

Sportlight™

Metal Halide Lamps

Linear – 1500W and 2000W

Tubular Clear – 1000W and 2000W

Internal Ignitor - 2000W



DATA SHEET

Product information

Sportlight™ lamps are high light output Metal Halide Lamps with high colour rendering index.

Application



Sport

Basic data

Product Code	Product Description	Nom- inated Wattage [W]	Rated Wattage [W]	Weighted Energy Consumption [kWh/1000 hrs]	Volts [V]	Cap	Nominal Lumen [lm]	Rated Lumen [lm]	Rated Lamp Efficacy [lm/W]	Energy Efficiency Class (EEC)	CCT [K]	CRI [Ra]	Ambi- ent Temp [°C]	Operating Position	Mercury Content [mg]	Average Rated Life [h]	Insertion lamp length [mm]	Pack Qty
93102168																		
93102167	SPL1500/L/H/652/ RX7sM TU	1500	1500	1672.00	250	RX7SM	120,000	120,000	80	A	5200	65	25	HOR±15°	47,5	6,000	256	1
93102168	SPL2000/L/H/651/SPEC TU	2000	2150	2339.36	230	spec.	200,000	200,000	93	A	5100	65	25	HOR±15°	72,0	6,000	311	1
Sportlight™ Tubular Clear																		
93102230	SPL1000/T/H/960/E40 TU	1000	1000	1147.07	120	E40	80,000	80,000	80	A	6000	93	25	HOR±60°	61,5	8,000	340	4
93102175	SPL2000/380V/T/H/ 960/E40 TU	2000	2000	2294.78	225	E40	170,000	170,000	85	A	6000	93	25	HOR±60°	149,9	5,000	430	4
93102187	SPL2000/220V/T/H/ 640/E40 TU	2000	1900	2090.00	125	E40	189,000	180,000	90	A+	4000	65	25	HOR±75°	256,0	2,000	430	4
Sportlight™ Internal Ignitor																		
93102181	SPL2000/380V/I/T/H/640/ E40	2000	2000	2182.21	235	E40	190,000	190,000	95	A+	4000	65	25	HOR±75°	325,8	2,000	430	4
93102176	SPL2000/380V/I/T/H/ 960/E40 TU	2000	2000	2291.96	225	E40	170,000	170,000	85	A	6000	93	25	HOR±60°	149,9	5,000	430	4

Dimensions

Figure 1.

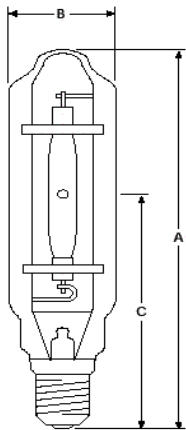


Figure 2.

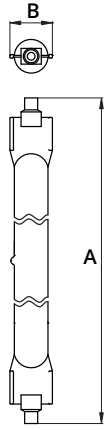


Figure 3.

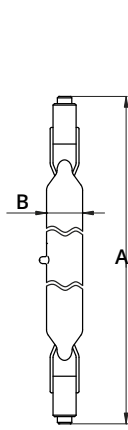
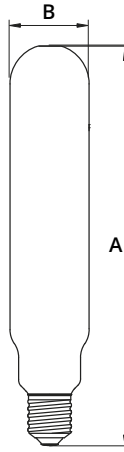


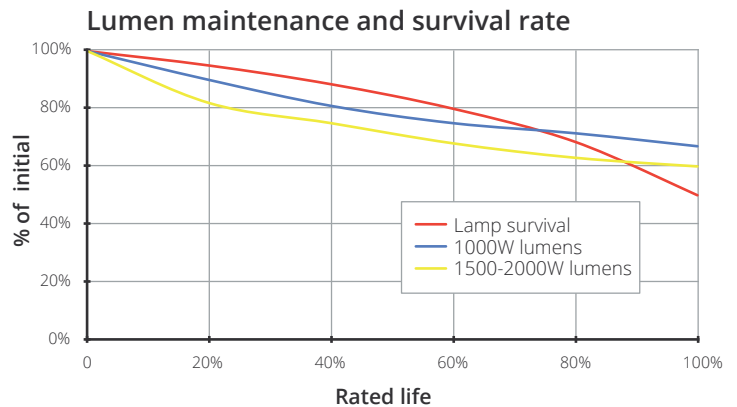
Figure 4.



Type	Wattage (W)	A Contact Length [mm]	B Contact Diameter [mm]	C LCL [mm]	Cap	Bulb Glass	Operating Position	Fig. No.	Minimum Starting Temperature [°C]
SPL1500/L/H/652/RX7sM TU	1500	250.7	24.3	N/A	RX7sM	Quartz	Hor. ±15°	2	-30
SPL2000/L/H/651/SPEC TU	2000	310	26	N/A	Spec	Quartz	Hor. ±15°	3	-30
SPL1000/T/H/960/E40 TU	1000	333.5	65	229	E40	Hard glass	Hor. ±60°	4	-20
SPL2000/380V/T/H/960/E40 TU	2000	430	101.5	265	E40	Hard glass	Hor. ±60°	1	-20
SPL2000/220V/T/H/640/E40 TU	2000	430	101.5	287	E40	Hard glass	Hor. ±75°	1	-20
SPL2000/380V/I/T/H/640/E40 TU	2000	430	101.5	265	E40	Hard glass	Hor. ±75°	1	-20
SPL2000/380V/I/T/H/960/E40 TU	2000	430	101.5	265	E40	Hard glass	Hor. ±60°	1	-20

Survival rate and lumen maintenance

The graph shows the survival of representative groups of lamps operated under control conditions at 10 hours per start. Lamp life in service will be affected by a number of parameters, such as mains voltage deviations, switching cycle, luminaire design and control gear. The information given is intended to be a practical guide in determining lamp replacement schedules.



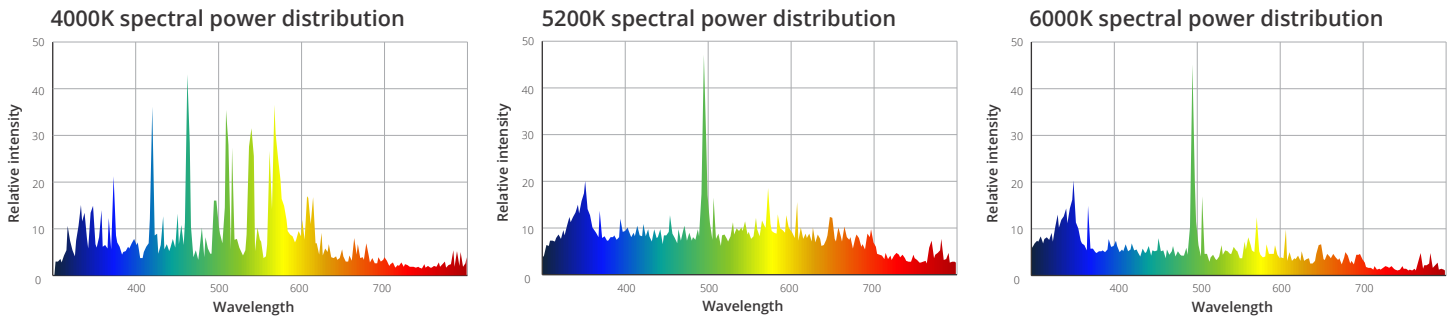
Electrical data

Data is based on a nominal lamp operating from a nominal choke (reactor) ballast.

Product Description	Lamp Voltage [V]	Current [A]	Power [W]	Maximum Current Crest Factor	Supply Voltage [V]
SPL1500/L/H/652/RX7sM TU	250	4.2	1000	1.8	380
SPL2000/L/H/651/SPEC TU	230	10.3	2000	1.8	380
SPL1000/T/H/960/E40 TU	120	9.5	1000	1.8	220
SPL2000/380V/T/H/960/E40 TU	225	10.3	2000	1.8	380
SPL2000/220V/T/H/640/E40 TU	125	16.5	2000	1.8	220
SPL2000/380V/I/T/H/640/E40 TU	235	8.8	2000	1.8	380
SPL2000/380V/I/T/H/960/E40 TU	225	10.3	2000	1.8	380

Note: For ballast characteristics please see page 4.

Spectral power distribution



Operating note

Metal halide lamps operate with a high internal pressure and there is a slight risk that lamps may shatter, particularly if run beyond rated life. At end of life a switch off should be introduced every 24 hours to reduce the risk of shattering. The lamp must be fully enclosed by a luminaire to ensure the retention of any fragments in the event of such failure.

Run-up characteristics

The graph shows typical run-up characteristics for Spotlight™ lamps. Time for the light output to reach 90% of the final value is determined by supply voltage and ballast design. Typical value is:

Wattage (w)	1000-2000
Run-Up Time (mins)	4

Hot re-strike time

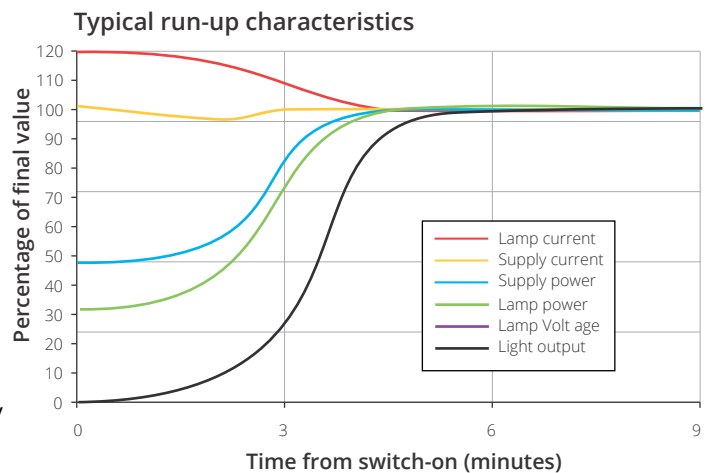
All ratings re-strike within 16 minutes following a short interruption in the supply. Actual re-strike time is determined by ignitor type, pulse voltage and cooling rate of the lamp.

Supply voltage

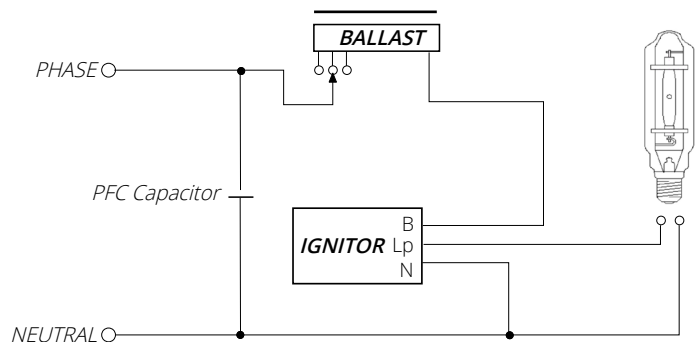
Lamps are suitable for supplies in the range 380V to 420V 50/60Hz for appropriately rated series choke (reactor) ballasts. Lamps start and operate at 10% below the rated supply voltage when the correct control gear is used. However, in order to maximise lamp survival, lumen maintenance and colour uniformity the supply voltage and ballast design voltage should be within $\pm 3\%$. Supply variations of $\pm 5\%$ are permissible for short periods only. This may be achieved by measuring mean supply voltage at the installation and selecting ballasts with appropriate settings.

Control gear

There are no international standards for metal halide lamps of this type. It is therefore important to check the compatibility of lamp and control gear. Detailed information is given under "Guidance for luminaire manufacturers" overleaf. It is essential to use a ballast appropriate to the supply voltage at the luminaire. Typical wiring diagrams for control circuits incorporating "superimposed" ignitor and choke (reactor) ballast are shown. Refer to actual choke and ignitor manufacturers data for terminal identification and wiring information.



Typical superimposed ignitor circuit



Fusing of circuits

For a very short period after switch-on, all discharge lamps may act as a partial rectifier and as a result the ballast may allow several times the normal supply current to flow. For further information refer to the publication "Fuse Ratings for Discharge Lamps" available from Tungsram.

Lamp operating temperature limits

Maximum cap temperature: 250°C

Maximum bulb temperature: 550°C

Control gear

To achieve correct lamp starting, performance and life it is important that lamp and control gear are compatible and suitably rated for the supply voltage at the luminaire.

Ballasts

Ballasts should comply with specifications IEC61347-1 and IEC60923. Series choke (reactor) ballasts should have characteristics close to the following values:

Product Description	Current [A]	Supply Voltage [V]	Impedance [V/A]
SPL1500/L/H/652/RX7sM TU	6.8	380	34.4
SPL2000/L/H/651/SPEC TU	10.3	380	25.6
SPL1000/T/H/960/E40 TU	9.5	220	17
SPL2000/380V/T/H/960/E40 TU	10.3	380	25.5
SPL2000/220V/T/H/640/E40 TU	16.5	220	9.25
SPL2000/380V/I/T/H/640/E40 TU	8.8	380	28
SPL2000/380V/I/T/H/960/E40 TU	10.3	380	25.5

Ballast thermal protection — use of ballasts incorporating thermal cut-out is not a specific requirement but is a good optional safety measure for the installation.

Ballast voltage adjustment — series choke (reactor) ballasts incorporating additional tapplings at $\pm 20V$ of the rated supply voltage are recommended. Alternatively a single additional tapping 20V above the rated supply voltage will ensure lamps are not overloaded due to excessive supply voltage.

PFC capacitors for choke (reactor) circuits

Power factor correction is advisable in order to minimise supply current and electricity costs.

Cable between ignitor and lamp

To achieve good starting superimposed ignitors must be adjacent to the luminaire. Cable capacitance of wiring between the ignitor "Lp" terminal and the lamp should not exceed 100pF (<1 metre length) when measured to adjacent earthed metal and/or other cables, unless otherwise stated by the ignitor manufacturer.

Ignitors

Superimposed type ignitors are suitable. It is recommended that only Tungsram approved ignitors are used. Ignitors should comply with specifications IEC61347-2 and IEC60927 and have starting pulse characteristics as follows:

Product Description	Voltage [V] ¹	Voltage [V] ²	Width [μ s] ³	Repetition Rate ⁴	Current [A]
SPL1500/L/H/652/RX7sM TU	4,000	5,500	1	1-6/cycle	0.2
SPL2000/L/H/651/SPEC TU	4,000	5,500	1	1-6/cycle	0.2
SPL1000/T/H/960/E40 TU	4,000	5,000	1	1/cycle	0.2
SPL2000/380V/I/T/H/960/E40 TU	4,000	5,000	1	1/half cycle	0.2
SPL2000/220V/T/H/640/E40 TU	4,000	5,000	1	1/cycle	0.2

1. When loaded with 100 pF
2. When loaded with 20pF
3. At 90% peak voltage
4. From ignitor into lamp during starting

Pulse Phase Angle: 60-90° el and/or 240-270° el. **Timed Ignitors**—Use of a "timed" or "cut-out" ignitor is not a specific requirement but it is a good optional safety feature for the installation. The timed period must be adequate to allow lamps to cool and restart when the supply is interrupted briefly (see "Hot Re-strike Time"). A period of 5 minutes continuous or intermittent operation is recommended before the ignitor is automatically switched off. Commercially available 10/11 minute timed ignitors are suitable.