






## Freestanding UV & Compact UV Dryers

-  stencil processing
-  screen printing
-  air force
-  ultra violet
-  infra red



Natgraph manufacture a range of Freestanding Ultra Violet (UV) Dryers that has been developed from many years of experience gained in the production of over 500 conveyerised UV Dryers, in daily use world-wide. Natgraph UV dryers are widely acknowledged as the coolest and most efficient available.

These dryers have been designed for curing UV surface coatings applied to promotional, electronic, credit card, glass, display and telecommunications products, as well as 3D objects etc. If there is a UV curable ink available for an application,

**Freestanding UV Dryers**  
**Compact UV Dryers**  
**Ozone Filter**

Natgraph will have a solution.

With 8 standard belt widths, Touch Screen PLC Systems, 4 layouts, optional pre IR, Ozone Filters and Intelligent UV Control Systems, this range of dryers is extremely adaptable, versatile and efficient.

Natgraph also manufacture a range of Compact UV Dryers for applications where space is restricted and less temperature sensitive substrates are to be processed. This range utilises the Natgraph 1m UV Module to provide a high specification in the minimum of floorspace.

**UV Curing Kits**  
**Drop Down Inlet**



# Freestanding UV & Compact UV Dryers

## Freestanding UV Dryers

### Features

- Touch Screen PLC Control System
- High efficiency fully focused reflectors
- Quartz infra red heat filters
- Inter-lamp cooling zone
- After cure cooling zone
- Inlet vacuum hold-down
- Castors and jacking feet
- Gas filled hood lifting arms
- 8 standard model sizes
- Optional doped lamps
- Optional higher power output



In house manufactured transformers



High efficiency low temperature UV



2 Freestanding UV Dryers and Automatic Stackers

The Natgraph range of Freestanding UV Dryers is designed to meet the requirements of sheet fed printing operations and are built to the same modular design as Natgraph's Air Force Dryers. Available in 8 standard curing widths from 70cm through to 260cm, all standard print formats can be processed.

Natgraph's UV technology is acknowledged as the coolest running and most efficient available. This has been achieved with extensive knowledge of discharge lamp requirements for optimum performance and the use of Natgraph's, in-house manufactured transformer systems.

The standard 1m inlet section with control box attached has under belt vacuum fans fitted to ensure smooth delivery of substrates from the printing machine to the dryer. In high-speed operation this facility is very useful, particularly with fully automatic presses. The length of the inlet section can be increased by the addition of extra modules for large format printing as well as operation with more than one printing machine. The belt is of an open mesh P.T.F.E. coated fibre glass construction, with reinforced edges and protective flap below the joint.

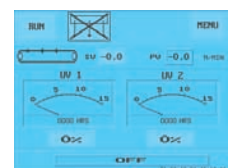
Operation of the dryer is via a Natgraph Touch Screen PLC Control System. This includes belt speed (3 – 50m/minute, 0.1m resolution, via a feedback loop), inlet vacuum hold-down system, as well as independent control of each UV lamp, including lamp power level, lamp hour meters (re-settable), total hour meters (non re-settable) and lamp current monitoring with virtual ammeters. A dryer fault diagnostic system is included with on-screen indication of fault conditions (logged by date/time). A comprehensive safety system is installed in all Natgraph UV dryers, this includes lamp current monitoring, positive disconnect safety switches, air pressure switches, earth leakage sensor, thermal switches within the transformers and a minimum speed cut-out device for the belt. These are all linked to a warning siren to alert the operator in the unlikely event of any technical problems. A service due indicator is also included and a large hinged access door allows easy access to the lamphouses for quick lamp change.

1, 2 or even 3 high-powered UV lamps can be installed in the 2m module, which has internal gas filled lifting arms to raise the hood for maintenance etc. The all aluminium lamphouses have high efficiency, fully focused anodised aluminium reflectors and a flat quartz infra red heat filter window fitted below the lamps, which isolates the lamp cooling air from the substrate. This filter reduces the effect of the infra red energy from the UV lamps, resulting in a much reduced 'impact temperature' on the substrate. In addition, all ozone produced by the lamps is extracted and a dedicated vacuum system holds the substrate in position whilst also cooling the belt. Natgraph's technology ensures that this UV system is probably the coolest available, reducing substrate shrinkage and thus ensuring consistent print registration.

The medium pressure, mercury vapour lamps are run at 120 watts/cm (300 watts/inch) on high power and 80 watts/cm (250 watts/inch) on low power. The lamphouses are separated by a short cooling section and followed by a 1m wide ambient cooling zone, fitted with galvanised jet plates. This air system is designed to ensure a balanced airflow to take the minimum amount of air from the print room. Natgraph design and in-house manufacture their own unique transformer systems to guarantee the most efficient operation and the highest possible quality of their range of UV dryers.

The 0.5m exit section, which can be extended, contains the belt drive motor, drive linkage tensioning device and drive rollers.

Purpose built versions of the dryer using doped lamps with different spectral wavelengths, as well as higher power outputs for specialised inks are available. Special height legs are also available as well as pneumatically operated drop down inlets to ensure the dryers are fully compatible with all printing machines. These dryers require a three phase power supply.





# Freestanding UV & Compact UV Dryers

## Compact UV Dryers

### Features

- Touch Screen PLC Control System
- High efficiency fully focussed reflectors
- Quartz infra red heat filters
- Vacuum hold-down under lamps
- Castors and jacking feet
- Gas filled hood lifting arms
- 7 standard model sizes
- Optional Intelligent UV Control System
- Optional Ozone Filter

The Natgraph range of Compact UV Dryers has been developed to provide a high performance UV Dryer in the minimum of floor space. This has been achieved by combining a Natgraph UV 1m Module and the inlet/outlet from an Air Force Dryer. In applications where space is restricted and the substrate is not temperature sensitive, this dryer is ideal.

Manufactured in the standard Natgraph curing widths (except models 70 and 260), these units are available with 1 or 2 lamps, running at 120 watts/cm. These dryers have vacuum hold-down,

digital readout of belt speed, quartz infra red filters etc., all in a length of only 2.5m. The transformers, extraction fan and control system are all located in the base module, whilst the Natgraph Touch Screen PLC Control System and safety systems are the same as for a Natgraph Freestanding UV Dryer.

The specifications of these dryers are similar to the Natgraph Freestanding UV Dryer, except the length which is 2.5m and air intake volume, this is much lower as there is no dedicated inlet. These dryers require a three phase power supply.

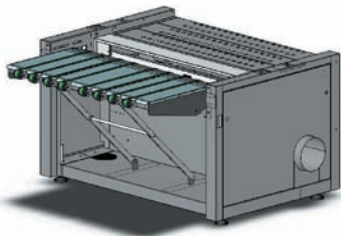


Compact UV Dryer with Drop Down Inlet

## Drop Down Inlet

A drop down inlet module has been developed by Natgraph for use when a dryer is in production with a cylinder press. This consists of a stainless steel table fitted with a vacuum system and transport belts. The table can be lowered to allow the operator easy access to the screen frame for cleaning etc. The table is moved by pneumatic

cylinders, this is operated by one of 2 safety key switches (1 located on either side of the dryer). This module is available for all sizes of Natgraph Air Force Dryers and adds 500mm to the length of the dryer. These modules require a compressed air supply,



Pneumatic Drop Down Inlet operating with cylinder press

## Ozone Filters

Natgraph have designed ozone filter assemblies to operate with their range of UV Dryers. Ozone gases are produced by UV lamps and must be extracted from the dryer efficiently. The ozone is normally extracted from the dryer through ducting to the outside of the building. All of Natgraph's UV Dryers have an efficient and fully sealed extraction system to ensure that all the ozone produced is removed.

If there is no easy route to the outside of the factory, or there are environmental reasons that gases or noise should not be emitted from the

factory, then the ozone must be removed by a filter system. Natgraph's Ozone Filter does this and also allows the heat generated by the UV dryer to be re-used within the factory, thus saving on heating costs.

There is a replaceable pre-filter that removes any airborne particles within the unit. If this filter is regularly replaced, then the charcoal filters within the unit will never need to be changed. These units are designed to function without reducing the efficiency of the UV dryer.



Ozone filter



# Specifications

## Freestanding UV & Compact UV Dryers

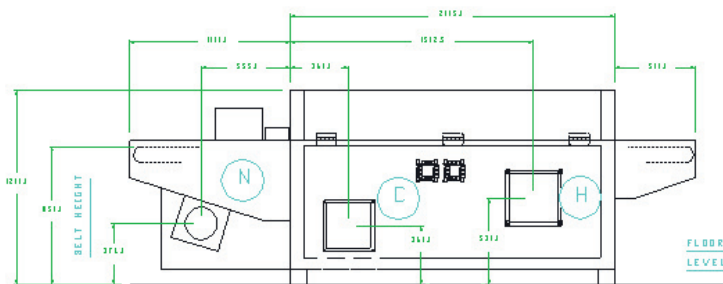
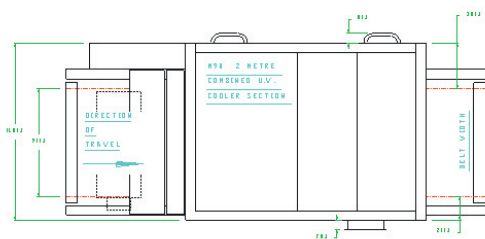
The following details are common to all Freestanding UV Dryers.

	1m entry, 2m UV/Cooler, 0.5m exit. (1m exit on model 260)
<b>Belt Height</b>	79 – 90cm (31" – 37") Adjustable by the modules feet. (Higher options available)
<b>Belt Speed</b>	3 – 50m per minute (10' – 166') Slower speeds are available to order.
<b>Height</b>	114 – 129cm (45" – 51") Adjustable by the modules feet.
<b>Length</b>	All standard models are 3.5m (140") long, except model 260 which is 4m (160") long.
<b>Voltage</b>	Three Phase 400 Volts 50/60Hz. AC

These figures apply to individual model sizes.

Model No.	70	90	110	130	155	170	185	215	260
<b>Belt/Curing Width</b>	70cm (28")	90cm (36")	110cm (43")	130cm (51")	155cm (61")	170cm (67")	185cm (73")	215cm (84")	260 (102")
<b>Width</b>	138cm (54")	158cm (62")	178cm (70")	198cm (78")	223cm (88")	238cm (94")	253cm (100")	283cm (112")	370 cm (145")
<b>Weight</b>	720kgs. (1584lbs.)	910kgs. (2006lbs.)	1130kgs. (2486lbs.)	1320kgs. (2910lbs.)	1510kgs. (3322lbs.)	1700kgs. (3740lbs.)	1870kgs. (4114lbs.)	2010kgs. (4422lbs.)	3000kgs (6600lbs)
The following power figures are for 2 lamps at full power, 120 watts/cm (300 watts/inch).									
<b>Power</b>	20kW	27kW	34kW	40kW	47kW	51kW	57kW	67kW	83kW
<b>Current</b>	45	55	67	80	95	105	119	136	115?
The following air volumes are in 1,000m <sup>3</sup> /hour									
<b>Air Intake</b>	2.2	2.8	3.2	3.8	4	4.3	4.8	5.6	6
<b>Extracted</b>	2.3	2.9	3.4	4	4.2	4.6	5	5.8	6

Note. Compact Dryers specifications are similar and can be confirmed upon request.



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