

UV rays drying ovens



PHOTO ELECTRONICS



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U. V. CURING EQUIPMENTS

UV OVENS

Photo Electronics operates in the drying ovens sector, and today we are one of the leading companies in **UV technology for stone**.

Photo Electronics produces a vast range of **UV ovens for drying and hardening single-component mastics, resins and fillers**, using the very latest technology and solutions. Single-component products are often used to fill and finish materials; these products harden under the Ultra-violet rays emitted by special lamps.

Photo Electronics uses **high emission lamps in its UV ovens**, to exploit the advantages of single-component products in the best possible way.

PURPOSE OF THE SYSTEM

To harden single-component UV mastics and fillers used on natural marble or agglomerates before polishing.

The Photo Electronics UV ovens guarantee high productivity; they are very versatile, safe and provide the maximum energy savings.

THE FILLING PROCESS

This process eliminates the surface faults in soft and porous stone materials using special single-component mastics or fillers. The single-component product doesn't need an hardener.

The raw material is loaded on the line to be dried and heated, then the single-component mastic is applied. The product is applied by hand using spatulas or with automatic batching and application systems.

Then the material moves forwards on the roller conveyor and goes into the UV oven, where the **hardening process takes just 30/40 seconds**.

After going through the oven the material has fully hardened and **can be polished immediately, without having to wait**.



The fillers harden in line, rapidly and without wasting time.

Photo Electronics ovens are highly efficient and productive!



UV oven model UV22M20
The Oven is independent of the conveyor system and can be installed in existing lines.

THE UV FUNCTIONAL PRINCIPLE

The single-component mastic **isn't hardened by exposure to heat**, but with invisible electromagnetic waves called UV rays, generated by special UV lamps.

The mastic applied on the surfaces of the raw material only hardens when the UV rays irradiate the surface and penetrate into the material.

Before going into the oven, the mastic remains in a liquid, semisolid or solid state just as it was in the tin, and **can be worked and moulded at ease by the operator**.

The temperature of the environment and the material has no effect on the hardening.

Then the material goes into the UV oven for "UV Curing". During this process, **the product starts to harden rapidly and the process takes just 30/40 seconds**.

When the material comes out of the UV oven, the fully hardened surfaces can be polished immediately.

The single-component UV product doesn't require an hardener.

The product hardens in just 30 seconds.

UV ovens are extremely compact and can be installed in existing lines.

COMPOSITION OF THE OVEN SYSTEM

The Oven consists of a steel tunnel containing: the UV lamps complete with reflectors, the fumes extraction system, various screens and sheet steel covers reaching the ground.

An electrical board (specific) lets the user manage the oven.

The Oven is independent of the conveyor system. In fact, it is **designed to adapt to any kind of roller conveyor or rack** and can be moved or fixed.



EFFICIENCY/PRODUCTIVITY

The **hardening time** of the UV single-component mastic is **just 40 seconds**.

Single-component mastics are ideal for automatic batching and application systems because they **don't harden on the spatulas or in the injectors**.

Deep hardening depth thanks to the high-pressure lamps used with high UV ray emission. The power output of each lamp can be regulated from 2000 to 5000 Watts.

When the material comes out of the oven the surface can immediately be polished without having to wait.

VERSATILITY

The UV mastic doesn't need to be mixed with reagents or catalysers, the product is ready-for-use straight out of the tin.

The mastic applied on the material remains in the liquid or semisolid state just as it was in the tin, so **you can mould and work on the material at ease without the product hardening**.

The hardening only starts when the material goes into the oven, not before.

The temperature of the environment or the material has no effect on the hardening.

After polishing, single-component UV mastics produce a **much brighter finish** than bi-component mastics.

When the line is stopped, the material in the oven doesn't overheat because the oven output is turned down automatically.

The **homogeneous hardening of the surface** is guaranteed by the aluminium reflectors that optimize and diffuse the rays over the material.

The output of the oven can be adjusted to suit the feed speed. In this way, no energy is wasted and only the energy strictly required is used.

Photo Electronics **UV ovens are extremely compact** so they can be installed on existing polishing lines.

The control panel on the oven lets you: turn each single lamp on/off, monitor the duration with a counter, check the machine functions properly and any anomalies.

The **integrated extraction system** pumps out any chemical fumes.



SAFETY

Single-component products produce **lower emissions of Volatile Organic Compounds (VOC)**. The fast hardening creates a barrier against solvent evaporation.

Photo Electronics ovens are fitted with all the screens and covers necessary to protect the work environment from UV rays.

Safety first - always.

Using ovens with UV lamps means a drastic reduction in energy consumption and solvent emissions.

ENERGY SAVINGS

Using single-component mastics saves electrical energy. A **UV oven consumes 20% - 40% less power than an electric IR oven** (considerable energy savings)

The UV oven lets you **reduce energy consumption during the production cycle**. In fact, when the line stops the oven switches to low power mode (60% lower energy consumption). The next time the line starts the oven switches to 100% output immediately.

UV OVEN LIST DESIGNED FOR STONE INDUSTRY

Lamps installed: type Metal-Halide High Pressure 2000/5000W

OVEN MODEL	Max. Conveyor Speed (mt/min.)	Oven Length (mm)	Working Width (mm)	Lamp Units Installed	Total Lamps Power	3-phase Power Required (Kw)
UV65M10	1	1350	Tiles 650	1	5 Kw	5
UV65M20	2	2100	Tiles 650	2	10 Kw	9
UV65M30	3	2300	Tiles 650	3	15 Kw	9
UV65M40	4	2820	Tiles 650	4	20 Kw	14
UV65M60	6	3980	Tiles 650	6	30 Kw	18
UV65M90	9	5670	Tiles 650	9	45 Kw	27
UV12M10	1	1400	Slabs 1250	2	10 Kw	9
UV12M20	2	2200	Slabs 1250	4	20 Kw	14
UV12M30	3	3000	Slabs 1250	6	30 Kw	18
UV12M40	4	3800	Slabs 1250	8	40 Kw	27
UV12M50	5	4600	Slabs 1250	10	50 Kw	36
UV16M10	1,2	1400	Slabs 1650	3	15 Kw	10
UV16M20	2,4	2200	Slabs 1650	6	30 Kw	18
UV16M30	3,6	3000	Slabs 1650	9	45 Kw	27
UV16M40	4,8	3800	Slabs 1650	12	60 Kw	36
UVG22M10	UV resin pinning gelification	1000	Slabs 2200 Oven for double filling treatment	4	14Kw Elec. Power Supply	14
UV22M10	1,2	1400	Slabs 2200	4	20 Kw	14
UV22M20	2,4	2200	Slabs 2200	8	40 Kw	27
UV22M30	3,6	3000	Slabs 2200	12	60 Kw	36
UV22M40	4,8	3800	Slabs 2200	16	80 Kw	50