingdom.