

# Haze

Words by James Eade

Firstly, we should elaborate on the difference between smoke and fog. Technically, the former is reserved for 'true' smoke generated by pyrotechnic effects that combust chemicals, whereas the latter refers to droplets of water vapour suspended in the air near to ground level. Since smoke or fog machines typically do neither of these things, the terms are generally used interchangeably, despite some in the industry preferring 'fog' as a more appropriate term. We don't care and have used both!

## [Not a Dry Ice in the house . . .](#)

While 'dry ice' machines are not part of this feature, it is worth mentioning a bit about what are perhaps the earliest fog machines. The CO<sub>2</sub> based units use the property of that gas known as sublimation, where it passes from a solid to gaseous state with no liquid phase in the transition. As solid blocks of frozen gas are immersed in warm water, vast quantities of dense white gas are released as it returns to its normal ambient state. As it is heavier than air, it hugs the ground, filling band pits and stage basements with asphyxiating gas in the process, so it has to be used with some degree of caution.

Many manufacturers have now developed methods of cooling the output of smoke generators to give similar effects which makes storage and handling of the 'dry ice' blocks (so called because there is no liquid) unnecessary.

There is some debate as to whether modern alternative effects are as good, and indeed many manufacturers continue to make dry ice boilers. One such, better known for its lighting accessories, is City Theatrical

([www.citytheatrical.com](http://www.citytheatrical.com)), which has invested in refining the design of the traditional boiler to use thermoplastic tanks with stainless steel fittings to prevent the corrosion commonly found on earlier designs - something which certainly indicates the effect is not dead yet.

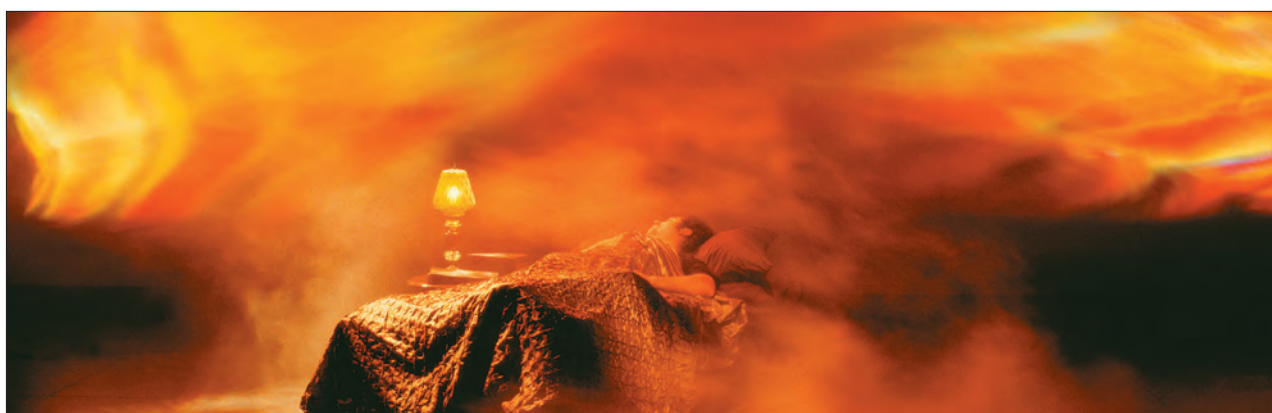
It's also worth briefly mentioning nitrogen effects too, while on the subject of gas. Nitrogen is much colder in its compressed state (around -200°C, over twice as cold as dry ice). Typically it is injected into steam generated by a boiler, causing the steam to rapidly condense, giving the same low lying fog effect as carbon dioxide - sometimes it is simply released through small nozzles to give the effect of smoke jets as it cools vapour in the air.

## [Fog generation](#)

Typically, all fog machines work in the same fashion. A fluid (described later) is pumped into a heat exchanger where it rapidly vaporises. In doing so it increases the pressure in the exchanger, and expels itself at a high rate. As it exits the exchanger and cools, it forms the familiar white fog. The principle is simple, although in engineering terms it is not so straightforward; the design of the exchanger has a great bearing on the performance - and cost - of the machine as whole. The specific heat capacity of the metal used in the design is quite critical - aluminium is common as it heats up quickly, but equally it cools down rapidly, so has trouble creating prolonged bursts of fog. Other metals may have a greater heat capacity and can sustain higher output levels but they take longer to heat up.

The heat exchanger itself is heated using electric elements and of course this also has an effect on

This month, TF is investigating the world of fog, smoke and haze machines and the technology behind them. Such environmental effects are subject to quite a lot of urban myths (particularly where health is concerned) and so this feature should clear some of the fog surrounding their use. (Sorry, it had to be said somewhere!)



warm up times and fog production duration: the higher the power, the quicker it is. Another important feature associated with the exchanger is the thermostat which maintains a constant temperature - too cool and the fog is wet and leaves residues; too hot and it burns and decomposes the chemical in the fluid. The power rating is often quoted by manufacturers as an indication of how 'good' a machine is, but this figure is relatively meaningless on its own as there are so many variables to take into account.

The small bore pipes that run through the exchanger carrying the fluid are the Achilles heel of most machines: blockages render it totally useless and are invariably a back-to-manufacturer repair or replacement job, which is why it is critical to maintain good housekeeping and ensure units are not exposed to excessive dust or use contaminated fluids. Some modern units now also use compressed gas to assist the passage of fluid through the exchanger. This helps in a couple of ways - it can be used to purge the exchanger, clearing residue build-up, but primarily it also helps aerate the vaporising fluid, creating more of a haze or a higher output of less dense fog.

### Haze

To accentuate lighting in a venue it is generally preferable to have a light mist which is barely perceptible but dense enough to highlight the beams of light. The desirable qualities are that it should not be seen on its own and have a long 'hang' time before dispersing. Water-based hazes tend to last for a shorter time than oil-based ones, although the latter is less attractive in permanent venues where a greasy build-up of residue can occur on equipment and surfaces.

The generation of haze is typically via two methods. One is to use a compressor to vaporise (or atomise) the fluid and the other is essentially the same as a fog machine, using heat to do the same job. This has led to a new breed of machine called a 'fazer' which can create either a haze or a fog, depending on settings.

### Fluids

The choice of fluid is a fairly critical operation. It's easy to think that most fog fluids will work in most machines, although for the best effect this isn't necessarily true. The composition of fluids varies widely and as such the heat necessary to vaporise them varies too. Manufacturer A may have calibrated its machine for a 10% glycol/water fluid mix, while manufacturer B might have calibrated for a 30% mix in its machine. The result, if the fluids are swapped, is burnt and wet fog respectively. Burnt fog can be dangerous, especially where glycols are concerned as they can change their composition into poisonous substances such as formaldehyde.

More common fluids uses a combination of glycerine (often called glycerol) or glycol mixed with distilled de-ionised water - some such chemicals are regularly used in the cosmetics and food industry. There are different types of glycol, such as ethylene glycol or propylene glycol, and not all are suitable - the former is used in antifreeze and is poisonous; glycol generally can cause skin irritation. The other type is refined mineral oil based fluids - essentially baby oil. This is again vaporised in a hazer by passing compressed gas through a vat of fluid that essentially breaks the oil down into tiny droplets, a process known as 'cracking'. It's rare to find such 'crackers' these days as the oil mist is not too good for long-term health and the residue does make quite a mess.

Different variations of composition give different effects; for example a low water and high glycol content will give a denser fog, whereas the reverse will give a quick dissipating mist. These are the reasons why it is important to use the correct fluid for a particular machine - use the wrong fluid and the fog will be a bit of a damp squib at best and at worst it could be poisonous. Unsurprisingly, it is possible to scent fluids although generally the crew won't thank you for doing so!

ESTA (the Entertainment Services and Technology Association) in the US has done a lot of work with interested parties in developing standards and guidance on the safe use of smoke effects and there have been various medical studies too. Generally speaking, where such effects are used in typical quantities on a stage (i.e. not making it invisible in a cloud of fog) actors and crew are quite safe, although those with aggravated respiratory complaints should be careful. Lots of information is available from ESTA and the booklet *'The Introduction to Modern Atmospheric Effects'* is well worth getting hold of.

TF has trawled the marketplace to give readers a taster of the products available and here follows a round-up of the great and good . . .

### American DJ

As you might expect of such a prolific manufacturer of DJ products, this company has a wide range of smoke and haze effects. As well as several smaller smoke



machines aimed at the travelling DJ or small venue there are a couple of bigger products, the Accu Fog 1000 (*left*) being one. It comprises a moving head with a 1kW smoke machine built in, delivering a respectable 283 cubic metres per minute (m<sup>3</sup>/m) with no warm-up time between blasts.

It comes with a one litre tank built in (although a gallon tank is available as an accessory that sits adjacent to the unit) and all the controls are via

DMX/RDM, allowing control of all parameters, including duration and interval.

The company also does one Haze generator that uses a heater-free design, although only with the company's own haze oil. While the heater-free aspect may be attractive, the unit is limited to a six-hour stint connected to a power supply, which is fine for smaller events but perhaps a hindrance on larger shows. The unit can deliver 28m<sup>3</sup>/m in normal running.

[www.americandj.com](http://www.americandj.com)

### Antari

Antari is a name long associated with DJ equipment although the company also does a range of higher-end professional units including low level foggers. There are six products in the Z Series, the smaller end of the range delivering 56m<sup>3</sup>/m with the upper end at 1132m<sup>3</sup>/m. The X series is billed as the professional end and



The Antari Z series II

these models (of which there are three) have innovative features such as W-DMX receivers built in and outputs up to 566m<sup>3</sup>/m. On the high output front there are two models, the M-5 and the M-10, delivering 566m<sup>3</sup>/m and 1132m<sup>3</sup>/m respectively.

There are four hazers in the range, all using compressed air as the vapourising mechanism. The smallest is the HZ-100, delivering 28m<sup>3</sup>/m with wired or wireless remote rising to the HZ-500, a flightcased unit that is very quiet in operation (< 70dB). It delivers a very dry haze while consuming a humble 50ml per hour of fluid for 85m<sup>3</sup>/m of output.

[www.antari.com](http://www.antari.com)

### Chauvet

Another name well established in the DJ arena, Chauvet is in the process of expanding its operations having just started work on a new, larger facility at its headquarters in the US. Its range of products consists of six foggers and two hazers. The lower end of the fog generators is the Hurricane 650 (42m<sup>3</sup>/m); at the other

end of the scale is the Flexfog 1500 (right), capable of delivering 700m<sup>3</sup>/m with wired remote built-in and single-channel DMX control. This unit also has a novel adjustable output angle which is not too common, despite being very useful.



company tends towards the unusual. There are two foggers - the Fantasy FX which is self-contained in a can and only requires manual operation, and the Fogmax, a unit that the manufacturer claims will never need the heating head changing and will never clog. This can deliver 850m<sup>3</sup>/m and comes with single-channel DMX control as well as a remote cyclic timer control. It also has a low level fogger, the Polar Controller which can deliver 200m<sup>3</sup>/m after an 11 minute warm-up cycle. This has DMX control on board for the fogger itself although the chiller needs an additional interface module for DMX; both come with wired remotes.

The two hazers are aimed at the pro-end of the market with features such as individual control of haze output and fan speed via DMX. The smaller Ultimate HZ delivers 42m<sup>3</sup>/m while the much bigger Arena Hazer comes flightcased along with an additional horizontal blower mounted underneath to increase the speed and orientation of the 566m<sup>3</sup>/m haze output. All the controls are again available via DMX (including the additional blower) as well as via remote control or on the unit itself.

[www.chauvetlighting.com](http://www.chauvetlighting.com)

#### CITC

Crawford International Theatrical Corporation (CITC) is an established US business specialising in a range of effects including snow, bubbles, mist, wind and so on. As far as fog and haze goes the

As for Hazers, CITC has a water-based and an oil-based unit. The Hazemax uses water-based fluid with no glycol or oils to deliver the haze, although the consumption rate compared to many hazers is not great, with rates measured in litres/hour rather than the more typical millilitres. It does, however, have the advantage of not leaving any residue or developing condensation. The oil-based Starhazer II incorporates features such as seven stage filtering to ensure that the system doesn't get clogged and a dual

opening to give both near and far-field coverage. Output rates are 355m<sup>3</sup>/m from a consumption of 15ml per hour of fluid.

[www.citcfx.com](http://www.citcfx.com)

#### The Effects Company

The baby of the range from The Effects Company is the Mini 500, a small hand-held unit that uses aerosol cans of fluid rather than ordinary liquid. It is heavily insulated which allows it to be used without power for up to 30 minutes, although this does depend on the duration of smoke generation. Its bigger brothers, the Supersmoke 1000 and 3000 have higher outputs, the latter also having an additional 'air-boost' function to increase smoke projection. All three units use slightly antiquated 0-10V analogue control although the company does sell a DMX converter to allow remote control from elsewhere.



The Supersmoke from The Effects Company.



[www.antari.com](http://www.antari.com) [sales@antari.com](mailto:sales@antari.com)

### HZ-500, Newest True Hazer Technology from Antari



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The Cyclone 4000 is the largest in the range, effectively combining two pumps and heaters in one box to deliver a high output with additional fans to increase the projection and DMX control as standard. The company goes to great lengths to ensure that the units are easily maintained with only 'simple refurbishment' of the copper heating coil required in the case of blockage - perhaps more refreshingly honest than some! Also of note is the Cirrus Low Smoke, a CO<sub>2</sub> driven cooler unit that attaches to any of the company's smoke machines in order to provide a low level dry-ice effect. It uses the gas from cylinders rather than lumps of dry ice to cool the smoke to -25°C and also includes a condensation tray to ensure output stays dry.

[www.effectscoco.com](http://www.effectscoco.com)

## Jem

Jem was bought by Martin Professional some years ago and continues to be prolific in terms of product development. It offers a wide range of products, from the small Magnum 650 which is capable of delivering 160m<sup>3</sup>/m up to the Roadie which can produce an astonishing 5000m<sup>3</sup>/m continuous output of fog. In the mid-range, the Magnum foggers can deliver outputs from around 300-700m<sup>3</sup>/m and the ZR33 Hi-mass can deliver 1000m<sup>3</sup>/m continuously from a relatively small unit. There is also the Hydra and Magnum club which are systems that have a central fluid reservoir and remote heads allowing smaller heads to be mounted more discretely in rigs or set, without the hassle of regular visits to top up the fluid.

There is also a wide range of hazers starting with the Magnum Hazer, a relatively small unit with an output of 2000m<sup>3</sup>/m. The ZR24/7 sits in the middle of the range and although it has the same output as the Magnum, as its name suggests it is designed for continuous use.

The K1 (right) is a water-based hazer with density and output control and has a continuous output of 5000m<sup>3</sup>/m.

Nearly all the range come with DMX control except for the very basic models and there is also a wide range of accessories and fluids available.

[www.jemsmoke.com](http://www.jemsmoke.com)

## KAM

KAM is not a name that springs to mind when thinking of smoke and fog, although it is a brand of Lamba which has been around in the UK for around 25

years. Very much geared towards the DJ market, Kam has four models of interest. The bottom of the range is the KSM800, an injection-moulded plastic unit that would be suitable for the smallest of events. The KSM1100 is the next stage up, delivering 284m<sup>3</sup>/m output and with a wireless hand-held remote giving timer control and manual operation.

Next up is the DMX1750, a unit pitched at the semi-pro market with local, DMX and wireless control of its 370m<sup>3</sup>/m output. This unit also claims to have a patented feed pipe system that will "never be blocked". On a more novel note is the DMX1600V, a smoke machine with a vertical outlet capable of delivering 360m<sup>3</sup>/m in the form of a smoke jet up to 15m high. This too comes with a wireless remote as well as full DMX control.

[www.kam.co.uk](http://www.kam.co.uk)

## Kupo

Better known for its connectors, Kupo has a range of lighting and related products including four smoke and haze machines. The M-5 fogger is a straightforward unit capable of delivering 566m<sup>3</sup>/m and has DMX and wired remote control as standard, although there is an optional radio remote. It also does the DNG-100, an adaptor designed to fit on most general purpose fog machines to create a low lying dense dry ice-style fog by electric cooling.

For haze, the PG-400 and PG-500 are compressed air based units that has a remarkably low claim of fluid consumption at one litre for 48 hours, although no data is available on what the actual output is. Finally it also has developed a small handheld fogger that runs off battery power and can deliver an output continuously for up to 10 minutes, with a built in reservoir big enough for 55 minutes of output.

[www.stage.com.tw](http://www.stage.com.tw)



## Le Maitre

A company that needs no introduction as far as special effects are concerned, Le Maitre has a range of smoke and haze machines available. Interestingly, it

has departed from the oil and glycol/glycerine mixes in favour of a fluid that basically consists of sugar (its STAR technology). No hazards, no mess and it leaves machines clean. The most recent addition to the range is the G300mkIII, a revamped version of the original G300, one principle change being the addition of DMX control as standard. Both are versatile machines allowing them to be used as either hazers or fog

generators by changing the control panel setting and fluid used. The later version though has a smaller output at only 550m<sup>3</sup>/m whereas the G300 is capable of producing 850m<sup>3</sup>/m.

Another recent addition to the range is the MVS (Multi Venue System) hazer (*below right*) that has a variable output, coupled with twin variable projection fans and 90° electronically variable output direction. Control is via DMX as well as on the instrument panel and it includes non-volatile memory to allow settings to be stored and recalled at switch-on - a feature ideal for static installations. Where such level of control is not required, the simpler Neutron XS hazer is a quiet running unit that leaves no residue and can deliver an exceptional 150 hours worth of haze from one 2.5l bottle of fluid. It comes with analogue control as standard, although DMX is available as an option.

As far as other foggers are concerned, Le Maitre has several. The Mini Mist is a long established product that uses aerosol canisters of smoke fluid to provide up to 180m<sup>3</sup>/m of fog and is ideal for simpler applications. The Microfog is a bigger version of the Mini Mist in that it has a bigger heater but also uses aerosols. For the larger stage the Maxi Fogger can generate up to 275m<sup>3</sup>/m and has a wired remote as well as an integral fluid tank, thereby minimising leaks and spillage. Along the same vein is the Speedfogger, which allows the user to rapidly change the fluid capillary on the heat exchanger if there is a problem as well as providing several control options.

Finally, the company also produces the Freezefog Pro, an adaptor unit that uses gaseous CO<sub>2</sub> to chill fog for a low lying effect.

[www.lemaitre.co.uk](http://www.lemaitre.co.uk)

#### Look Solutions

Germany-based Look Solutions has developed a good reputation for its small hand-held units, although it also produces a range of large, flightcased models for the largest venues, as well as everything in between. The smallest is the dinky little Tiny F07 which lives up to its name at only 10 x 5 x 5cm, although the battery and small reservoir (that can be remote) easily double this size. It has a one second warm-up time which means that the battery only delivers

power when required and has features typically found on midrange pro units including adjustable time output, on board trigger or (optional) cable, wireless or DMX controls and can even run continuously.

The mid-range is typified by the Viper NT, which has fine control over the output level down to increments of 1%; control is either via the on-board panel or DMX as standard, and includes duty cycle timing adjustment. The largest is the Orka, a unit that can soak up half a litre of fluid per minute at full tilt and runs off a 9kW supply. As with the others in the range it is controlled via DMX and similarly also has a fan socket that allows the DMX signal to control an external fan to assist in fog distribution.

For haze, the Unique 2 (*below*) has various novel features including a haze density control system which allows a profile to be programmed with density, fan speed and duration to allow it to automatically adjust the output for a show. Finally the company also has a flightcased low level fog generator which uses gaseous CO<sub>2</sub> to produce cooled, low lying fog.

[www.looksolutions.com](http://www.looksolutions.com)

#### MDG Fog

Canadian company MDG is another industry stalwart, having been producing foggers for over 25 years. As such, it has a wide range - although they all (bar the MM series) require compressed gas to operate. The MM series is the basic end of the range and the Mini and Mega are small self-contained units with outputs of 56 and 150m<sup>3</sup>/m respectively, and come with DMX control as standard along with a detachable remote. The

Max APS series has three units that can deliver from 85 to 445m<sup>3</sup>/m and they come with a detachable remote as standard although there is an optional DMX card.

The Atmosphere hazers (the HO version having twice the output of the normal one) are also gas based, which helps to give quiet running - in fact exceptionally quiet running at 45-48db(A) - so making them suited for operas and similar shows. The running time is quite high at up to 60 hours continuous for the HO version (45



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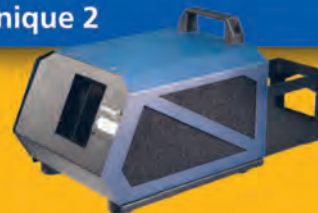
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## Orka



Fog generator DMX, 9000 W

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for the other) and control is via the basic detachable remote. Optional accessories include a remote control timer for advance programming or a DMX interface. Both the Atmosphere and the Max machines use the gas supplies for automatic purging of the pipework to ensure the system stays free of debris and hence blockages.

Finally, there is also a pair of low level fog generators available, again using a combination of fluid and gas and which also are very quiet in operation.

[www.mdgfog.com](http://www.mdgfog.com)

#### Monacor

Monacor is probably better known by its brand name Stageline. It has several units available, predominantly aimed at the disco/DJ markets. The smallest is the FM-708 which is capable of 71m<sup>3</sup>/m rising to the FM-1308 which can deliver 570m<sup>3</sup>/m. All have a wired remote control although the FM-1308 also has DMX.

Monacor also produces a 'fazer' that combines both a hazer and fog machine in one

unit. It can deliver 57m<sup>3</sup>/m and has adjustable operation time and a wired remote.

[www.monacor.com](http://www.monacor.com)

#### Rosco

Rosco has three models aimed at the entertainment sector, with a further three aimed primarily at industrial and training applications. The entertainment range comprises the Delta 3000, 6000 and Delta hazer. The 3000 is the smallest, consuming over 6 litres an hour on full output, whereas the 6000 uses dual-path heat exchangers to soak up 9 litres an hour which makes it well suited for the larger stage. The hazer uses a water-based fluid to create a considerable level of haze in a short time, although it can use up to a litre an hour in the process. It also features a self-cleaning mechanism to help ensure the unit stays blockage-free.



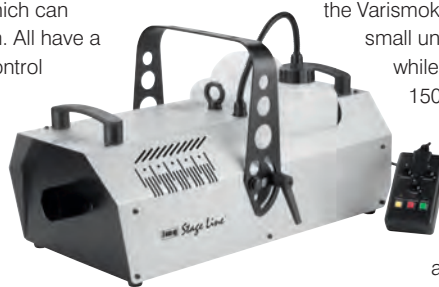
Rosco's Delta 6000.

While control of the units is available on the unit itself or via a DMX console, there are three alternative controllers for stand-alone operation. The Digital DMX Remote gives the user via an LCD screen an encoder to set "real time" timers which can be set in one-second increments from one second to 10 minutes. An analogue DMX Remote gives volume control and DMX control as well as on/off sequencers using traditional switches and controls. There is also a basic Timed Remote which is designed for those situations where the fog machine will always require an operator, such as industrial applications.

[www.rosco.com](http://www.rosco.com)

#### SGM

Italian manufacturer SGM has a selection of units suitable for most stage and studio applications. The simplest is the Varismoke II which is a basic small unit with DMX control, while the Fogger 1000 and 1500 are geared towards bigger venues with outputs of 300 and 600m<sup>3</sup>/m respectively. All feature DMX control as standard with the latter two having a simple on/off remote included as well.



Above: Monacor's FM-1308.

The company also manufactures a 'fazer' which can deliver 105m<sup>3</sup>/m and has twin fans to allow greater control over output coverage. As well as having DMX built in, there is also a wireless remote option available. Finally, there is an ordinary hazer in the range (Hazer 400) that can operate for up to 40 hours on a single reservoir while delivering 84m<sup>3</sup>/m.

[www.sgm.it](http://www.sgm.it)

#### Smoke Factory

Based in Germany, Smoke Factory has a range of hazers and foggers, several of which are particularly aimed at touring use. These include some large flightcased units including the Enterprise TC4 and the Fanfogger DMX3. The former can run continuously at 50% of maximum output consuming 120ml/min in the process and is contained in a flightcase with room for a large 5l reservoir. The latter has a similar sized



The Fogger 1500 from SGM.

fogger with the addition of a large fan do increase dispersion and also give room for more reservoir storage in the flightcase. Both come with DMX control as standard.

For the smaller stage the Captain D (right) is a portable unit that consumes 120ml/min to give quite a high output for up to 40 seconds.

Output level is adjustable from 0-100% in 1% increments. Control is via DMX, analogue or built in timer as standard. If such a size is not quite enough, the Data II is a hefty unit that has the same features as the Captain D but uses up to 240ml/min for 60 seconds worth of full output. At the other end of the scale is the Scotty II, a little handheld unit complete with detachable battery and little fluid canister. It is capable of producing fog in a second thanks to the 400W heater and can produce 10 minutes of continuous fog if required. Control is via integral push button or optional DMX or wireless remote.

Also of note, as the company's Florian von Hofen reminded us, is the fact that Smoke Factory is the only fog machine manufacturer to have Germany's stringent VBG certification. This means that Smoke Factory's machines, fluids, and fogs are all considered completely safe to the user's health.

[www.smoke-factory.de](http://www.smoke-factory.de)

### Swefog

This Swedish manufacturer has a small but quite innovative product line-up. It has one fogger, the T26 evo2, which from such a small unit can deliver a very respectable 1800m<sup>3</sup>/m at full operation. As well as adjustable output from 0-100% it has user definable starting methods including a silent soft start mode where the fluid pumps speed up slowly, eliminating the 'crack' noise from the heat exchanger, and a normal mode allowing for quick smoke bursts. Included control



options are extensive and the unit can be operated from DMX, analogue, manual remote or stand alone.

There are two hazers, the Ultimate 2000 and 3000. They both have instant output from power up, standalone or DMX control and extensive filtering to keep the fluid paths clean.

They also have very low fluid consumptions using only 50ml/hour. They are both designed around

compressed air systems and the 3000 has a separate compressor that can be attached to the hazer or located remotely to allow the hazer to work on-stage but remain very quiet.

The latest product from the company is the Intellahazer (below), which is more of a 'fazer', capable of producing fine hazes or dense fogs. It has a number of interesting features including continuous full output capacity, a low speed turbine fan which operates automatically or can be manually overridden, a programmable controller that can allow recall of four presets of output level, fan speed and operation/delay times as well as DMX, analogue remote and standalone control. It is also quite powerful, capable of delivering 2500m<sup>3</sup>/m.

[www.swefog.com](http://www.swefog.com)

### Varytec

The products made by Varytec are marketed by B&K Braun in Germany and are aimed at the smaller DJ end of the market, with prices to suit. There are

several models, the smallest being the F-80B which is a small stand-alone unit capable of delivering 70m<sup>3</sup>/m. The VN-1000 and VN-1200 are the mid-range units, with the former capable of

140m<sup>3</sup>/m with basic wired remote control, whereas the latter includes DMX control and can output up to 510m<sup>3</sup>/m. The largest is the F-3000 DMX which can deliver 1100m<sup>3</sup>/m but not very efficiently, using up over 4 litres an hour. Again a simple controller is included or it can be operated via DMX.

[www.b-und-k.de](http://www.b-und-k.de)



Some people seek therapy for their obsessions.

We build fog generators.



### Swefog Live T26Evo2

**MOST POWERFUL** smoke generator in its class: 1,800 m<sup>3</sup> smoke output per minute.

**VERY** precise output control 1-100%

**FULLY LOADED:** DMX, stand-alone, real-time timer, 0-10V, alphanumeric display - NO guesswork.

**EXTERNAL FAN CONTROL** transforms the T26Evo2 to a powerful outdoor stage hazer. Integrated control.



### Swefog XEON Intellahazer

**VERSATILE:** Several types of fluid can be used, for creating everything between a crystal-clear, silk haze, to a high density fog.

**CONTINUOUS OPERATION** at all output levels.

**QUIET FAN,** oversized & variable speed 11-100%

**REAL QUALITY** in every detail - it's a Swefog!

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Two TF Features Next month:

Audio Networking & The PixelLine Micro W LED Fixture from PixelRange