www.cometflame.com

User's Guide Cometflame
Version: 280311

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Congratulations on your purchase of CometFlame (CF) and/or Color CometFlame (CCF). You are now the proud owner of a unique device with an abundance of creative possibilities as well as safety features for the special effects industry. The housing of the CF unit is made of stainless steel as well as other high-quality components enabling you to achieve a sustained safe operation.

> ⚠ Warning: Only use the CF (CometFlame) if you have read and fully understood the product manual. Please make certain that you are fully aware of how this Product Unit and its Software functions before employing its use. Do not employ the system if there are any ambiguities regarding the use of the system.

1 CometFlame in general

The CometFlame unit and its software, is designed for deployment in both indoor and outdoor shows. The CF is unique in its kind because there is no gas used in any form. The CF is a Plug and Play operating system, i.e., self-supporting out of the box. When using the CF - Take into account that an available height of at least 9 Meters (27 Feet) of area is available as the FLAME LENGTH is approximately 6 Meter (18 Feet), in Height. The CF nebulizes flammable liquid which could ignite when it gets in contact with other substances, even if the substance is not flammable it self. THINK OF CURTAINS, TRUSSES, ROOF LIGHTS, and any PLASTIC surface. The CF can, and should, only be used with the specifically developed fluid in the following colors: Red, Yellow, Blue, Orange or Purple. These are the ONLY COLORS AVAILABLE at this time.

> ⚠ DO NOT ATTEMPT TO MIX COLORS, please read Chapter 5 on page 3 for further information.

> ⚠ Warning: this equipment should only be used by a qualified operator.

When the CF is used outdoors please take into account that any wind can, and will affect the CF's display effect. Therefore: be certain that your CF Unit is PROTECTED FROM ANY RAIN, WIND or MOISTURE! The CF is equipped with an internal Pressure Measurement Device. These measurements make certain that the fluid is always at the right pressure. This is done to ensure continuous quality flames at no drop formation. The pump will be turned fully automatic on and off, depending on the pressure and frequency you toggle the CF. Please read chapter: 3 on page: 2 for the CF at a Glance.

> ⚠ Warning: Never employ the system when in near vicinity of a human being! Don't power the system when hanging over the unit.

2   Minimum Requirements

- 1 CometFlame.
- 1 Controlling table with the ability of patching and linking flash buttons to dmx values, thereby creating scenes or chases.
- 1 XLR cable running from the controlling table towards the CometFlame.
- Ignition fluid compatible with the CometFlame.

3   CometFlame at a Glance
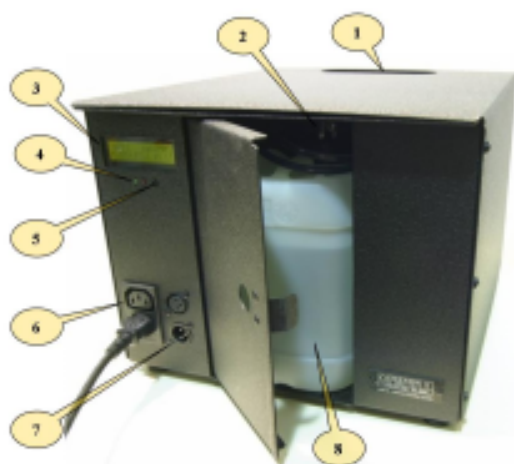
Figure 1: *The CometFlame*

Item Nr.	Item Description
1	Status / Always keep the fire pocket free to fire. Never touch the inside when connected to the power supply.
2	Be sure the tubes are placed in a forward direction and that they are not bent. Bent tubes can result in an activity which does not reach the systems premium potential.
3	Information display
4	Status LED's
5	Infrared receiver for CF Remote Control
6	Power supply in-out socket
	Europe: 230 Volt, 50 Hz and 1 Ampere
	United States: 110 Volt, 60 Hz and 2 Ampere
7	DMX in-out Socket
8	CF Fluid Canister; we can supply the following canisters: Red, Green, Yellow, Purple, Orange and Blue. Please check with your local supplier for more information regarding the available fluids or go to www.cometflame.com.

4   Specifications of the CometFlame

On average, the CF will be able to fire for 5 seconds continuously, before the CF reaches its minimum pressure and will be temporarily disabled. Now, the system will automatically re-pressurize. When the CF is used in a situation where the rate between rest and fire is 50 percent you will be able to fire continuously without any interference at 5 seconds. The CF is equipped with a 2.5 Liter Tank which gives you 300 to 500 shots depending on the selected pulse time of the flame selected. If the CF is placed in a permanent arrangement it is possible to hook up an external tank with a larger capacity. The CF is designed in such a way that it can be built into a stage so that the top of the CF is at the same height as the stage. The CF is designed to be used on (**Europe:** 230 Volt and 50 Hz) (**US:** 110 Volt and 60 Hz. The energy consumption is not more then 200 Watts. The fuse is located below the power socket and should only be set to (**Europe:** 1 A) (**US:** 2 A). The fuse ensures the maximum current running through the electronics and WILL MELT if the maximum current is exceeded. For more (technical) data, please go to chapter: 15.3 on page 9.

5   Refilling the CF Unit

Each time you refill the CF Unit, you need to employ the Press Function on the supplied Remote Control. The Press Function flushes the device to remove any air bubbles out of the circuit and pressurizes the system. **Keep in mind to power off the system when replacing the fuel tank!**. Once the pressure button has been employed the system will flush for 10 seconds. The Press Function, on the remote control, sets up a minimum system pressure. This minimum pressure is necessary for the device to become ready for use and even though the system is pressurized with the minimum pressure it will NOT work! This pressure feature ensures that you are at all times protected against leaks. If a leak should occur, the pressure would automatically decrease so that the CF would be rendered inoperative. If liquid needs to be refilled, it would be wise to check for any air bubbles in the system. These bubbles may interact with the CF. You can use the Flush Function on the Remote Control to remove any air bubbles form the system.

 It is always advisable to flush the CF with the specially developed liquid before changing colors! It could be possible that two liquids may react to one another, resulting in a color or activity which does not reach the systems premium potential.

 The CF should only be used with liquids that are specially designed for use with the CF. ANY FOREIGN LIQUID can permanently damage the CF and there may be adverse effects. The use of liquids other than the ones the system is designed for will void the warranty.

6   Controlling the CometFlame

The CF can be controlled by 2 DMX channels, the first channel is the Safety Channel, where that value can be set between 1 and 512. The second channel, is the fire channel. This channel can also be controlled between 1 and 512. Once the safety channel reaches a level of 100 (40 per cent) and stays below 155 (60 per cent), the system will be put on standby. Once on standby, the safety timer will be activated which should take about 1 second. When the CF is released, you are ready to fire! Due to safety measures the system will be locked if the CF has not been deployed in the previous 5 minutes. This lock-down will turn the red LED off. You can simply unlock the system by setting the safety value to 0 and then setting it back between 100 and 155. The Safety Channel should only be controlled if you are planning to use the CF is the near future. If you aren't planning on using the CF on short notice; set the safety channel value to 0. This will in turn, shut down the pump which pressurizes the system.

7   Fire angles

7.1   1 Channel mode

The CF is equipped to fire at five basic angles: -45, -22, 0, 22 and 45 degrees. These angles correspond to the value that the Fire channel has. A value of 0 - 10 percent on the fire channel will not output anything. An value of 11-25 percent corresponds with 45 degrees, 26-45 percent corresponds with 22 degrees, 46-65 percent corresponds 0 degrees, 66-85 percent corresponds with 22 degrees and 86 - 100 percent corresponds with 45 degrees. The Height is somewhat dependent of the pulse time which should be pre-set in a DMX Chase.

Value:	Percentage:	Angle:
0 - 25	0%≤X<10%	-
26 - 64	10%≤X<25%	45 °Left
65 - 115	25%≤X<45%	22 °Left
116 - 166	45%≤X<65%	0 °Up
167 - 217	65%≤X<85%	22 °Right
218 - 255	85%≤X≤100%	45 °Right

Table 1: *DMX Shooting Angle lookup Table. With X the corresponding percentage of the DMX Fire Channel. Angles are seen from the display side*

7.2   5 Channel mode

The five fire angles can be controlled with 5 channels. If the level of a certain channel raises above 230 a flame will propagate in the direction that the channel is set up to. If, for instance the fire channel is hard set (with the remote control) to channel 101, you could control nozzle 1 (45 °Left) on channel 101, nozzle 2 (22 °Left) can be controlled on channel 102, nozzle 3 (0 °Up) can be controlled on channel 103, nozzle 4 (22 °Right) can be controlled

Value:	Percentage:	Angle:
128 - 255	50%≤CH.1<100%	45 °Left
128 - 255	50%≤CH.2<100%	22 °Left
128 - 255	50%≤CH.3<100%	0 °Up
128 - 255	50%≤CH.4<100%	22 °Right
128 - 255	50%≤CH.5<100%	45 °Right

Table 2: *The listed channels are offsets of the channel the unit is set to. Angles are seen from the display side*

on channel 104 and last but not least: controlling the fifth nozzle can be achieved on channel 105. The safety- and fire channel(s) can be manually set to different channels. The Height is somewhat dependent of the pulse time which should be pre-set in a DMX Chase.

8 Safety Measures

We have implemented the CF with several safety measurements. Such as: A tilt sensor, which will be activated if the CF is tilted more that $40°$degrees in any direction. This tilt sensor will, if triggered, turn off the CF. Another safety measure we took is a Pressure Meter. If the internal pressure is not sufficient for any reason, the CF will be disabled! If the safety channel is controlled between 50 and 75 per cent and has not been employed for 5 minutes, the system will go in lock-down, you will need to reset the safety channel (setting is back to 0 and then back to the desired value).

STOP	The minimum and maximum rates of pressure can NOT be changed!

9 Post-usage and Transportation

You should flush the system with water after using it. Keep in mind that you aren't allowed to transport the system by plane if it contains any hazardous materials. Flushing the system with water eliminates these hazardous materials. You should flush this device with water to remove any hazardous materials which aren't allowed when transporting the CF by plane.

STOP	Always flush the system with water after using it! Please read Chapter: 5 on page 3 for further information.

10 Programming the CF

The CF can be programmed with the supplied remote control (universal for all CF devices). You can use this feature if the CF does not have a DMX signal. If the CF does have a DMX signal, you won't be able to program it with the remote control. We implemented this blockage to avoid any unwanted programming situations. The programming features include: Setting the Safety- and the DMX Channel. These Channels are independently set between 1 and 512. Rinsing (flushing) function, the pressure function (pressure). Besides these functions you can separately turn the 5 outlet nozzles on and off. This feature is especially designed to prevent unwanted situations.

⚠	Always disconnect the power supply before any physical contact with this unit. The power supply/components in the nozzle area are HIGH VOLTAGE and improper usage of this supply may cause electrocution, resulting in possible DEATH!

11   The CometFlame remote control at a Glance

Button	Function
Block	Block or enable any unwanted angles
Channel	Change the DMX Channel. Use the numeric keypad to select the desired channel.
Safety	Change the Safety Channel. Use the numeric keypad to select the desired channel.
Status	Overview of all relevant information. See chapter 12 on page 7.
Info	Software version will be displayed on the CFs Screen
Backlight	Toggle the backlight on - off.
Flush	Flushes the system. Please read chapter 5 on page 3.
Press	Flushes and Pressurizes the system. Please read chapter 5 on page 3.
Numbers	Use these keys after pressing: Channel or Safety; to enter the desired channel.
Arrows	Use these keys after pressing Block to block or engange an desired angle.
F1-F4	**F1:** Press to test the spark unit. **F2:** Future use. **F3:** Future use. **F4:** Toggle between channel 1 and 5 mode.
Save	Saves the settings that you have changed. Always press this button, if you dont press it the settings will be lost!

Figure 2: *The Remote control*

12   Display screen

If the device is in programming mode there are some info fields to view and you can turn the backlighting of the LCD display on and off. The display will show some important things like the safety channel, the DMX channel and errors such as: Leakage, Pressure Fail, or if the CF has been tilted. This information can be very useful when a malfunction occurs. Other information will show: Visual depiction of the output nozzles, the flushing time and a toggle option to set the system to 1 Channel mode or to 5 Channel mode.

13   Status LED's

We have applied the CF with a green and a red LED. These LED's show the status of the CF. The green and red LED's make it easier to read the status at a distance. Particularly useful for Stage situations where you and the CF are several yards apart. When the green LED is off, there is no DMX signal. When the green LED is on - the system has a DMX signal present and all security functions are in order. A flashing Green LED means that one of the safety features that where mentioned in chapter 8 on page 5 kicked in and the system won't be able to fire. This is independent of the DMX signal. In other words, this function will be displayed at all times. The final error message can be viewed on the LCD screen. The Red LED indicates the status of the safety timer and the readiness to fire again. When the red LED is off, the system is at rest and is in safe mode. When the safety channel is controlled between 40 and 60 percent, the Red LED will flash about 1 second, in order to show that the safety timer is running. When 1 second has elapsed, the red LED light continuously burns to indicate that you can use the system immediately. If Both LED's flash then either the fluid level is too low or the Pressure is too low, you will need to refill the system and give the system a total reset by unplugging and re-plugging the power cord. Please read chapter 5 on page 3 for further information on how to refill your CF Unit.

14   Maintenance, Faults or Problems with your CF Unit

When the ignition does not occur in the right way, we recommend that you use the F1 key on the remote control. By pressing this button you block the pump and you will see an Arc of sparks. When the arc of sparks is not smooth, it can be that there is dirt or moisture attached to the ceramic. This can be removed by using a clean cloth and some pressurized air. **DO NOT FORGET TO REMOVE THE POWER CORD!!!**

	Always disconnect the power supply before any physical contact with this unit. The power supply/components in the nozzle area are HIGH VOLTAGE and improper usage of this supply may cause electrocution, resulting in possible DEATH

Another cause of bad ignition is that the nozzles are polluted. By rinsing the nozzles with warm water you can remedy this pollution.

Always ensure that the area where the CF will be used is a properly selected area. Make certain that you always have fire fighting equipment nearby and a properly trained technician to handle emergencies.

Please contact your dealer/importer in the event that a fault occurs that is not solvable by RESETTING the device.

STOP Your warranty will expire by unauthorized opening of the Stainless Steel Unit! Please read Chapter: 17 on page 16 for further information.

Figure 3: *Picture taken with a still camera (one shot in either one of the 5 directions at a time)*

15   CE Marking

15.1   Declaration of Conformity

We, **(De Koster Pyro BV, de Lopensaet 13, Dronten - Holland)** declare under our sole responsibility that the product: **CometFlame and Color CometFlame with their model numbers respectively CF and CCF-one** to which this declaration relates is in conformity with the following standard(s) or other normative document(s).

- 2006/42/EG (Machinery)

- 97/23/EG (Pressure Equipment Directive)

- 98/37/EG (EU Machinery)

- 73/23/EWG (Low Voltage Directive)

- 89/336/CEE (Electromagnetic Compatibility)

(If applicable) Following the provisions of **EU Directive(s) Standards (93/68/EEC)**. (Machinery, Electromagnetic Compatibility, etc.) The Technical Construction File is maintained at: **(De Koster Pyro BV, de Lopensaet 13, Dronten - Holland)** and will be enclosed to this users guide. Please go to: `http://www.cometflame.com` for the authorized representative that is located within the community.

MANUAL

Cometflame Keep for later use

15.2 Safety Precautions

> **STOP** Before starting, employing or performing maintenance on your CometFlame read the User's Guide carefully. Dealing and working with this device is only allowed for persons who are sufficiently familiar with the device!

Always keep the device in a clean workspace, ensure adequate lighting and ventilation when servicing the unit. The device should not be changed and its construction should not be used for other purposes than those for which the manufacturer has designed it. Never work under the influence of concentration towered disease, fatigue, drugs, alcohol or drugs. Keep yourself to all safety- and hazard guidelines. Keeping the User's Guide perfectly legible is an advantage! Keep children and persons that are unfamiliar with the device away from the operating area, the equipment and of course the tools. The device should not be used, repaired and maintained by those who are not familiar with the dangers. Always wear close-fitting work clothes, safety glasses, safety shoes and hearing protection. Tie long hair together. In case that a failure jeopardizes your safety and or the safety of others, switch it off IMMEDIATELY. If you notice any damages on the Cometflame that can affect the system, do not use it! Never overload the CF with fluid! Always use the correct fluids, tools and equipment! Make sure that tools are not blunt or damaged.

15.3 Technical Specifications

Product Name	Cometflame	Article Number	CF-one
Material Internal Hosing	PTFE	**Material External Hosing**	PUR
Max. Pressure	25 Bar	**Capacity Standard tank**	2.5 Liter
Ignition Voltage Piezo	15 KV	**Nozzle Type**	CCF-NL Nylon
Fitting Connection	1/8 Bsp	**Dimensions (LxWxH)**	346x314x240 mm = 13.6x12.4x9.4''
Dimensions Door (BxH)	134x231 mm = 5.28x9.09''	**Netto Weight**	17.5 Kg = 38.5 lbs
Power Supply	110/230 Volt, 2/1 Ampere, 60/50 Hz	**Control**	Standard DMX 512 Protocol
Flammable Liquid: Specially Developed Alcohol			

15.3.1   Workplace

To reduce the risk of injury of property damage, fire or electric shock, make sure the work environment is: Free from damp, wet or rainy conditions. Never use the CF in an explosive environment or near flammable materials. Keep children away (never let them use tools or machines), the work area well lit, clean and tidy.

15.3.2   Before usage

Before using the appliance check the CF for defective parts. Always make sure that the device is working properly. Be sure the compressor is stopped and the ignition is off before you leave the device. Let the flame comet always use a final test run. If a strange noise or vibration occurs irregularly, turn the machine off, unplug and let the problem by a qualified technician. Unplug the CF when you are doing maintenance on the device. The unit should always be turned off and unplugged when not in use. Keep protective equipment in place and in order.

15.3.3   Mounting

Only connect the power when all other cables are already installed. Always use a proper **grounded** power supply.

15.3.4   Operation

Never force the nozzles or components to tune the device in any way. The apparatus was designed to operate under its actual limit in order to build in extra safety measurements. It is not permitted to use the CF inappropriately. Check the device for damaged parts before you employ the CF. Don't forget to de-pressurize the system (by flushing; see chapter 5 on page: 3)

⚠	NEVER POINT THE COMETFLAME ON HUMANS, ANIMALS, FIRE HAZ-ARDONUS SUBSTANCES OR OTHER SENSITIVE ITEMS

⚡	Always disconnect the power supply before any physical contact with this unit. The power supply/components in the nozzle area are HIGH VOLTAGE and improper usage of this supply may cause electrocution, resulting in possible DEATH

Figure 4: *The CometFlame with its status LED's*

16   Material Safety Data Sheet

Trade Name: Colorflame Fluid Red / Yellow / Green / Blue / Purple / Orange

16.0.5   Identification of the substance/preparation and of the Company

Chemical family	Alcohol
Use	Industrial (only for professional use)
Company identification	Green Star- Steenpad 21H - 4797 SG - Willemstad (NL) - tel: +31 (0) 168-473194 - fax +31 (0) 168-473176 - email: info@green-star.nl
Emergency phone nr	Contact your National Anti-Poison Centre (Only to be contacted by a physician)

16.0.6   Hazards Identification

Classification of Product	Harmful ✖ (Xn) (Only with Blue)
Main hazards	Highly flammable. 🔥 R11/21/22: Harmful by inhalation, in contact with skin and if swallowed. R68/20/21/22: Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed

16.0.7   Composition / Information on ingredients

This product is considered to be hazardous and contains hazardous components.
Composition (preparations) : Contains <0,5 % Methanol

Substance name	Value(s)	CAS	EG	EC Index	Certificate
Ethanol	>30 to <100 % .	64-17-5	200-578-6	603-002-00-5	F:R11
Methanol	>0,1 to <0,5 % .	67-56-1	200-659-6	603-001-00-X	F:R11
					T:R23/24/25-39
Chloride	>0,1 to <0,3 % .	10025-70-4	233-971-6		
		10125-13-0	231-210-2		
Other information	Full text of R-Phrases: see chapter: 16.0.20 on page: 15				

16.0.8 First Aid Measures

- Inhalation	Seek medical attention if il effect or irritation develops.
- Skin contact	Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- Eye contact	Seek medical attention if ill effect or irritation develops. Flush with lukewarm water for 15 minutes.
- Ingestion	Seek medical advice.

16.0.9 Fire-Fighting Measures

Extinguishing media

Suitable	Water spray
	Powder
	Alcohol resistant foam
Not to be used	Do not use a heavy water stream.
Special exposure hazards	None known
Special procedures	Evacuate unnecessary personnel
	Stop release
Special protection measures	Use self-contained breathing apparatus.
	S36: Wear suitable protective clothing.

16.0.10 Accidental Release Measures

Personal precautions	Equip cleanup crew with proper protection
Environmental precautions After spilling/leakage	Clean up any spills as soon as possible, using an absorbent material to collect the spill. If a major spill occurs, all personnel should be immediately evacuated and the area ventilated.
Environmental precautions: recovery on soil	Prevent entry to sewers, ground and public waters.

16.0.11 Handling and Storage

General Precautions in handling and storage	Remove ignition sources. Avoid all unnecessary exposure. Handle in accordance with good industrial hygiene and safety procedures. No smoking.
Technical protective measures	Proper grounding procedures to avoid static electricity should be followed.
Storage	Strong oxidizing agents. Store away from: Store in tightly closed container and in a properly vented store, away from heat, sparks and open fire.

16.0.12 Exposure control/ Personnel protection

Occupational Exposure Limits	Ethanol: MAC Value - Netherlands: 500 ppm; 1000 mg/m3 Ethanol: MAC Value - Belgium: 1000 ppm; 1907 mg/m3 Methanol: MAC Value - Netherlands: 200 ppm; 260 mg/m3 (H) Methanol: MAC Value - Belgium: 200 ppm; 266 mg/m3
Personal protection	
- Respiratory protection	No special respiratory protection equipment is recommended under normal conditions of anticipated use with adequate ventilation.
- Protection for the hands	Wear suitable gloves resistant to chemical penetration.
- Eye protection	Safety glasses with side guiards should be worn to prevent injury from flying particles and/or other eye contact with this product.
- Skin protection	If skin contact or contamination of clothes is likely, protective clothing should be worn.
- Head protection	None.
- Ingestion	When using, do not eat, drink or smoke.
Industrial hygiene	Do not smoke 🚭

16.0.13 Accidental Release Measures

Physical state	Liquid
Color	Colorless and green
Odor	Characteristic
Vapor pressure (hPa)	59
Solubility in water (g/100 ml)	Mixable in all proportions
Flash point (C)	< 21
Initial boiling point (C)	78
Auto-ignition temperatuur	425
Explosion limits - lower (vol%)	3.5
Explosion limits - upper (vol%)	15
Density (g/cm3)	0.79

16.0.14 Stability and Reactivity

Stability	Stable under normal conditions.
Conditions to avoid	Avoid heat, sparks, open fire, oxidizing conditions
Materials to avoid	Oxidizing agent
Hazardous decomposition products	By burning possible formation of: Carbon monoxide

16.0.15 Toxicological Information

On Ingredients	
Ethanol	Rat oral LD50 (mg/Kg) : 7060
Methanol	RAT oral LD50 (mg/Kg) : 5628
	Rat inhalation LC50 (mg/l/4h) : 2.8
	Rabbit dermal LD50 (mg/Kg) : 15800

16.0.16 Ecological Information

Ecological effects information

On Ingredients	
Ethanol	LC50-96 Hour - fish (mg/l): 110000
	48H-EC50 - Daphnia magna (mg/L) : 9268 - 14221
Methanol	LC50-96 Hour fish (mg/l): 7900 - 27700
National prescriptions	
WGK class (Germany)	Water hazard class 2: hazardous for water
General evaluations method (NL)	Water hazard class 11: Sanitizing effort B

16.0.17 Transport Information

General information	
- UN No.	1170
- Class	3
Packing Group	II
Hazard Label(s)	
- Warning panel	33
- Proper shipping name	UN1170 Ethanol (ETHYL ALCOHOL) / ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION),3,II Sea transport
- EMS-Nr	F-E, S-D

16.0.18 Disposal Information

Disposal	Dispose in a safe manner in accordance with local/national regulations.
Treatment of dirty packing	After last use, the packing should be totally empty and closed.

16.0.19 Regulatory Information

EEC Labeling	Classification and labelling following EC directives 67/548/EEC and 1999/45/EC and their Symbol(s)
	Harmful ❌ (only with blue)
	Highly flammable 🔥
- Contains	Methanol
R Phrase(s)	R11: Highly flammable. R20/21/22: Harmful by inhalation, in contact with skin and if swallowed. R68/20/21/22: Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
S Phrase(s)	S36/37: Wear suitable protective clothing and gloves. S53: Avoid exposure - Obtain special instructions before use.

16.0.20 Other Information

List of relevant R phrases	R11: Highly flammable. R23/24/25: Toxic by inhalation, in contact with skin and if swallowed. R39/23/24/25: Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

The contents and format of this MSDS are in accordance with EEC Commission Directive 2001/58/EEC. Major modifications made to the previous edition are marked with a in the left margin.

DISCLAIMER OF LIABILITY. The information in this MSDS was obtained from sources which we believe are reliable. However, this information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use of disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use of disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

17 Liability and Warranty

The manufacturer excludes all possible liability resulting from improper use of this software, unit, or failure by the owner/purchaser to read the manual and it's expressed and implied safety instructions. Neither the manufacturer nor the distributor give any representation or warranty to the buyer of any kind. That he or she is qualified for any repairs to the product, or that he or she is qualified to replace any parts of the product. In fact, the manufacturer and / or distributor expressly explains that all repairs and parts replacement should only be done by qualified technicians, not the buyer. The buyer takes all risk and liability arising from the repair or replacement of parts of the original bought CF on his own account.

On behalf of: **De Koster Pyro BV**

R.M. de Koster

Figure 5: *The CF being employed at the EO Jongerendag*

18 Warnings and advices

⚠️	Warning: Only use the CF (CometFlame) if you have read and fully understood the product manual. Please make certain that you are fully aware of how this Product Unit and its Software functions before employing its use. Do not employ the system if there are any ambiguities regarding the use of the system. See introduction on page 1.
⚠️	Warning: Never employ the system when in near vicinity of a human being! Don't power the system when hanging over the unit.
⚠️	DO NOT ATTEMPT TO MIX COLORS. See chapter 1 on page 1.
⚠️	Warning: this equipment should only be used by a qualified operator. See chapter 1 on page 1.
🛑 STOP	Your warranty will expire by unauthorized opening of the Stainless Steel Unit! See chapter 14 on page 7.
🛑 STOP	The CF should only be used with liquids that are specially designed for use with the CF. ANY FOREIGN LIQUID can permanently damage the CF and there may be adverse effects. See chapter 5 on page 3
🛑 STOP	The minimum rates of pressure can NOT be changed! See chapter 8 on page 5
⚡	Always disconnect the power supply before any physical contact with this unit. The power supply/components in the nozzle area are HIGH VOLTAGE and improper usage of this supply may cause electrocution, resulting in possible DEATH See chapter 10 on page 5
💡	Always ensure that the area where the CF will be used is a properly selected area. Make certain that you always have Fire Fighting Equipment nearby and a properly trained technician to handle emergencies. See chapter 14 on page 7.
💡	It is always advisable to flush the CF with the specially developed liquid before changing colors! It could be possible that two liquids may react to one another, resulting in a color or activity which does not reach the systems premium potential. See chapter 5 on page 3