IceJet III

Operator's Manual

ultratec special effects™

www.ultratecfx.com

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Note: Please read entire manual before operating the IceJet III

Warning

Important Safety Instructions:

1.Do not remove the outer case.

2.Ensure that this unit is grounded at all times. Failure to do so may result in serious injury

3.High pressure gas dangers.

Safety Precautions

1.Ensure that any operation of the machine is supervised by suitably trained and authorized personnel.

2.Do not modify or use anIceJet which has been damaged in any way

3.Secure cylinders and Dewers from tipping.

4.Protect the machine from direct weather effects and wet locations.

5.Allow for safe venting of CO2 on Dewars.

6.Avoid directing output at people, structures or objects within close proximity of the discharge nozzle.

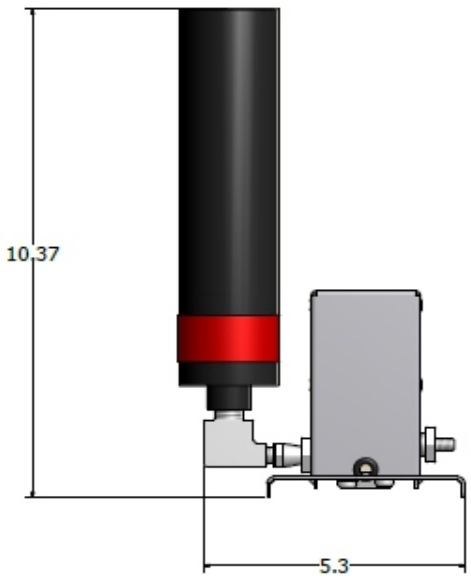
Technical Specifications

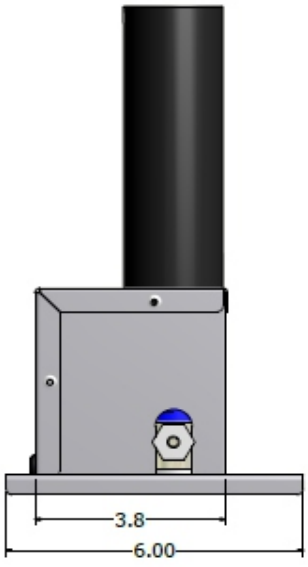
Model:	IceJet III
Part Number:	CLF-2149 120 Volt 50/60 Hz. CLF-2151 220-240 Volt 50/60 Hz.

Length:	6 in	15 cm
Width:	6.5 in	16.5 cm
Height:	10.4 in	26.5 cm
Net Weight:	6 lbs	13 kg

Power Rating:	120 Volt A.C. 50/60 Hz. 1 Amps. 240 Volt A.C. 50/60 Hz. 0.5 Amps.
Consumption:	0.4 lb/sec. @ 350 psi to 1.1 lb/sec. @ 1000 psi
Approvals:	Q.P.S. certified to CSA standards, CE

Technical Drawings





1.

Operating Procedure

1.Before operating the IceJet a site review is required. As the IceJet is capable if dispensing large quantities of Co2 in a room the air exchange properties of the room must be determined. (See sample calculation below) Due to the nature of the Dewar tank (low pressure system) some Co2 is consumed to keep the liquid Co2 cold. This Co2 is released around the tank. If early delivery is required anticipate the loss of Co2 and the storage ventilation requirements. As both high and low IceJets require large tanks have safe handling and transportation requirements prearranged.

2.The Ice jet must be connected to a grounded supply of at least 2/1 amps (110 v/220 v) free of electrical interference.

3 . While connecting the tank adapter check the sealing disk is clean and not worn. Inspect the burst disk for damage. Inspect hoses for wear, blisters and cracks. While connecting fitting ensure they seat properly. Replace any component, which is not in good repair.

4 . The IceJet produces thrust when operating. Place the IceJet on a flat surface and securely fasten it. Four mounting holes are provided. An optional truss clamp may be used mounted to the ½" side hole. Position the nozzle to the desired direction and tighten it in place.

5.Wear properly rated and fitting safety glasses and gloves. Hazards from pressure and freezing are present. On the low-pressure operation the tank pressure should be above 300 psi. Open the pressure builder 1 hour before ShowTime. Connect to the liquid line on the tank. On a high-pressure cylinder use only dip tube equipped cylinders that allow liquid withdrawal. Slow crack the tank valve watching and listening for leaks. If all is ok then open valves fully then close them back ½ turn.

6.The IceJet produces loud noise and high velocity flow during operation. Ensure the safety of persons and property around the nozzle discharge. If controlling the IceJet from a lighting console place it on a non-dimming circuit to prevent damage. Apply the correct voltage and the solenoid will open. You will note the sound change as the liquid Co2 makes its way to the valve. This could take several seconds for long hose runs. The red band on the nozzle adjusts the amount of air drawn into the Co2 stream. The size of the effect varies with the moisture concentration of the air. More moisture means more cloud formation.

7.The low-pressure IceJet will give better performance due to the chilled Co2 but the use of Dewars can be restrictive for some applications. The high-pressure IceJet allows for smaller cylinders, which are easier to store, handle and acquire.

8.When finished with the IceJet turn off the tank valve (caution as it may be cold). Turn on the IceJet to allow the pressure to escape. Leave the valve on several second extra to allow all the Co2 to flash off. Now disconnect the hose and tank adapter.

CO2 Data

1 pound = 8.741 (scf) gas
1 pound = 0.118 (gal) liquid
Specific gravity = 1.53 for gas
Air has 21% oxygen.
CO2 is heavier than air and will sink to lower areas and displace the air.
OSHA exposure 0.5% for 8 hours (TWA) or 3% for 15 minutes (STEL)
Things to watch for when using CO2 are the reduction of the oxygen content and the collecting of CO2 in low or confined spaces. By planning the location and duration of the equipment safe operation can be implemented. CO2 monitors can be installed in low or confined areas to alert personnel of the presence of a hazard. Portable monitors can be used to spot check for the safe exposure levels. If the location is open and only needs an exposure limit this can be done by calculation. To calculate the oxygen depletion you must know the size of the area and the amount of CO2 added. The user's manual should give the rate of CO2 the equipment consumes.

Sample Calculation

The IceJet can output 1 pound of CO2 per second of run time.
Our room size is 75' long x 75' wide x 18' high = 101250 cubic feet. Approximately 100,000 cu ft.
If we run 3 IceJets for 25 seconds we add 75 pounds of CO2 to the room.
75 lbs. x 8.741 = 656 cu ft of CO2 added to the room.
If we take 100,000 – 656 we have 99344 cu ft of air left
Of this air we have 20,862 cu ft of oxygen (99344 x 21%)
Therefore we have 20,862/100,000 = 20.8% oxygen content left in the room.
This simple calculation leaves out several factors. All rooms have air exchange, which should be several times per hour. Replacing the air to keep people comfortable requires more exchange than what's accounted for by their breathing. This will reduce the CO2 concentration significantly. The other major factor is the local concentration of CO2 until it is dispersed into the room. This is the responsibility of the operator to ensure that exposure in this area is safe.

Maintenance

The casing of the Ice Jet is stainless steel with a powder paint coating. To clean, simply wash with mild soap and warm water. Keep hoses and ports covered to prevent dirt from entering, this can get into the valve and hinder operation. Do not use teflon tape on connections as threads of teflon can detach and block the valve.

Warranty

Hardware products come with a five-year warranty on parts and labor. If the unit in question has a material defect or fault that is caused in manufacturing, Ultratec Special Effects will provide free parts and labor to remedy the equipment. Ultratec Special Effects service department must be advised in a timely manner after defect appearance and the date of warranty request must be within five years of sale/purchase. Proof of sale and/or proof of purchase will be required for warranty to take effect.

Warranty service will be performed as follows: faulty parts will be repaired or replaced with the same or comparable parts, based on availability. Freight to our facility for warranty requests will be prepaid by the user/dealer. Upon completion of the repair, Ultratec Special Effects will return the unit via the most economical means available. Should you require the item express-returned, the user/dealer is responsible for indicating this request and for any difference in freight cost.

Warranty will be voided, and customer will lose all rights guaranteed by the warranty if any of the following are observed/occur:
If any non Ultratec Special Effects fluid is used at any point of operation.
If any adjustments or repairs are done to the machine in question by repair technicians not authorized by Ultratec Special Effects.
If our repair technicians observe any signs of incorrect handling/treating of machine in question.

Warranty services do not cause an extension of the warranty nor does a repaired product start a new warranty. This warranty only applies to the product supplied by Ultratec Special Effects, Ultratec Special Effects is not responsible for any losses, costs, or damages from the use of a defective product.

Any additional costs incurred are the responsibility of the Dealer and/ or the customer.
An RA (Return Authorization) number must be noted on the outside of each box being returned to our facility. Any package(s) without an RA number clearly marked, will not be accepted by our receiving department.

Export Distributors are required to carry out the warranty repair, parts will be supplied by Ultratec.

Please do not forget to remove any liquid from the machine when sending in for repair.

Please remember to include the RA Number on all items being shipped in for repairs.
To request a Return Authorization number please refer to our website - instructions below:
1) www.ultratecfx.com
2) Click on the SUPPORT tab along the top of the screen
3) Click on REQUEST RMA from the pull down
4) Fill in the required information
5) Click on "SEND" button
If you have any questions or require assistance please contact service at 519-951-3355/866-534-5557 or by email at Service@Ultratecfx.com.

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