

# Natgraph

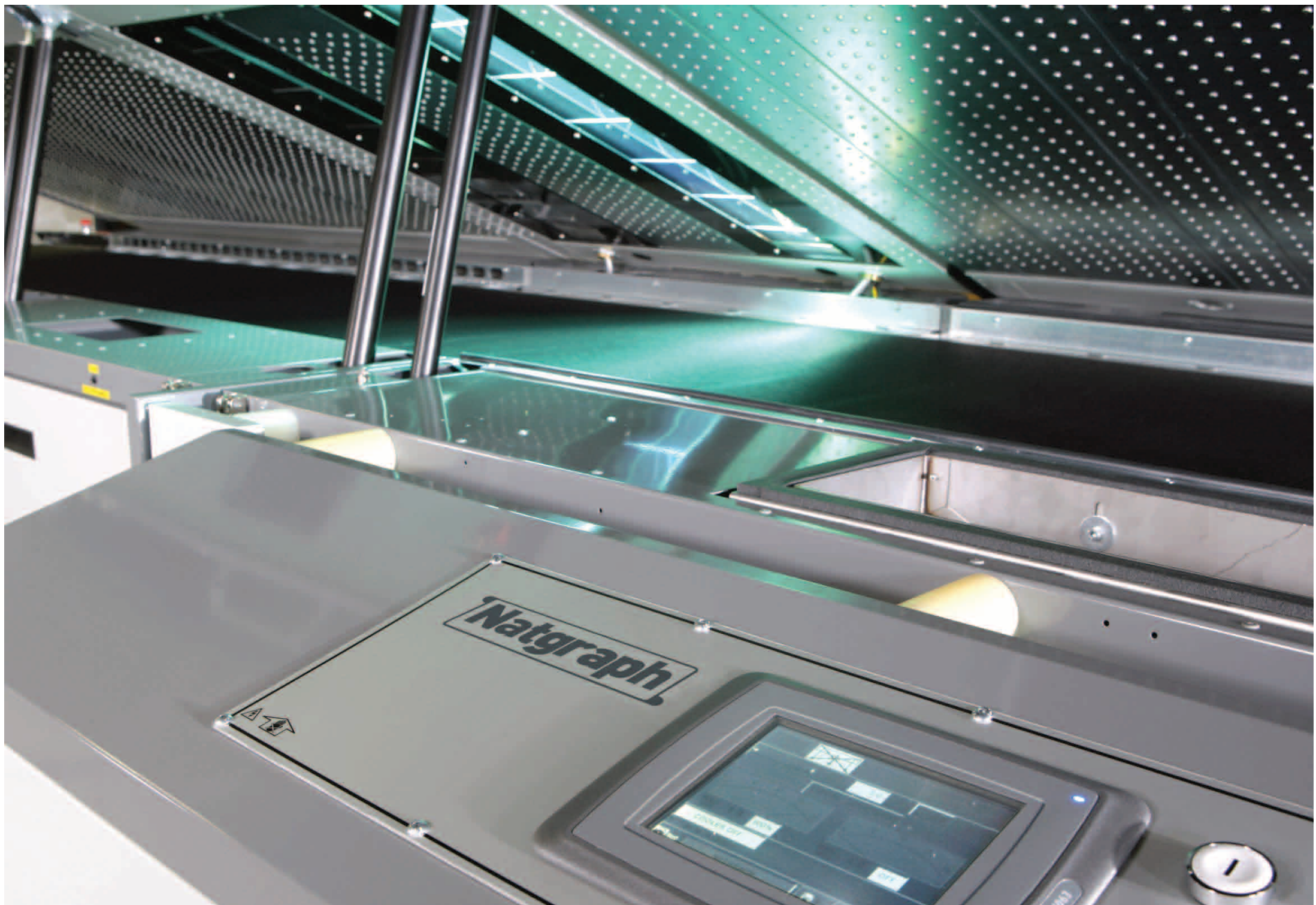


## Air Force UV Combination Dryers

Natgraph manufacture a range of Air Force UV Combination Dryers that has been developed from many years of experience gained in the design and production of over 400 Combined Forced Air and Ultra Violet Conveyorised Systems, in daily use world-wide. These versatile dryers have the ability to dry both solvent based inks and Ultra Violet curing inks in the same unit.

These dryers have been designed, developed and manufactured for drying surface coatings applied to graphics, glass, telecommunications, automotive and electronics etc. If there is a UV ink available for the application, Natgraph will have a solution.

With 7 standard belt widths, Touch Screen PLC Control System, 4 layouts, UV lamp systems with 1 or 2 lamps and modular design, this range of dryers is extremely adaptable, versatile and efficient.



## Air Force UV Combination Dryers

The Natgraph modular range of Air Force Dryers is available in 7 belt widths from 90cm through to 215cm and is also available with a combination of forced air for solvent based inks and Ultra Violet lamps for curing UV inks. These versions of Natgraph's world famous Air Force Dryers have all the same features and build quality as a standard unit, but with the added versatility of forced air and UV curing within the same dryer.

The inclusion of a UV curing capability does not extend the length of an Air Force Dryer, as the UV lamp system is incorporated within the 2m cooler module, making it into a UV cooler module. This module is completely self contained, with all transformers, cooling/extraction fans, control circuitry, etc. inside. 1 or 2 lamps can be installed in this module, which has internal gas filled lifting arms to give rapid access to the belt if required. Aluminium lamphouses have fully focused, sectional anodised aluminium reflectors, and a flat quartz infra red filter window located below each lamp.

### Air Force UV Combi Dryer Features

- Touch Screen, PLC Control System with hour meters
- Quartz Infra red heat filter
- Vacuum hold-down system
- High efficiency fully focused reflectors
- Gas filled lifting arms on the hood
- P.T.F.E fibre glass belt
- Modular construction
- Castors & jacking feet
- Colour coded to industry standards
- Optional ozone filter
- Available in 7 sizes



### Options

**1m UV Module:** A 1m UV Module is also available, having all of the above mentioned features with the exception of the 1m cooling zone. In this instance a twin lamphouse, containing 2 lamps with fully focussed reflectors is fitted because of the available space. When UV is required to be fitted to an existing Air Dryer, even on other manufacturers units, the 1m UV Module can be used. These modules can also be added to existing Air Force Dryers at a later date.

**Intelligent UV Control System:** To ensure safe and efficient operation, all gases emitted from the ink during the drying process are extracted from the dryer, internal extraction ducting is provided within the heating modules, or alternatively a separate evaporation/extraction module can be included.

### Intelligent UV Features

- Compact unit
- Vacuum hold-down
- Ammeter/hour meter
- Ozone free lamps
- Lamp height, adjustment
- High power
- Optional stand

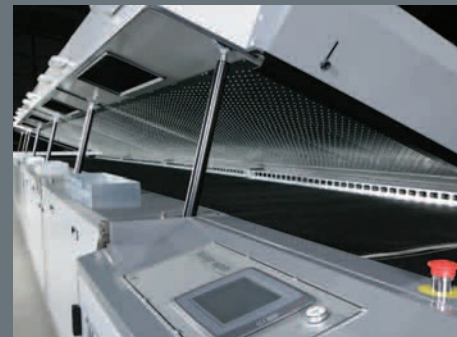
The Natgraph Intelligent UV Control System lowers the cost of operating a Natgraph UV system, reduces the operating temperature and extends the life of the UV curing lamps. A sheet sensor detects when no substrate is present within the dryer and automatically lowers the power level of the lamp(s) to 30%. The cooling system is also adjusted to keep the lamp(s) at the correct running temperature.



Intelligent UV sensor



1m module internals



Gas filled lifting arms on hood



UV with filter system

# Specifications: Air Force UV Combination Dryers

## The following specifications are common to all Air Force Dryers

Belt Height	79cm - 90cm (31" - 37") Adjustable by the feet, higher options available						
Belt Speed	3-50m per minute (10' - 166') Slower speeds are available to order						
Height	114cm - 129cm (45" - 51") Adjustable by the dryer's feet						
Module Length	2m (78")						
Voltage	Three Phase 400V 50Hz.AC						

### These figures apply to individual model sizes.

Model No.	90	110	130	155	170	185	215
Belt / Drying / Curing Width	90cm (36")	110cm (43")	130cm (51")	155cm (61")	170cm (67")	185cm (73")	215cm (84")
Module Width	158cm (62")	178cm (70")	198cm (78")	223cm (88")	238cm (94")	253cm (100")	283cm (112")

(Weights can be confirmed by Natgraph depending upon the size / type and number of modules used.)

## Electrical

Module Type	2m, high pressure, warm (85°C maximum), air modules						
Model No.	90	110	130	155	170	185	215
Heating Elements	18kW	18kW	18kW	24kW	24kW	24kW	24kW
Current (Max. Amps)	26	26	26	34	34	34	34
Motor(s)	2.2kW	3kW	3kW	4kW	4kW	6kW	8kW
Current (Max. Amps)	5	7	7	10	10	14	17

Module Type	2m, high pressure, cold (ambient), air modules						
Model No.	90	110	130	155	170	185	215
Motor(s)	2.2kW	3kW	3kW	4kW	4kW	6kW	8kW
Current (Max. Amps)	5	7	7	10	10	14	17

Module Type	2m, 2 lamp UV / cold (ambient), air modules, (UV lamp power 120 watts/cm - 300 watts/inch)						
Model No.	90	110	130	155	170	185	215
Lamp Power	25kW	31kW	36kW	43kW	47kW	51kW	59kW
Current (run) (Amps)	50	60	70	85	95	105	120
Motor(s)	2.2kW	3kW	4kW	4kW	4kW	6kW	8kW
Current (Max. Amps)	5	7	10	10	10	14	17

## Air

Figures are in 1,000m<sup>3</sup>/hour, per 2m module

Model No.	90	110	130	155	170	185	215
Module Type	2m, high pressure, warm (85°C maximum), air modules						
Recirculated Air	6.8	8.2	9.5	11.5	12.6	13.1	15.8
Exhaust Air (adjustable)	1.9	2.1	2.3	2.6	2.5	2.6	2.9

Module Type	2m, high pressure, cold (ambient), air modules						
Intake Air	4.3	5.6	6.7	7.7	8.4	8.9	10.3

Module Type	2m, 2 lamp UV/cold (ambient), air modules						
Intake Air	2.8	3.2	3.8	4	4.3	4.8	5.6
Exhaust Air	2.9	3.4	4	4.2	4.6	5	5.8

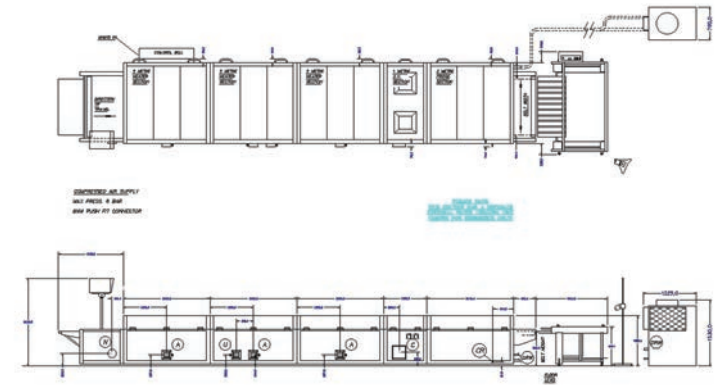
NOTE: When calculating power supply sizes for Air Force Dryers, add all the motor and heating element currents of the modules involved together to give the final figure. For Air Force/UV Combinations, add all the motor currents of the modules involved to the lamp current, but do not include the heating elements. This is because a safety interlock ensures that the air heating elements and UV lamps cannot be used at the same time. The UV lamp currents are calculated with 2 lamps at full power.

Example: Model 110 Air Force Dryer, 2m warm, 2m cold = 26 + 7 + 7 = 40 Amps.,

Model 110 Air Force UV/Combination Dryer, 2m warm, 2m 2 lamp UV cold = 7 + 60 + 7 = 74 Amps.

Typical power consumption of a Model 110 Air Force Dryer, 2m warm, 2m cold, running at 50°C with an ambient temperature of 20°C is 10kW per hour (including all motors), at average U.K. power costings, this represents a running cost of below 70p per hour.

The manufacturer's policy is one of continuous improvement and the manufacturer therefore reserves the right to change or modify the design without prior notice. The technical specifications given are therefore for information only.



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

t +44 (0) 115 97 95 800

f +44 (0) 115 97 95 700

e [info@natgraph.co.uk](mailto:info@natgraph.co.uk)

Natgraph Ltd,  
Dabell Avenue,  
Blenheim Industrial Estate,  
Nottingham, NG6 8WA, UK