

April 2020

Color Lab



Training

Strictly confidential



Introduction

The Color Lab is a machine intended for laboratories and can be used for the production of color samples in variable volume between 100 ml and 1 Lt.

The machine is equipped with 16 colorants dispensing circuits and up to 4 bases or semi-finished products that can be housed inside from the bottom.

Color Lab



Description of the machine



Main elements:

Furniture

Color groups

Electrical panel

Support arm color sample

Humidifier

Basic or semi-finished circuits

Autocap

Software

Color Lab



It's divided into two parts:

Upper part
colorants Groups
Autocap

Humidifier

Solenoid valves bases or semi-
finished electric components.

Lower part

Base or semi-finished canisters

Coloring Groups



The machine can hold up to 16 coloring groups.

The circuits, all identical to each other, are fixed to the colorant level by means of a knob, screwed under the level, and are directed to a single supply center (nozzle center). They are electrically connected to the machine by means of a single connector located at the rear of the group. Each group has a 1.5 liter canister and is equipped with its own colorant reserve alarm system.

Coloring Group



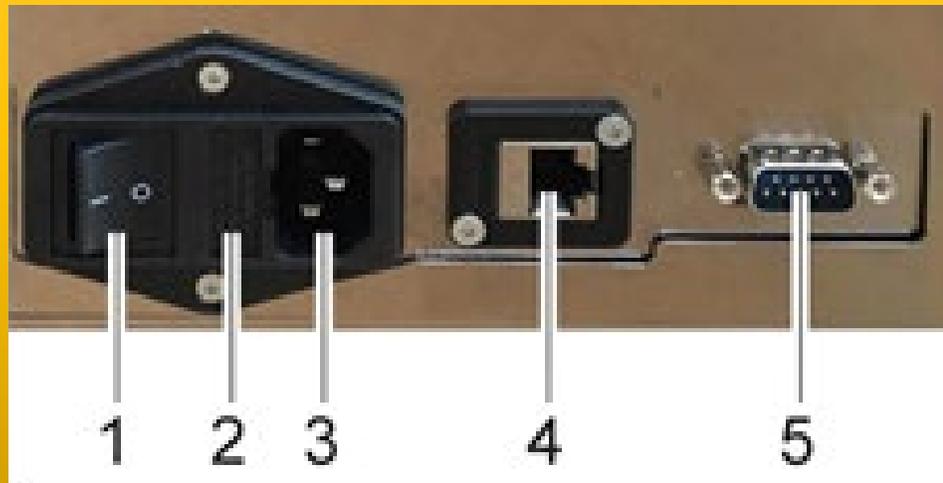
Each coloring group is removable, which makes maintenance and change easier if there is a problem.

The software allows to deactivate the circuit so the machine continues working.

Minimum drop 0,0077cc

Electric Pannel

It is located at the back of the machine where the main electrical connections of the system are housed.



Power switch

1. Fuse port 5x20mm T4A 250Vac
2. Standard 100-240Vac
3. CT-120 socket
4. RJ45 Ethernet socket
5. RS-232 socket (for scale)

Can support arm



The machine produces variable volume color samples of 100 cc to 1 liter.

The support arm (1) can be placed at different heights to allow the accommodation of containers of adequate volume, in relation to the quantities to be supplied.

The handle allows easy removal and correct positioning of the container in the delivery position.

Humidifier



It is located on the left side of the Lab, with an access window for filling the water tank.

Its purpose is to produce steam inside the autocap to keep the nozzle humidified.

It works with the autocap closed and open, preventing or reducing the drying of the products in the terminal parts of the nozzle.

Steam supply

Operating ranges

The machine periodically operates the humidifier according to the times preset and programmed in the factory or customized; as shown in the table below:

Time in seconds	Autocap closed	Autocap open
Steam supply	4	2
Reapetibility interval	600	30

Application examples

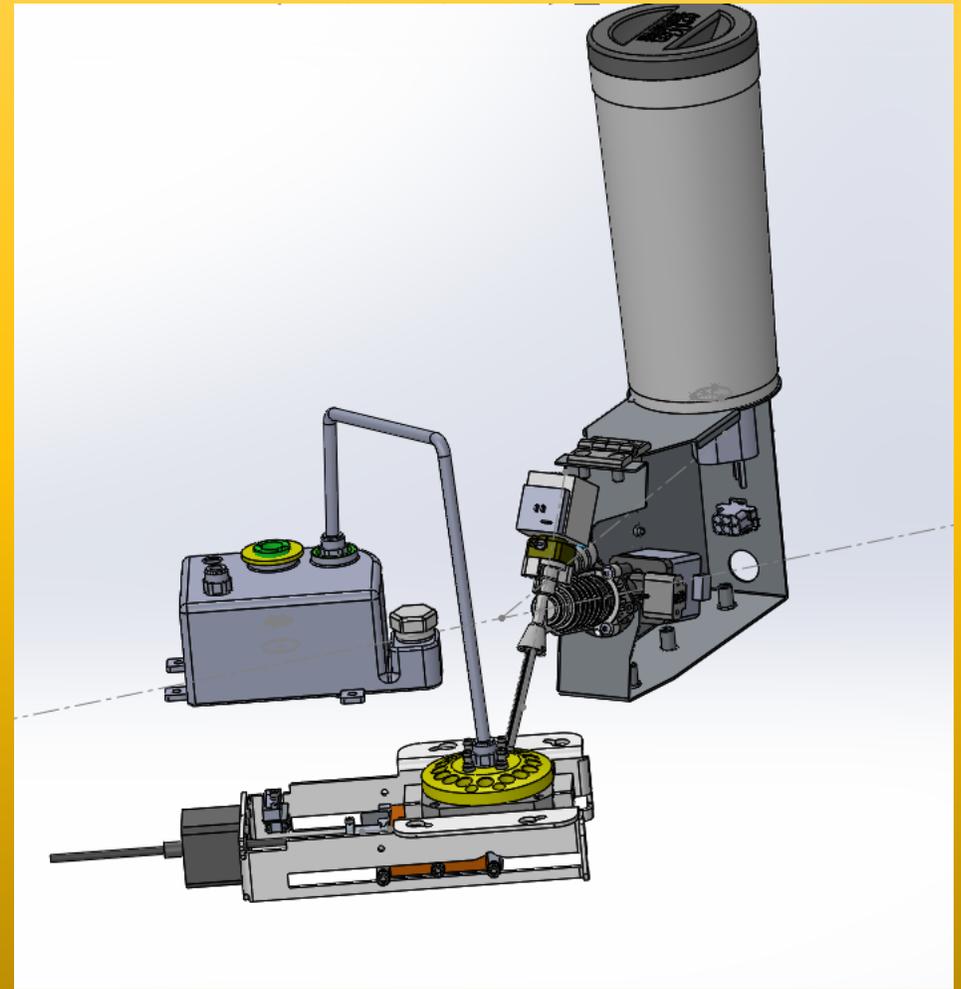
The moisture outlet tube is connected to the nozzle center.

When the lid is closed, moisture is pumped into the base of the work cycle to maintain a high level of moisture in accordance with: Humidity and ambient temperature and the parameters the humidifier was set to.

When the lid is open, the humidity is pumped on a continuous basis.

The humidity is lighter than the ambient air and keeps the humidity level high in the open area of the nozzle.

This prevents drying of products not involved in formula dosing.



Technical Data

Experimental water consumption:

Open lid 25 ° C

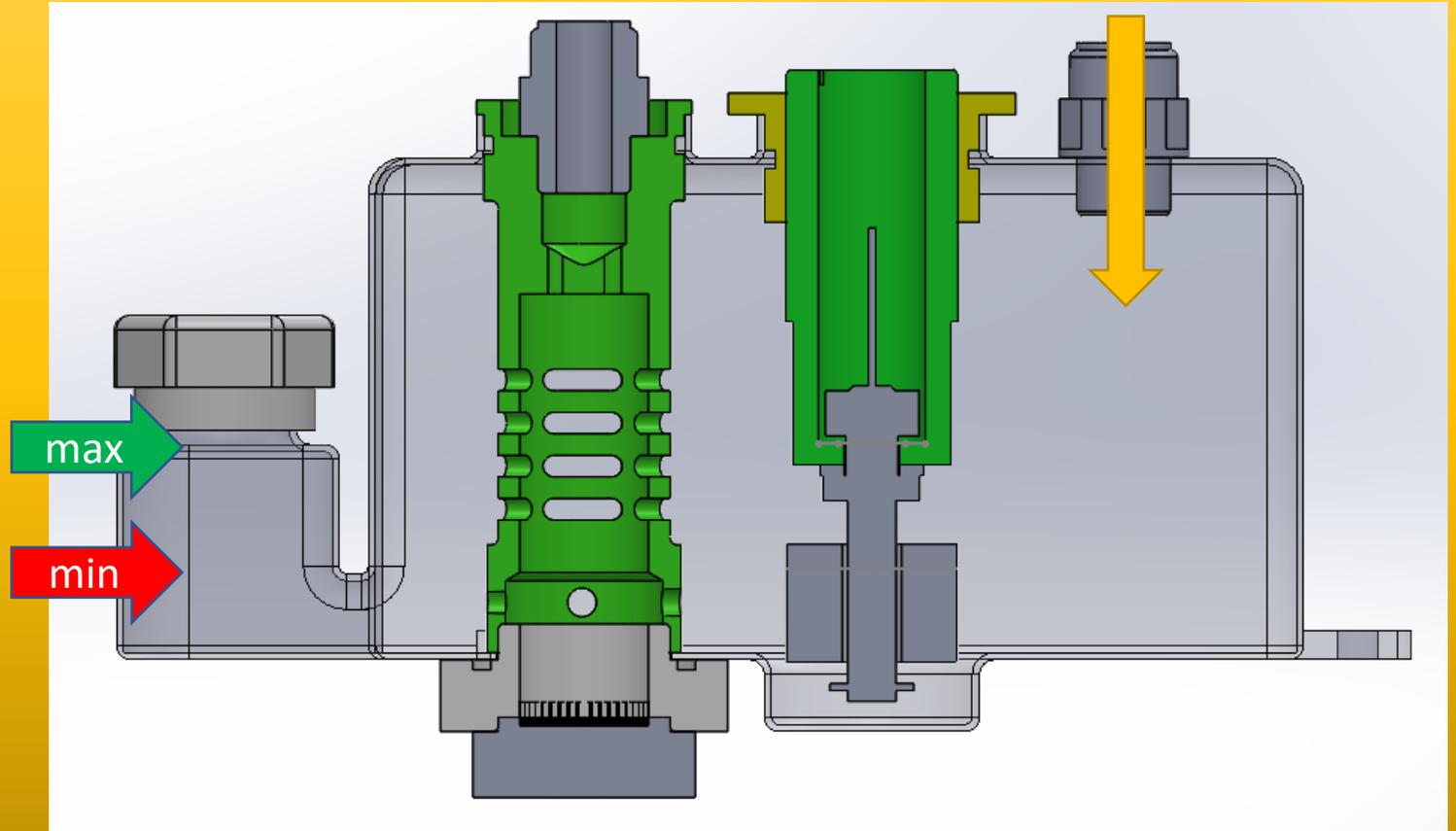
Continuous operation:

10 cc / hour

Hours before refilling 270 cc / 10 cc ora = 27 ore

Under operational conditions, it will be necessary to fill in every 20 to 30 days.

(Experimental data from our laboratory)



Advantages of the ultrasonic wave generator

This solution is represented by the air bubble generator in hot water:

The ultrasonic generator works with water at room temperature, avoiding drainage at the nozzle when the hot water comes back in contact with the room temperature.

The efficiency is much higher.

With ultrasound the water molecules are broken directly generating humidity.

As with water molecules, bacteria and algae molecules are also broken down and killed.

Removable trolley for base or semi-finished tanks



The cabinet can hold 2 trolleys capable of holding up to 4 22-litre stainless steel tanks (1) suitable for holding bases or semi-finished products.

The trolleys are equipped with wheels and handles (2) to facilitate the extraction of the furniture and the filling of the circuits.

Removable trolley for base or semi-finished product tanks



1

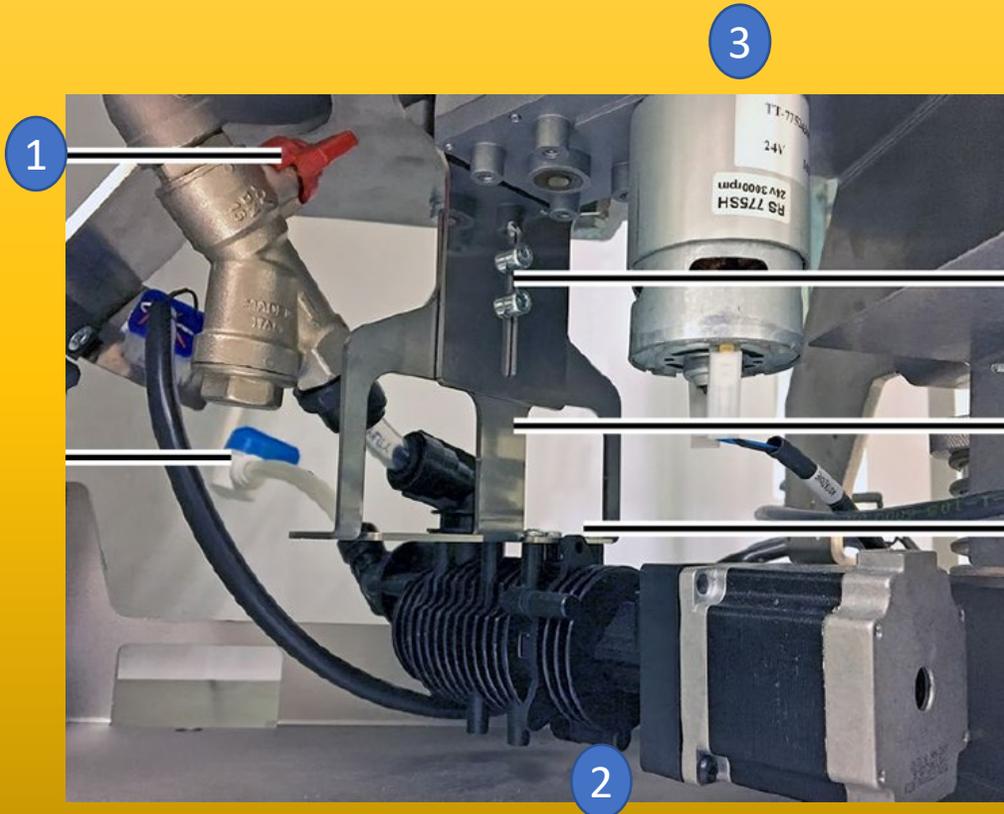
2

3

4

The default circuit layout.
(front view right slide B1,B2, left
slide B3,B4)

Base or semi-finished tanks



Each tank is fixed to a support where a tap with filter(1) is fixed the pumping system of 02ml/min(2), agitation motor(3).

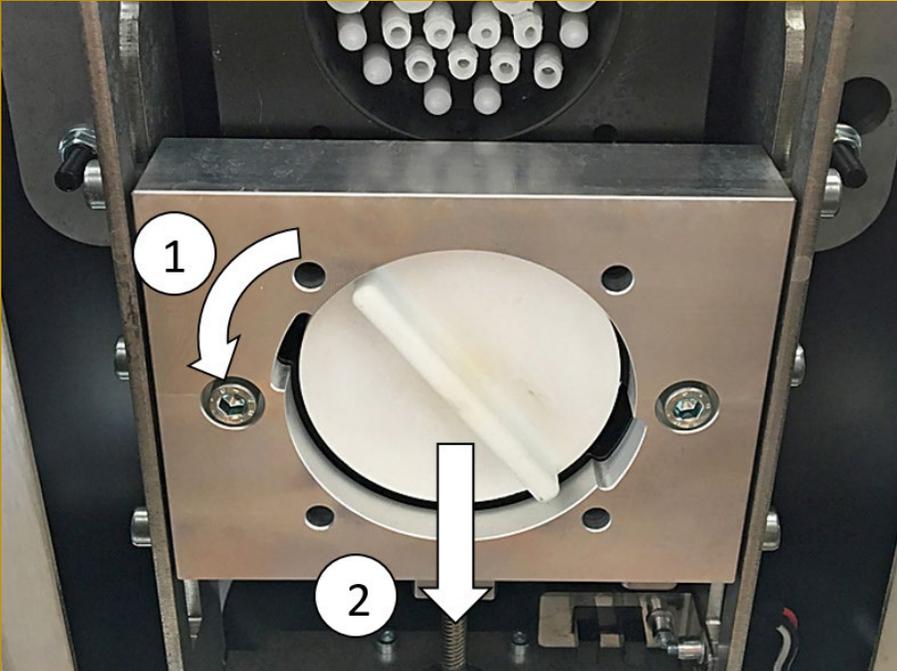
Minimum drop 0,038cc

Autocap



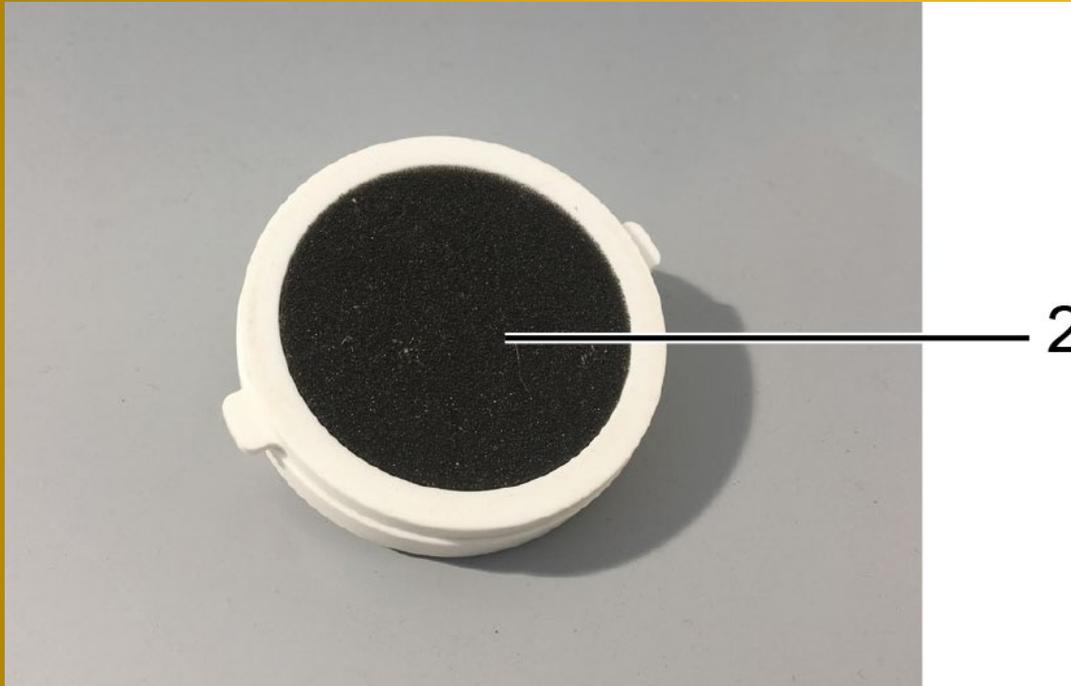
The autocap (1) is located at the bottom of the colorants level.

Autocap



When the software commands a dispensation the autocap opens(2) at The end is closed by keeping the Nozzles with no air contact. Removable cap (1).

Autocap



2 Autocap sponge cap(2)

Alfa Tint Admin

The screenshot displays the Alfa Tint Admin web interface. The top navigation bar includes the title 'AlfaDesk Admin', the date 'Martedì, 18th Ottobre 2016 17:27', and user information 'Benvenuto, alfaDesk'. The main content area is titled 'Pagina iniziale > Amministrazione sito' and features a search bar. A left sidebar contains navigation options: 'Pagina iniziale', 'Amministrazione', 'Customizations', 'Recipes', 'Local data', 'Cloud', 'APIs', 'Api', and 'Cloud'. The main panel is divided into three sections: 'Pipes', 'Dispensations', and 'Machine'. The 'Pipes' section contains a table with 12 rows of pipe data. The 'Dispensations' section contains a table with 5 rows of dispensation data. The 'Machine' section on the right shows the status 'STANDBY Ready' and various control buttons like 'Warm Reset', 'Cold Reset', 'Diagnostic Mode', 'Autopurge', 'Autocap', 'Can presence', 'Can lifter', and 'Door'.

Pipe	Index	Pigmento	Current level [cc]	Min/max [cc]	Status flags
C1	8	BK Negro	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C2	9	BL Azul	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C3	10	FR Rojo Organico	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C4	11	GR Verde	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C5	12	HX Amarillo Cub	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C6	13	MG Magenta	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C7	14	RD Rojo Oxido	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C8	15	SO Naranja Std	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C9	16	SX Amarillo Std	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C10	17	UR Tierra Sombra	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C11	18	VH Blanco	3000.00	600 / 3000	🔄 ⚙️ 🗑️
C12	19	XO Amarillo Oxido	3000.00	600 / 3000	🔄 ⚙️ 🗑️

Dispensation	Date modified	Description	Recipe	Type	Status	Package	Size
c312e594-8f88-469b-9815-bc3451db95b65	12/10/2016 14:19	test-manuale	None	custom	saved	100ml	100,000000
3ec26962-2e25-4b53-8053-72abaf3395ec	07/10/2016 10:36		None	custom	completed	1-l	1000,000000
be17a315-71c8-4276-a9e0-a25c21f0b7f0	07/10/2016 10:35	test 07	None	custom	saved	1-l	1000,000000
f9ab22d0-7a1d-48a4-9beb-a33de0a355b0	07/10/2016 10:35	Copy of Abismo 206-01	None	custom	saved	1-l	1000,000000
d6335925-ea5f-4256-bfb3-4af1d72a8cfa	07/10/2016 10:34		None	custom	completed	1-l	1000,000000

The software is integrated in the Linux card, you only need a computer with a Google Chrome browser, connecting the ethernet cable between the machine and the PC.

The IP address 192.168.0.100/admin will be entered for access.

It is used to perform installation, calibration, loading formulas.

Alfa Tint

The software is used to dispense the formulas, perform purging, recirculation agitation, dye filling, i.e. for daily laboratory work.

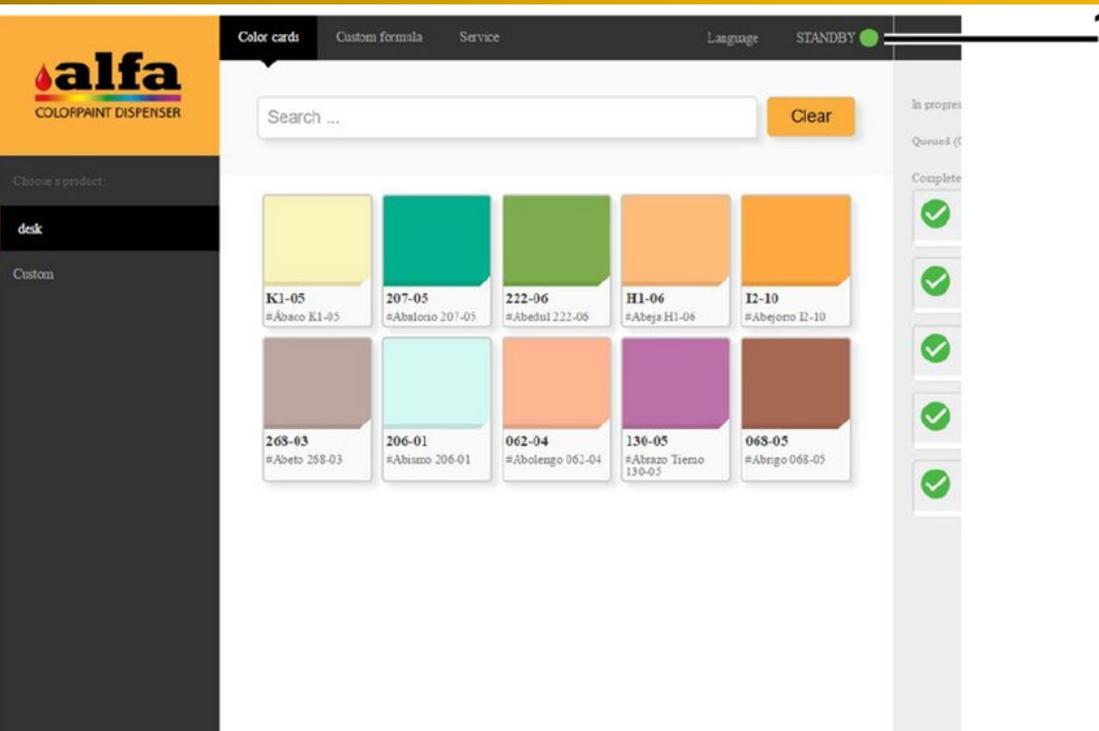
The screenshot displays the Alfa Tint software interface. At the top, there are navigation tabs: "Color cards", "Custom formula", and "Service" (which is selected). To the right, it shows "Language" and "STANDBY" with a green indicator. Below the tabs, there are several control buttons: "Purge", "Warm Reset", "Cold Reset", "Diagnostic Mode", "Open autocap", and "Close autocap". The main area contains a table with 12 rows of pigment data. Each row includes a name, a color swatch, the pigment name, an index, a current level, an "Add [cc]" field with a minus sign, a "Min/Max [cc]" range, and a "Flags" column with "Purge" and "Recirculation" icons.

Name	Pigment	Index	Current level	Add [cc] ...	Min/Max [cc]	Flags
C1	BK Negro	8	809	0 -	500 / 3000	Purge
C2	BL Azul	9	2998	0 -	500 / 3000	Purge
C3	FR Rojo Organico	10	2980	0 -	500 / 3000	Purge
C4	GR Verde	11	2865	0 -	500 / 3000	Purge
C5	HX Amarillo Cub	12	2994	0 -	500 / 3000	Purge
C6	MG Magenta	13	3000	0 -	500 / 3000	Purge
C7	RD Rojo Oxido	14	3000	0 -	500 / 3000	Purge
C8	SO Naranja Std	15	2998	0 -	500 / 3000	Purge
C9	SX Amarillo Std	16	2491	0 -	500 / 3000	Purge
C10	UR Tierra Sombra	17	3000	0 -	500 / 3000	Purge
C11	WH Blanco	18	2719	0 -	500 / 3000	Purge
C12	XO Amarillo Oxido	19	2950	0 -	500 / 3000	Purge

Alfa Tint

Visualization of the formulas in the Alpha Tint. Color cards.

1. Green standby symbol



Stand-by

The machine during stand-by performs activities necessary for the maintenance of the correct functioning of the system. These functions are as follows:

Agitation of colorants

Agitation of bases

Recirculation of bases

Recirculation of colorants

Agitation and recirculation of products

Las funciones de agitación y recirculación de los productos se producen de forma cíclica en todos los circuitos con intervalos periódicos programables a través del software.

Los valores predeterminados de las variables duración y pausa de cada función se reproducen en la siguiente tabla:

	Agitation	Recirculation
Colorantes	30" each 30'	1' each 30'
Bases o semielaborados	30" each 30'	1' each 30'

Dispensing process cycle

Once the color selection has been made and the start of production control has been activated, the machine checks the presence of the container under the nozzle centre, and then carries out the following work phases:

- Autocap opening
- Paint supply
- Autocap closure
- Return on standby

NOTE: The machine does not control that the container is of adequate capacity for the amount to be dispensed.

Production capacity and technical specifications

net capacity colour sample	De 100ml (0,4 fl oz) a 1l (4 fl oz)
Minimum canister dimensions	Diám 69 mm h 69mm
Colorant canister capacity	1.5 lt
Stainless steel canister capacity	22 lt
Max. number of colorant circuits	16
Max. number of semi-finished circuits	4
Types of colours that can be used	Water and solvent
Colours that can be supplied	Infinity
Semi-finished products	0,28 lt/min
Caudal colorants	0,076 lt/min
Minimum quantity that can be supplied	1/2304 fl oz (0.012 cc)
Filter semi-finished	0,8 mm
Filter colorants	0,9 mm
Dispensing type	Simultaneously
Productivity (*)	100cc en 35 seconds

Mini Mixer



The Minimixer has been created to mix 100cc paint samples manufactured by the Color Tester Alfa or by the Color Lab. It is designed to be used exclusively with approved cans and lids. Mix 3 samples at the same time.

Mini Mixer



The duration of the stirring cycle is factory set and can be as long as

30 seconds

45 seconds

60 seconds

90 seconds

This time interval cannot be changed by the user but only by expert technical personnel.

Production capacity and technical specifications

Production capacity	Up to 3 100 cc cans with times of 30, 45, 60 or 90 seconds agitation
Height	450 mm (± 15mm)
Width	480 mm
Depth	480 mm
Unloaded weight	60 Kg