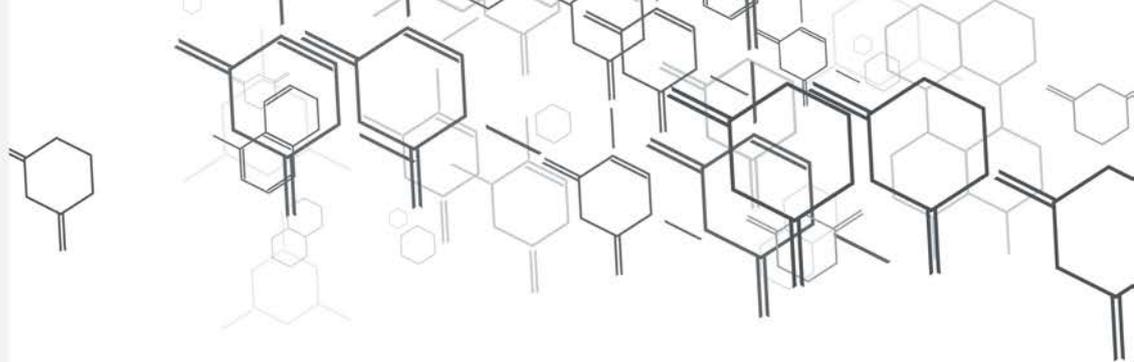


Solution for High Intensity Discharge Lamps

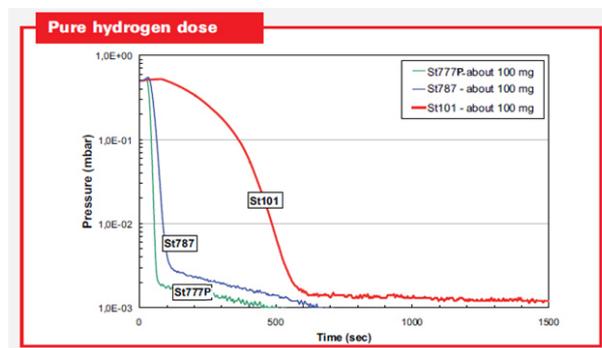


Light emission is generated by an electrical discharge in an arc tube through complex chemical and physical phenomena. The arc tube works at elevated temperatures and is usually protected from atmosphere by a transparent envelope, either maintained under vacuum or backfilled with a pure inert gas.

To ensure that the lamps reach a significant long lifetime, it is necessary to abate vacuum deterioration or gas purity worsening in the jacket, due to the gas release by the hot burner. It is common practice to integrate in the lamp outer jacket a suitable getter, able to cope with the gas loads expected in the jacket. The getter can sorb the gases that are released by the surfaces of the burner and of the outside bulb. The getter also sorbs hydrogen that permeates from the burner due to the high temperatures and that, if not removed, increases the ignition voltage. The getter is therefore essential to maintain the burner hydrogen-free, in order to avoid premature lamp failures.



St787 and the new St777P are low temperature activable alloys that can be used in a wider range of operating temperature with a lower possible operational temperature and an higher capacity for hydrogen. Thanks to the low temperature activation characteristics of St787 and St777P, getter activation can be obtained during the baking-exhaust process, so avoiding a specific activation step. At the same time these alloys can help to shorten the pumpdown time completing the exhaust process with the getter. Positioning of the getter in lamps is less critical and the getter is always showing an activity irrespectively to the lamp position. The higher getter capacity makes possible to consider the adoption of smaller getters. The Recently developed SAES Getters new getter alloy – St777P - is characterized by superior characteristics with respect to the traditional getter materials.



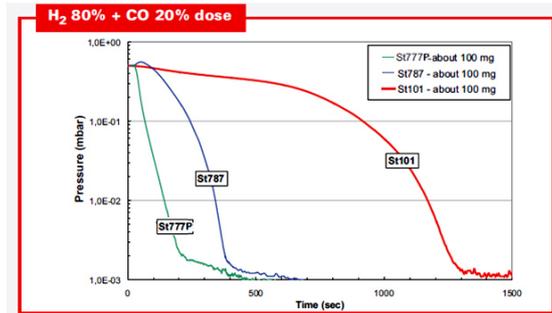
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**saes
group**

www.saesgetters.com

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Solution for High Intensity Discharge Lamps



VALUE OF H₂ CAPACITY EXTRAPOLATED FROM THE ISOTHERM

	St777P	St787	St101	St198
Capacity for H ₂ at 400° C (with P _{H₂} over the getter =10 ⁻⁴ mbar)	>25 cc.mbar/mg	14,5 cc.mbar/mg	10 cc.mbar/mg	1,5 cc.mbar/mg
Capacity for H ₂ at 500° C (with P _{H₂} over the getter =10 ⁻⁴ mbar)	8 cc. mbar/mg	1,9 cc.mbar/mg	2 cc.mbar/mg	0,45 cc.mbar/mg

Oxygen Dispensers for HID Lamps

A problem often occurring in HID lamps comes from the decomposition of organic contaminations remaining in the jacket of the lamps. A dark deposit is created on the arc tube and on the outer envelope.

To avoid the occurrence of this problem SAES Getters has developed (in cooperation with Philips Lighting) the Oxygen Dispenser.

The dispenser, mounted in the lamp jacket, releases a controlled quantity of oxygen at the first lamp switching on. Oxygen oxidizes hydrocarbon to carbon monoxide, carbon dioxide and water vapour that are then trapped by a chemical getter.

The residue of the oxygen dispenser, left in the jacket, does not release any more oxygen, thus avoiding an excessive oxidation of the feedthroughs of the arc tube.

Boost your product performance with SAES Getters solutions:

- [DF Tablets](#)
- [St101-St787 Strips](#)
- [Oxygen Dispensers](#)

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