

Mobile Protection Unit (MPU)

User Manual



Edition Notes

The Mobile Protection Unit User Manual includes a description, safety precautions, installation, programming, operation and maintenance instructions for the Clearify X as of the release date of this edition.

Trademarks

CLEARIFY, the Clearify logo, and Clearify X are registered trademarks or trademarks of Chauvet & Sons, LLC (d/b/a Chauvet and Chauvet Lighting) in the United States and other countries. Other company and product names and logos referred to herein may be trademarks of their respective companies.

Copyright Notice

The works of authorship contained in this manual, including, but not limited to, all design, text and images are owned by Grignard Pure LLC.

© Copyright 2021 Grignard Pure LLC. All rights reserved.

Electronically published by Grignard Pure in the United States of America.

Manual Use

Grignard Pure authorizes its customers to download and print this manual for professional information purposes only. Grignard Pure expressly prohibits the usage, copy, storage, distribution, modification, or printing of this manual or its content for any other purpose without written consent from Grignard Pure.

Document Printing

For best results, print this document in color, on letter size paper (8.5 x 11 in), double-sided. If using A4 paper (210 x 297 mm), configure the printer to scale the content accordingly.

Intended Audience

Any person installing, operating, and/or maintaining this product should completely read through the guide that shipped with the product, as well as this manual, before installing, operating, or maintaining this product.

Disclaimer

Grignard Pure believes that the information contained in this manual is accurate in all respects. However, Grignard Pure assumes no responsibility and specifically disclaims any and all liability to any party for any loss, damage or disruption caused by any errors or omissions in this document, whether such errors or omissions result from negligence, accident or any other cause. Grignard Pure reserves the right to revise the content of this document without any obligation to notify any person or company of such revision, however, Grignard Pure has no obligation to make, and does not commit to make, any such revisions. Download the latest version from GPCustomer.com

Document Revision

This Mobile Protection Unit User Manual is the 1st edition of this document. Go to GPCustomer.com for the latest version.

Table of Contents

- 1. BEFORE YOU BEGIN5**
- WHAT IS INCLUDED5**
- CLAIMS.....5**
- TEXT CONVENTIONS.....5**
- SYMBOLS5**
- SAFETY NOTES.....6**
- PERSONAL SAFETY..... 6
- MOUNTING AND RIGGING 6
- POWER AND WIRING..... 6
- OPERATION 6
- 2. INTRODUCTION7**
- DESCRIPTION7
- FEATURES.....7
- REQUIRED AND OPTIONAL ACCESSORIES 7
- PRODUCT OVERVIEW8**
- MPU DIMENSIONS AND LAYOUT8**
- CLEARIFY X (DISPERSION DEVICE) DIMENSIONS AND LAYOUT.....8**
- 3. SETUP.....10**
- AC POWER10**
- AC PLUG 10
- OPERATION MODES10**
- INTERVAL/TIMED STANDALONE10
- SENSOR CONTROLLED /10
- TANK ACCESS11**
- MPU REMOTE RESERVOIR 11
- LOCATING THE MPU.....12**
- ORIENTATION..... 12
- 4. OPERATION13**
- CONTROL PANEL DESCRIPTION13
- CONTROL OPTIONS.....13
- PROGRAMMING13
- MENU MAP.....13
- CONFIGURATION (DMX) FOR SENSOR/CONTROLLER14
- STARTING ADDRESS.....14

MPU USER MANUAL

CONFIGURATION (STANDALONE)	15
TIMER INTERVAL	15
TIMER DURATION	15
OUTPUT MODE	15
VOLUME AND FAN KNOBS	15
CONFIGURATION (SETTINGS)	15
FLUID SENSOR	15
DISPLAY BACKLIGHT	15
BUTTON SOUNDS.....	15
FLUID COUNTER RESET	15
HEATER TEMPERATURE	15
FLUID COUNTER.....	15
ADVANCED SETTINGS	16
ADVANCED SETTINGS MENU MAP	16
EMPTY FLUID WARNING LEVEL (RESERVOIR SIZE)	16
LOW FLUID WARNING LEVEL	16
PRIMING THE PUMP	16
FACTORY RESET	16
<u>5. MAINTENANCE</u>	<u>17</u>
SELF-CLEAN MODE	17
STORAGE	17
POWER SHUTDOWN MODE (STANDBY)	17
<u>6. TECHNICAL SPECIFICATIONS (TO BE UPDATED)</u>	<u>18</u>
<u>RETURNS – SECTION NOT EDITED</u>	<u>19</u>
<u>CONTACT US– SECTION NOT EDITED</u>	<u>19</u>

1. Before You Begin

What Is Included

- MPU Case
- Clarify X
- Integrated fans
- Power cord
- 1 hose and reservoir cap assembly (GP fluid)
- 1 hose and reservoir cap assembly (cleaning solution)
- Quick Reference Guide
- User Manual




Claims

If the box or the contents (the product and included accessories) appear damaged from shipping, or show signs of mishandling, notify the carrier immediately, not Grignard Pure. Failure to report damage to the carrier immediately may invalidate your claim. In addition, keep the box and contents for inspection. For other issues, such as missing components or parts, damage not related to shipping, or concealed damage, file a claim with Grignard Pure within 7 days of delivery.

Text Conventions

Convention	Meaning
1–512	A range of values
50/60	A set of values of which only one can be chosen
Settings	A menu option not to be modified
<ENTER>	A key to be pressed on the product's control panel

Symbols

Symbol	Meaning
	Critical installation, configuration, or operation information. Not following these instructions may make the product not work, cause damage to the product, or cause harm to the operator.
	Important installation or configuration information. The product may not function correctly if this information is not used.
	Useful information.



The term “DMX” used throughout this manual refers to the USITT DMX512-A digital data transmission protocol.

Safety Notes

Read all the following safety notes before working with this product. These notes contain important information about the installation, usage, and maintenance of this product.



This product contains no user-serviceable parts. Any reference to servicing in this User Manual will only apply to properly trained, certified technicians. Do not open the housing or attempt any repairs.



All applicable local codes and regulations apply to proper installation of this product.

Personal Safety

- Always disconnect from power before servicing.
- Do not operate this product if the housing, fluid tank, reservoir hoses, or cables appear damaged.
- Do not use for space heating purposes.
- Do not touch the output nozzle on this product. It is very hot during operation and it may remain hot for several hours after turning the product off.

Mounting and Rigging

- For indoor use only. DO NOT use this product outdoors or expose it to water (IP20).
- Do not leave any flammable material within 50 cm of this product while operating or connected to power.
- Always mount the product in an upright position.

Power and Wiring

- Don't pull or roll the product by the power cord.
- Never disconnect this product from power by pulling on the cord.
- This product designed for use at 120 V, 60 Hz. Do not connect this product to a dimmer or rheostat.
- Only connect this product to a grounded and protected circuit.

Operation

- Only use Grignard Pure Fluid.
- Do not add anything to the fluid.
- Be sure to run the manual cleaning cycle regularly with the approved cleaning solution.
- The maximum ambient temperature is 104 °F (40 °C). Do not operate this product at higher temperatures.
- In the event of a serious operating problem, stop using immediately.
- To eliminate unnecessary wear and improve its lifespan, during periods of non-use set the power switch to the off position, or use the [Power Shutdown Mode \(Standby\)](#).
- CAUTION: When transferring product from extreme temperature environments, (e.g. cold truck to warm humid ballroom) condensation may form on the internal electronics of the product. To avoid causing a failure, allow product to fully acclimate to the surrounding environment before connecting it to power.



If your MPU requires service, contact Grignard Pure Technical Support.

2. Introduction

Description

The MPU is a mobile dispersion unit designed to work with the Grignard Pure air treatment fluid. With an additional 125cfm fan array augmenting the Clarify on-board fan capable of displacing 75 cfm, the MPU can vaporize and disperse up to 4ml/min of Grignard Pure. It features a durable, rugged design to for use in large to small spaces, easily movable in order to optimize the treatment. The output volume and fan speed of the Clarify can be adjusted via DMX/RDM or the manual knobs on the back of the unit. Refer to the SOP on Treating Occupied Space for further direction on placement and dosages. A self-cleaning function is included to run scheduled maintenance using the recommended cleaning solution. A one gallon may be used to make replacement of Grignard Pure and cleaning fluid more convenient.

Features

- Variable output dispersion machine for portable and install applications for use with Grignard Pure (GP) fluid
- Variable output volume and fan control allow the machine to work with a wide range of room sizes
- Low GP fluid alert (triggered when 80% of fluid is depleted based on calculated fluid usage) alerts the user to replace the GP fluid
- Automatic cleaning function for unattended maintenance and a long life of the heating element
- Dual pump design (separate GP fluid and cleaning fluid pumps) enhances performance and reduces maintenance
- Remote GP fluid reservoir to allow longer use without fluid changes. Fluid tanks refillable or swappable for flexible fluid replacement (swappable tanks avoid spillage)
- Timer function allows interval output of the machine
- Manual output volume and fan speed control knobs included for instant control
- Dispersion Fan array for higher dispersion speed
- Multiple operation modes for customization and simplicity

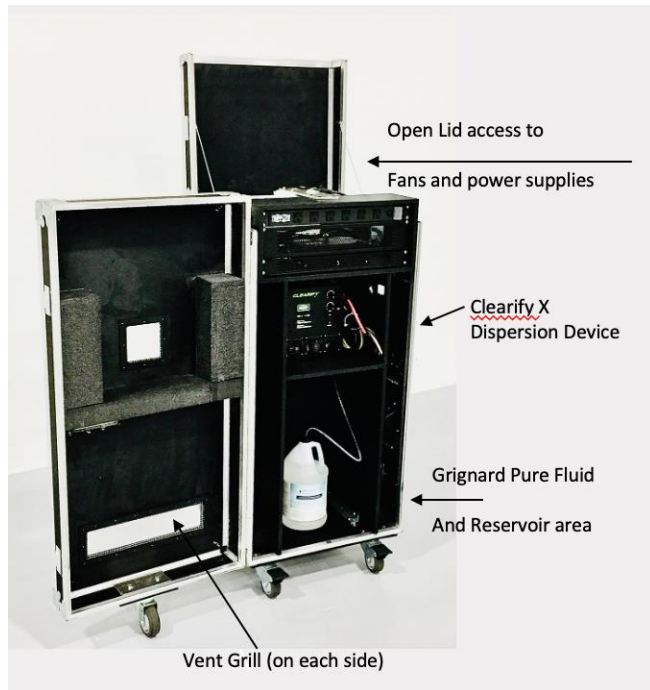
Required and Optional Accessories

- Grignard Pure Fluid
- Grignard Pure Cleaner Quart
- Sensor Control System (SMU/SCU/PSU) (Optional)

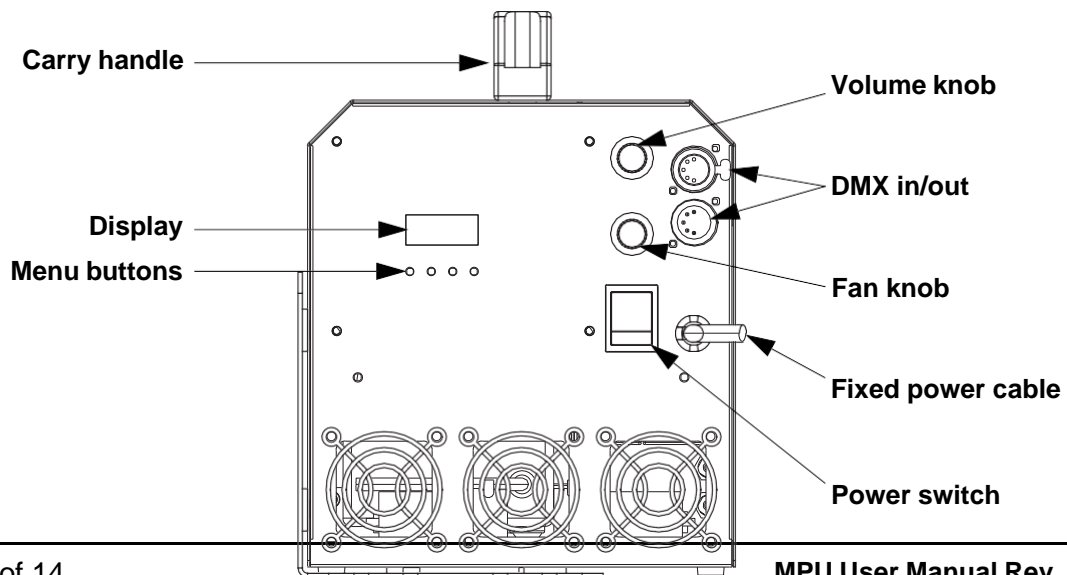
MPU USER MANUAL

Product Overview

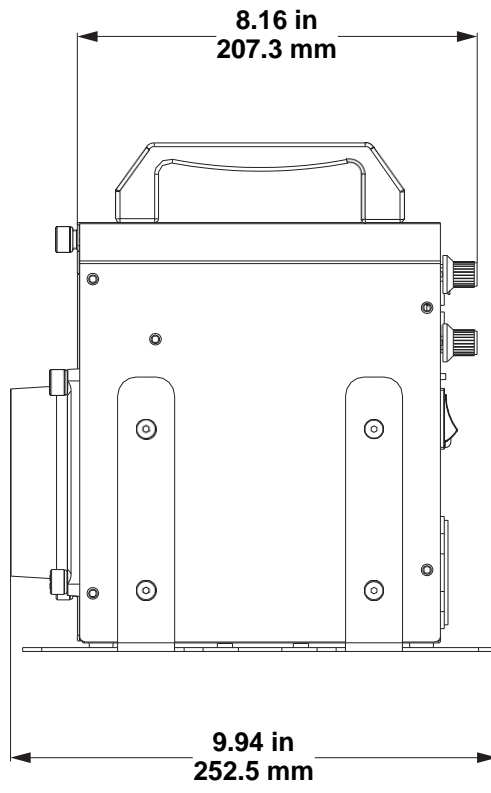
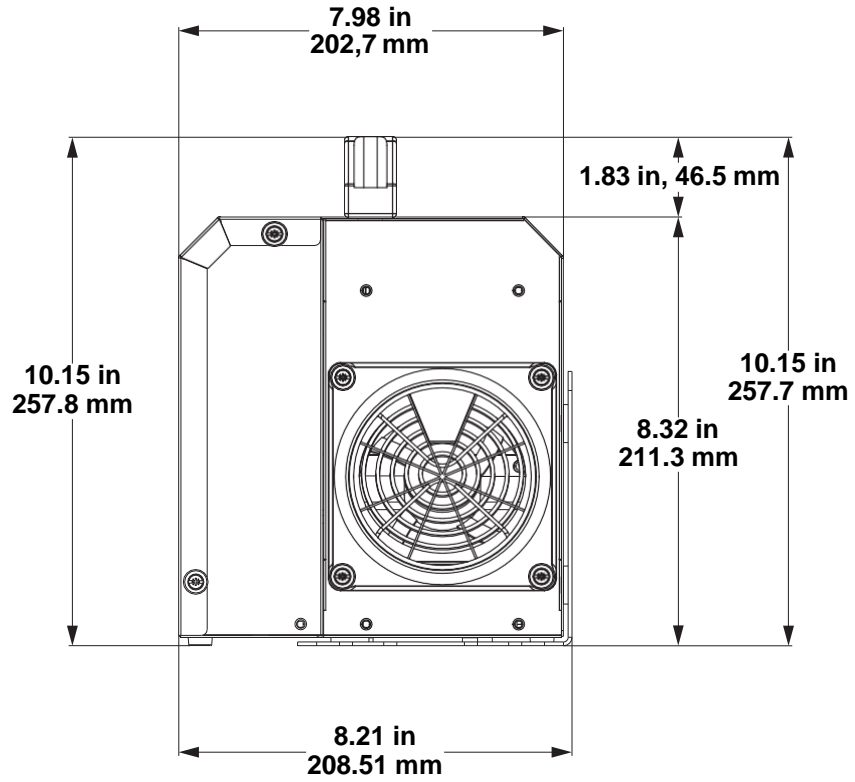
MPU Dimensions and Layout



Clearify X (Dispersion Device) Dimensions and Layout



MPU USER MANUAL



3. Setup

AC Power

The MPU has a fixed-voltage power supply that works with an input voltage of 120 VAC, 60 Hz.

To determine the product's power requirements (circuit breaker, power outlet, and wiring), use the current value listed on the label affixed to the product's back panel, or refer to the product's specifications chart.

The listed current rating indicates the product's average current draw under normal conditions.



- **Always connect the product to a protected circuit (a circuit breaker or fuse). Make sure the product has an appropriate electrical ground to avoid the risk of electrocution or fire.**
- **To eliminate unnecessary wear and improve its lifespan, during periods of non-use set the power switch to the off position, or use the [Power Shutdown Mode \(Standby\)](#).**



Never connect the product to a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel serves only as a 0 to 100% switch.

AC Plug

The MPU comes with a fixed power input cord terminated with an Edison plug on the other end (U.S. market). If the power input cord that came with your product has no plug, or if you need to change the plug, use the table below to wire the new plug.

Connection	Wire (U.S.)	Screw Color
AC Live	Black	Yellow or Brass
AC Neutral	White	Silver
AC Ground	Green/Yellow	Green

Operation Modes

The MPU operates in two modes. The Internal/Timed mode and the Sensor Controlled mode. Each of these modes can be used in various applications, refer to the Grignard Pure document at GPCustomer.com describing Operating Procedures and Forms.

Interval/Timed Standalone

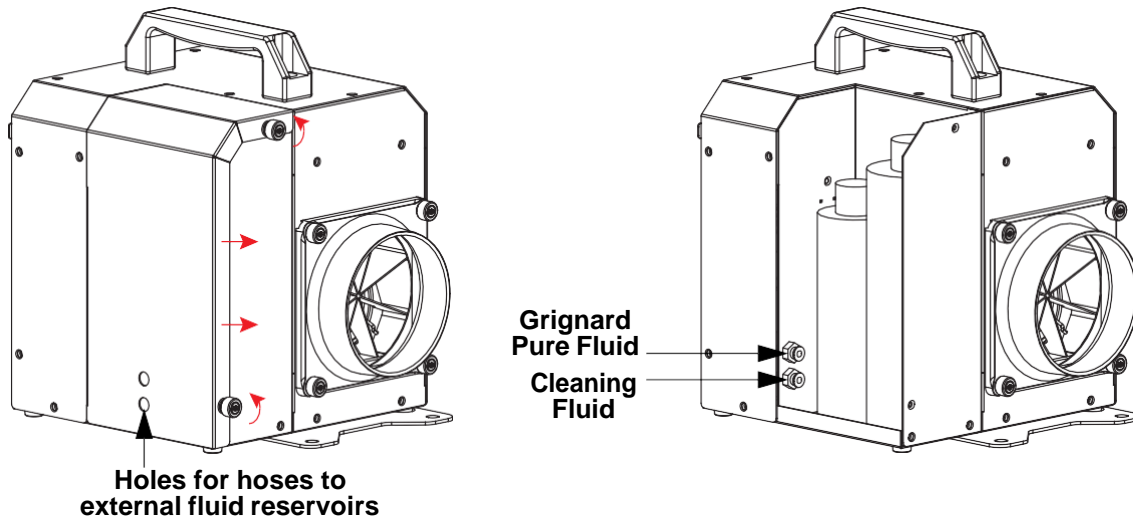
The MPU will operate in a stand alone mode. After reviewing the treatment space and tuning the system based on the local conditions the dispersion device can be set to operate in a cycle of on and off. For example, the area might best be treated with a 20 seconds dispersion (ON) and 2 minutes off (OFF) cycle. The dispersion device is programmable within the variations described in OPERATIONS and MENU MAP section of this user manual. See Configuration (Standalone) section with details further in this User Manual

Sensor Controlled /

The MPU will work with the Grignard Pure sensor and controller system. This system uses a DMX controller using a 5-pin connection. The sensors will communicate with the controller in order to control the dispersion of air treatment.

Tank Access

To access the fluid tanks and hoses, remove 2 thumbscrews and slide the cover off.



MPU Remote Reservoir

The MPU uses a remote reservoir configuration, route the hoses through the holes in the tank cover or remove the tank cover for simplicity.

- For setups with longer hoses leading to external or remote reservoirs, see [Priming the Pump](#).
- To adjust the maximum level of the fluid counter for larger or smaller reservoirs, see [Empty Fluid Warning Level \(Reservoir Size\)](#).

Locating the MPU

The MPU is mobile, its 5 wheels allow for easy mobility. The location of the MPU for a treated room is often a 'trial and error' method – as the ventilation, ingress, egress points are variable across room types and sizes. The wheels allow for easy movement and optimized placement.

Orientation

Always mount this product in an upright and stable position, making sure there is adequate room for ventilation, configuration, and maintenance.

4. Operation

Control Panel Description

Button/Knob	Function
<MENU>	Exits from the current menu or function or cycles through the menu list. Press and hold for 5 seconds: Fluid Reset
<UP>	Navigates upwards through the menu list or increases the numeric value when in a function
<DOWN>	Navigates downwards through the menu list or decreases the numeric value when in a function
<ENTER>	Enables the currently displayed menu or sets the currently selected value into the selected function Press and hold for 5 seconds: Self-Clean
Volume knob	Sets the dispersion volume (fluid consumption), 0–100%
Fan knob	Sets the blower fan speed, 0–100%

Control Options

Set the Clarify X starting address in the 1–510 DMX range. This enables control of up to 170 products in the 3-channel personality.

Programming

Refer to the Menu Map to understand the menu options. The menu map shows the main level and a variable number of programming levels for each option.

- To go to the desired main level, press <MENU> repeatedly until the option shows on the display. Press <ENTER> to return to the home screen.
- To select an option or value within the current programming level, press <UP> or <DOWN> until the option shows on the display. Press <ENTER> to select and return to the home screen.

Menu Map

Refer to the Clarify X product page on www.clearifyair.com for the latest menu map.

Function	Programming Levels		Description
Timer Interval	Interval	30–1800s	Sets the time between dispersions
Timer Duration	Duration	30–1800s	Sets the length of dispersions
Output Mode	Out Mode	Timer	Dispenses on a timer
		Volume	Dispenses manually
DMX Address	DMX512	Add. 1–510	Selects DMX address
Fluid Sensor	Fluid Sensor	On	Enables fluid sensor
		Off	Disables fluid sensor
Display Backlight	Backlite	AlwaysOn	Display backlight always on
		Auto Off	Display backlight turns off after inactivity
Button Sounds	KeySound	On	Enables sound when buttons pressed
		Off	Disables sound when buttons pressed
Reset Counter	Fluid Reset	Proceed?	Press and hold <ENTER> for 3 seconds to reset the fluid counter
Heater Temperature	LiveTemp	___ °C	Displays the temperature of the heater in °C
Fluid Counter	Depleted	__ ml	Displays amount of fluid dispersed in ml

Configuration (DMX) for Sensor/Controller

Use control configurations to operate the product with the Grignard Pure sensor and controller system.

Starting Address

Each product will respond to a unique starting address from the controller. All products with the same starting address will respond in unison. To set the starting address:

1. Go to the **DMX512** level.
2. Select the starting address (**Add. 1–510**).

Control Channel Assignments and Values

3-Channel

Channel	Function	Value	Percent/Setting
1	Fan Speed	000 ⇔ 005	Fan off
		006 ⇔ 255	Fan speed 1–100%
2	Dispersion Volume	000 ⇔ 005	Dispersion off
		006 ⇔ 255	Dispersion volume 1–100% (fluid consumption)

Configuration (Standalone)

Use control configurations to operate the product with the display menu and control panel. The modes are:

- **Timer** mode: dispersion will activate on a timer based on the [Timer Interval](#), [Timer Duration](#), and the [Volume and Fan Knobs](#).
- **Volume** mode: dispersion is controlled manually by the [Volume and Fan Knobs](#).

Timer Interval

To set the time (in seconds) between dispersions in **Timer** mode:

1. Go to the **Interval** level.
2. Increase or decrease the interval from **30–1800s**.



- **Below 90 seconds, the Interval can be set in 10-second increments.**
- **Above 90 seconds, the Interval can be set in 30-second increments.**

Timer Duration

To set the duration (in seconds) of each dispersion in **Timer** mode:

1. Go to the **Duration** level.
2. Increase or decrease the duration from **30–1800s**.



- **Below 90 seconds, the Duration can be set in 10-second increments.**
- **Above 90 seconds, the Duration can be set in 30-second increments.**

Output Mode

To toggle between **Timer** mode and **Volume** mode:

1. Go to the **Out Mode** level.
2. Select from **Timer** (timer mode) or **Volume** (manual control mode).

Volume and Fan Knobs

To control the dispersion without a controller, turn the **<Volume>** and **<Fan>** knobs clockwise or counter-clockwise until the product is set as desired (0–100%).

Configuration (Settings)

Fluid Sensor

The fluid sensor prevents damage by detecting if there is fluid in the hose line. To enable or disable the fluid sensor:

1. Go to the **Fluid Sensor** level.
2. Select from **On** (pump will stop after too long with no fluid) or **Off** (pump will not stop).



For setups with external or remote reservoirs, see [Priming the Pump](#) to ensure the fluid sensor works correctly.

Display Backlight

To enable or disable the display backlight timeout:

1. Go to the **Backlite** level.
2. Select from **AlwaysOn** (display backlight always on) or **Auto Off** (backlight turns off after inactivity).

Button Sounds

To enable or disable the button press sound effect:

1. Go to the **KeySound** level.
2. Select from **On** (pressing a button produces a tone) or **Off** (disables the function).

Fluid Counter Reset

Always perform a fluid counter reset after refilling or replacing the fluid reservoirs.

1. Go to the **Fluid Reset** level.
2. Press and hold **<ENTER>** for 3 seconds.

Alternatively, press and hold **<MENU>** for 5 seconds to reset the fluid counter.

Heater Temperature

To view the current temperature of the heater, go to the **LiveTemp** level.



To adjust the temperature of the heater, see the [Advanced Settings](#). Do so with extreme caution!

Fluid Counter

To view the amount of fluid dispersed since the last reset, go to the Depleted level. Each time the fluid reservoirs are refilled or replaced, perform a [Fluid Counter Reset](#).



To adjust the maximum level of the fluid counter for larger or smaller reservoirs, see [Empty Fluid Warning Level \(Reservoir Size\)](#).

Advanced Settings

The advanced settings menu includes several options which adjust the function of the product for customized setups. To access the advanced settings:

1. Set the power switch to the off position.
2. Press and hold **<MENU>** while setting the power switch to the on position.
3. Hold **<MENU>** for 3 seconds, until **MFG Set** appears on the display.
4. Enter the passcode **7896**:
 - Use **<UP>** and **<DOWN>** to increase or decrease the selected digit.
 - Use **<ENTER>** to go to the next digit, and to enter the code when finished.

Advanced Settings Menu Map

Refer to the Clearify X product page on www.clearifyair.com for the latest advanced settings menu map.

Function	Programming Levels		Description
Serial ID	SerialID	1–65500	Sets the product's Serial ID. Do not alter! This relates only to the RDM function.
Heater Temp.	Temp.Set	180–300 °C	Sets the heater temperature. Default: 240 °C . Setting the temperature any higher may damage the Grignard Pure fluid.
Empty Fluid	E-Fluid	0–5000 ml	Sets the fluid counter number which triggers the empty fluid warning
Low Fluid	L-Fluid	0–5000 ml	Sets the fluid counter number which triggers the low fluid warning
Pump Primer	Manual Set	01–10m	Sets the time in minutes before the fluid sensor shuts the pump off
Factory Reset	Default	Proceed?	Press and hold <ENTER> for 3 seconds to reset the product to factory defaults

Empty Fluid Warning Level (Reservoir Size)

The **E-Fluid** option in the advanced settings defines the size of the reservoir. When the [Fluid Counter](#) reaches the number set here, the display will warn that the fluid level is empty. To adjust this setting for a larger or smaller reservoir:

1. Access the [Advanced Settings](#) menu.
2. Go to the **E-Fluid** level.
3. Increase or decrease the reservoir size from **0–5000 ml**.

Low Fluid Warning Level

The **L-Fluid** option defines the level of the Fluid Counter which triggers a low fluid warning.

1. Access the [Advanced Settings](#) menu.
2. Go to the **L-Fluid** level.
3. Increase or decrease the low fluid point from **0–5000 ml**. Set this number far enough below the **E-Fluid** level (80% is recommended) to give enough time to refill the reservoirs before they are empty.

Priming the Pump

The **Manual Set** option defines the length of time for fluid to reach the fluid sensor from the reservoirs. Adjust this setting when using extended hoses to reach remote reservoirs.

1. Access the [Advanced Settings](#) menu.
2. Go to the **Manual Set** level.
3. Increase or decrease the prime time from **01–10m** (minutes). If the fluid sensor does not sense fluid before this time runs out, the pump will shut off.

To prime the pump before operation through DMX, set the 3rd channel between 027 and 036.

Factory Reset

To reset the product to factory default settings:

1. Access the [Advanced Settings](#) menu.
2. Go to the **Default** level.
3. Hold **<ENTER>** for 3 seconds.

5. Maintenance

Self-Clean Mode

Do not allow the dispersion mechanism to become clogged. Clean the Clarify X regularly to maintain optimal performance. If used for 12 to 18 hours per day, use the self-clean mode once a week to prevent the accumulation of particulate matter in the heating element. Reduced use may require less frequent cleaning.

The self-clean mode runs cleaning fluid through the heater for 3 minutes. This can be performed manually.

- To run the self-clean mode through the display menu, press and hold **<ENTER>** for 5 seconds.



.Never operate the machine without fluid.

Storage

Before storing the product, run the self-clean mode and empty the fluid reservoirs. Cleaning the system prior to storage will help prevent any particles from condensing inside the heater while not in use.



Test-run your Clarify X on a monthly basis to achieve the best performance.

Power Shutdown Mode (Standby)

1. Between uses, either set the power switch to the off position or unplug the product from the main power source.

The product may remain in this mode for several days between uses.

6. Technical Specifications (To be Updated)

Dimensions and Weight

Weight	Length	Width	Height
85lbs	24 in	24 in	52 in

Note: Dimensions in inches are rounded.

Power

Power Supply Type	Range	Voltage Selection	
Fixed	120 VAC, 60 Hz	Fixed	
Consumption @ 120 V, 60 Hz	Operating Current @ 120 V, 60 Hz	Power Input Connector	Power Cord plug
600 W	5.5 A	Type x connector	Edison (U.S.)

Operation

Heat-Up Time	GP Fluid Tank Capacity	Cleaner Fluid Tank Capacity	Maximum Fluid Consumption	Minimum Fluid Consumption
1 min 30 sec	1 Gallon	0.25 L (8.45 oz)	4 ml/min	0.25 ml/min

Maximum Fluid Run-Time

@ 4 ml/min	@ 3.5 ml/min	@ 3 ml/min	@ 2.5 ml/min	@ 2 ml/min
10.1 hours	12.0 hours	14.0 hours	16.5 hours	21.0 hours
@ 1.5 ml/min	@ 1 ml/min	@ 0.5 ml/min	@ 0.25 ml/min	@ 0.25 ml/min
28 hours	41.5 hours	83.0 hours	166.0 hours	166.0 hours

Note: Maximum fluid run-times based on 20% duty cycle.

Thermal

Maximum Ambient Temperature	Cooling System
104 °F (40 °C)	Fan-assisted convection

DMX

I/O Connector	Channel Range
5-pin XLR	3

Ordering

Product Name	Item Name
MPU	MPU



Complies with:
UL 499
USCSA C22.2 No. 64-10



Returns

Call Grignard Pure Technical Assistance to obtain support and to request a Return Merchandise Authorization (RMA). Obtaining technical assistance is required prior to obtaining an RMA which is needed before shipping the product. Be prepared to provide the model number, serial number, and a brief description of the cause(s) for the return.

To submit a service request for the Clarify dispersion device online, go to www.clearifyair.com/service-request.

Clearly label the package with an RMA number. Grignard Pure will refuse any product returned without an RMA number.



Write the RMA number on a properly affixed label. DO NOT write the RMA number directly on the box.

Before sending the product, clearly write the following information on a piece of paper and place it inside the MPUs top compartment:

- Your name
- Your address
- Your phone number
- RMA number
- A brief description of the problem

Be sure to pack the product properly. Any shipping damage resulting from inadequate packaging will be your responsibility. FedEx packing or double-boxing are recommended.



Grignard Pure reserves the right to use its own discretion to repair or replace returned product(s).

Contact Us–

General Information	Technical Support
Grignard Pure World Headquarters	
505 Capobianco Plaza Rahway, NJ 07065	Voice: +1 (732) 340-1111
Fax: () xxx-xxxx	Email: mpusupport@grignardpure.com
Toll Free: (xxx) 762-1084	Website: www.GPCustomer.com

