


ROBOTIC NOZZLE CATALOG



UNIFIRE 
Advanced, Swedish Robotic Nozzle Technologies™

v. 23.07.2019



UNIFIRE is a Swedish, high-tech robotic nozzle technologies laboratory. We make the world's most advanced robotic nozzle systems, period. Unifire's Robotic Nozzles represent a paradigm shift in the old way of making remote control monitors and water cannons. Boasting cutting-edge, industrial robot-type brushless (BLDC) motors and state-of-the-art electronics and software, Unifire is alone in creating a whole new generation of remote controlled robotic nozzle solutions. Whether your application is firefighting, mining, water fountains, wash down, dust control or anything else requiring water control, you've come to the right place!

About Unifire

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OVERVIEW



INDUSTRIES WE PROUDLY SERVE

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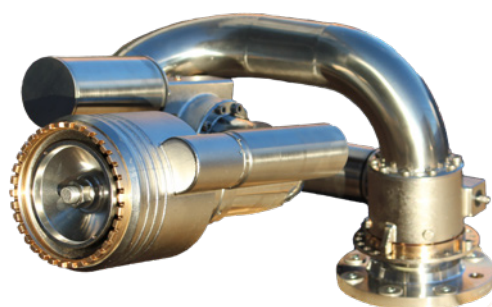
Unifire's state-of-the-art robotic nozzles serve a wide variety of industries and applications. Learn about the many possibilities.



Force 50™

Pages 19-28

Discover Unifire's 2" **Force 50** stainless steel 316L robotic nozzle for flows up to 2000 liters per minute at 10 bars, with a reach of up to 65 meters.



Force 80™

Pages 29-36

Discover Unifire's 3" **Force 80** stainless steel 316L robotic nozzles for flows up to 5000 liters per minute at 10 bars, with a reach of up to 85 meters.



TARGA PLC's & Electronics

Pages 37-55

Our state-of-the-art **TARGA** PLC's and advanced electronics completely developed in-house by Unifire, comprise the most advanced robotic nozzle control systems on the market. Learn more here.



InterAct™

Pages 56-61

Learn about our cutting-edge **InterAct** Graphical User Interface and web server. Control one or multiple systems and peripheral devices by computer, tablet, phone or Internet, with fully-customizable functions, logic languages and look.



FlameRange™ Robot Fireman

Pages 62-65

Unifire's **FlameRanger** is the world's most advanced, and one-of-a-kind fully automatic and autonomous fire detection and suppression system. Discover our cutting-edge firefighting robot in this section.



Joysticks & Controllers

Pages 66-71

We offer tons of ways to control our robotic nozzles. Explore standard solutions and inquire for custom-fit controllers.



Accessories & Spare Parts

Pages 72-82

Adding peripheral devices and ordering spare parts couldn't be easier. Check out some of the many possibilities here.



System Packages

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Explore our wide variety of popular system packages, or let us help customize the perfect-fit package to meet your needs.



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INDUSTRIES WE PROUDLY SERVE



FIRE FIGHTING

Helicopter Landing Pads

Unifire's Force series robotic nozzles are ideal for helideck fire protection both on- and off-shore.



Fire Trucks & ARFF Vehicles

Force robotic nozzles are outfitted on Aircraft Rescue Fire Fighting (ARFF) and municipal firefighting vehicles around the world.

Aerials

Compact and light weight, Force monitors are ideally suited for aerial ladders & platforms, booms and other firefighting applications.



Robots

Unifire's advanced control systems can wirelessly control the nozzle as well as third-party robotic platforms, like this one made in cooperation with Segway.

FIRE FIGHTING



Aircraft Hangars

Unifire supplies both remote-controlled and fully automatic fire detection & suppression systems for aircraft hangars.

Industrial & Manufacturing

Unifire's Force robotic nozzles protect numerous fixed industrial and manufacturing facilities.



Fixed Installations

We serve a wide variety of fixed fire fighting solutions, both indoors and outdoors in some of the harshest environments.

Bumper & Roof Monitors

Our robotic nozzles are widely used on numerous fire fighting vehicles as roof and bumper turrets.



MARINE & OFF-SHORE

Open-Deck Protecton

Protecting open decks on ferries, Ro-Ro and cargo ships and other marine vessels.



Super Yachts

World-class super yachts turn to Unifire for unmatched protection against fire & intrusion.



Fire Boats

Unparalleled performance is why numerous fire boats have selected Unifire to supply their most critical equipment.



Small & Mid-Sized Boats

Light weight, reliability and long-life cycle in the harshest marine environments make our equipment the perfect choice for small and mid-sized boats.

MARINE & OFF-SHORE



Anti-Pirate Protection

Unifire's Anti-Pirate Water Cannons protect numerous naval vessels, ships and super yachts from pirate attacks.

Oil Platforms

Fire and intrusion protection on oil platforms requires nothing but the highest quality, most durable and reliable equipment: Unifire is uniquely qualified for the task.



Unmanned Surface Vessels

Unmanned Surface Vessels (USV)'s and other remotely operated vessels.

Hovercraft

Unifire has delivered to unique hovercraft thanks to the light weight and durable marine-grade construction of our robotic nozzles.



FOUNTAINS

Dazzling Effects

Direct a high volume of fresh or sea water with DMX for complete precision and synchronization to achieve dazzling effects.



DMX Control

Unifire alone offers native DMX protocol for seamless integration in fountain control systems.

Rapid Movement

We offer extremely high speed (up to 360° / second) motors to achieve any desired fountain movements and effects.



Prepare to Be Inspired

Take your inspiration to new levels with Unifire's robotic nozzles for world-class fountain systems.

AUTOMATIC SYSTEMS

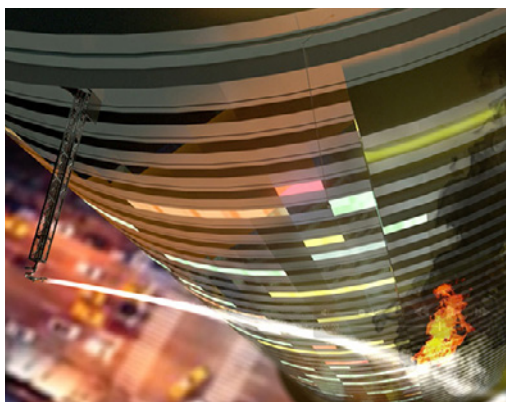


FlameRanger Technology

Unifire's FlameRanger is the world's most advanced, fully automatic fire detection & suppression system for instant, autonomous fire protection.

Detection in Seconds

Advanced IR array flame detectors detect fire within seconds of breaking out & the system responds immediately with great accuracy.



Rapid Targeting

The robotic nozzle rapidly and dynamically targets the fire and suppresses it at its source with a large volume of water or foam.

24/7/365 Protection

Sleep tight while the FlameRanger protects your valuable facilities around the clock, 24/7/365.



ENERGY & RECYCLING

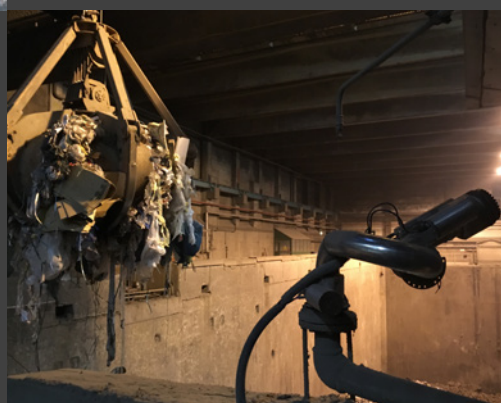
Waste Bunker Protection

Our remote controlled & fully automatic robotic nozzle systems for complete waste bunker protection at waste-to-energy plants.



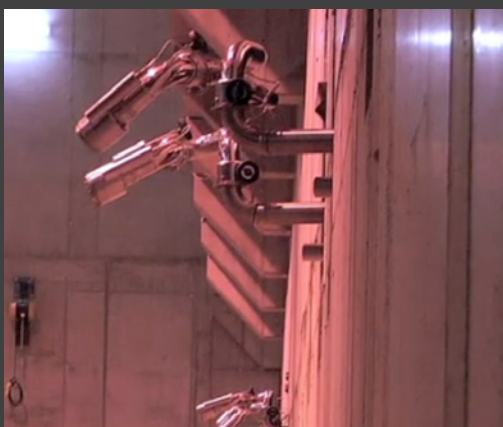
Recycling Facilities

Unifire's equipment is trusted to protect a variety of recycling facilities internationally.



Unrivaed Durability

We design and manufacture the most durable equipment available on the market to last and last in the harshest conditions



Custom Fit

Offering bespoke control systems, doors, swing arms and booms to suite challenging installation requirements.

MINING & WATER TRUCKS



High Volume

Unifire offers systems in a variety of flow ranges to suite your needs, ranging up to 5000 liters (1320 gallons) per minute.

Far Reaching

Long-range reach of up to 80 meters (87 yards) and total nozzle spray pattern provide unparalleled control.



Unrivalled Durability

Our stainless steel 316L construction and high quality design and build are made for the harshest environments.

Complete Control

Complete, precise spray pattern control is critical for mining, dust control and wash down. We've got you covered.



SPECIAL APPLICATIONS

Crowd Protection

Humane solutions for law enforcement and protection of the public.



Animal Showers

Delightful cooling and cleaning of large animals at zoos.



Anti-Pirate Protection

A non-lethal approach to protection from hijacking and pirate attacks.



Customized Solutions

With flexible customized solutions for almost any need, Unifire offers unique, bespoke solutions for our valued customers.

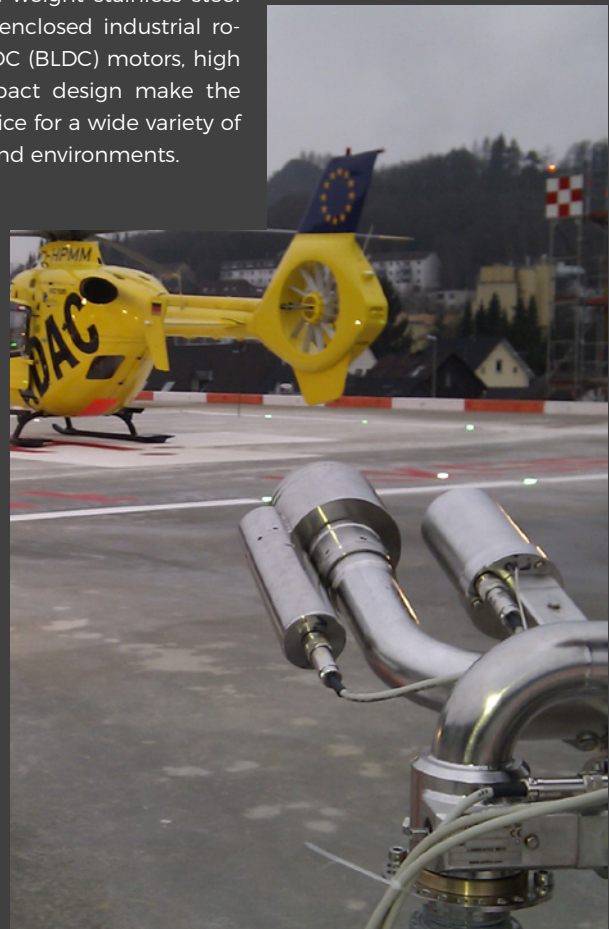
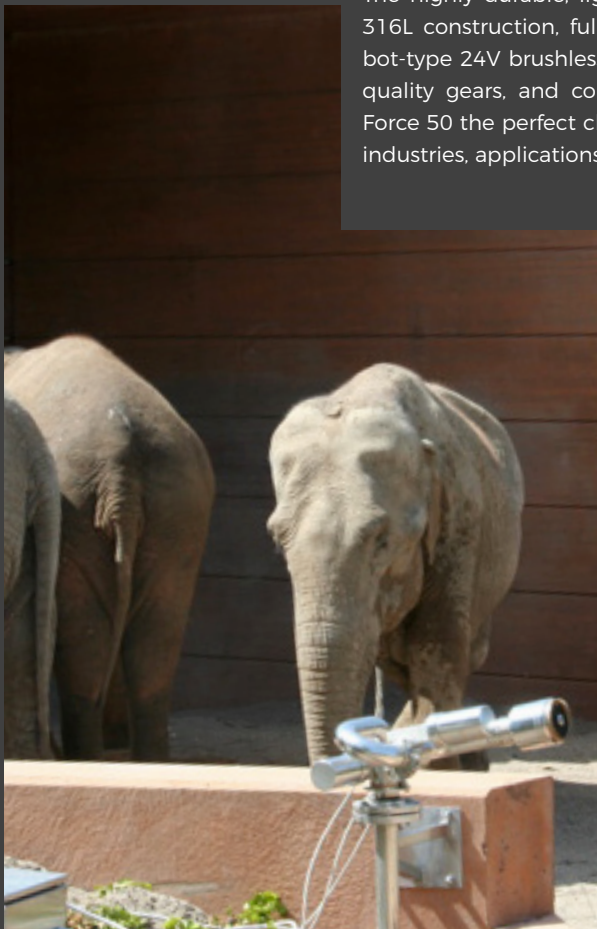




FORCE 50™

2" ROBOTIC NOZZLE

The highly durable, light weight stainless steel 316L construction, fully enclosed industrial robot-type 24V brushless DC (BLDC) motors, high quality gears, and compact design make the Force 50 the perfect choice for a wide variety of industries, applications and environments.





FORCE 50 QUICK SPECIFICATIONS

2" ROBOTIC NOZZLE

Max Flow: 2 100 liters (555 gallons) per minute; 126 m3/hr

Type:	Remote Controlled	
Material:	Stainless Steel 316L	
Range of Motion:	360° rotation / 180° vertical movement	
Base Connection:	2" Male BSP or flange (ANSI, DIN, JIS)	
Nozzle Tip Connection:	2" Male BSP	
Motor Type:	24V Brushless DC (BLDC)	
Certificates:	Bureau Veritas (BV) Type Approval / CE Marked / Manufactured at ISO 9001:2015 Certified Facilities	
	Metric	Imperial
Int. Pipe Diameter:	50 mm	2" inches
Dimensions (w/ Integ nozzle):	25 x 35 x 58 cm	9.8" x 13.8" x 22.8" inches
Weight (approx. w/ Integ nozzle):	19 kg	42 lbs
Max. Flow:	2 100 lpm	555 gpm
Max. Reach:	65 meters	71 yards
Max. Working Pressure:	12 bar	174 psi
Nominal Operating Pressure:	10 bar	145 psi

FORCE 50

DETAILED SPECIFICATIONS

ITEM / FEATURE	DESCRIPTION
Force 50 BLDC Robotic Nozzle Chassis:	<p>2" electric 24V brushless motor (BLDC) robotic nozzle (a.k.a. "remote control monitor" or "water cannon") suitable for fire fighting.</p> <p>Made of 316L Stainless Steel (EN1.4404).</p> <p>Robust and suitable for harsh environments.</p> <p>Compatible with use of foam, salt-water, and other harsh agents.</p> <p>Smooth, large (50mm) pipe bends for minimal friction loss.</p> <p>Fully integrated and enclosed stainless steel worm gears, with Bronze (CuSn12) gear wheels.</p> <p>Fully enclosed BLDC brushless motors provide extremely long life, high torque and allow extremely accurate positioning and position feedback.</p> <p>Modular design for capability of changing damaged pipe sections and gear housings.</p> <p>Very low-maintenance; never requires re-greasing.</p> <p>Mass: Approx. 15 kg without nozzle.</p> <p>Dimensions (w/ Integ nozzle): 25 x 35 x 58 cm.</p> <p>Ambient temperature range: -25°C to +70°C.</p>
Flow Range:	500 to 2100 liters (130 to 555 U.S. gallons) per minute; ; 126 m ³ /hr).. Integ 50 jet/spray tip is mechanically adjustable to accommodate various flows. JETRANGE 50 tip has interchangeable flow discs to meet your flow requirements
Max Working Pressure:	12 bar
Nominal Operating Pressure:	10 bar
Maximum Reach:	Approximately 65 meters at 2000 liters per minute at 10 bars (71 yards at 530 gpm at 145 psi) in jet stream mode. Actual results can vary significantly depending on a number of factors (wind, piping, valves, pump, etc.)
Maximum Range of Motion:	360° horizontal; 180° vertical (+/- 90° from horizontal). Range can be easily set to any range desired. (May be limited if used with POINTER controller to 270° horizontal / - 20°/+ 70° or other custom specification. Inquire to learn more.)
Movement Velocity (Speed):	Standard: 24°/sec. rotational; 12°/sec. vertical Optional High Speed: up to 70 or 360 °/sec.

FORCE 50

DETAILED SPECIFICATIONS

ITEM / FEATURE	DESCRIPTION
Manual Override:	Yes. Emergency manual override motor crank wheels available upon request.
Monitor Connection Types:	Base: 2" male BSP, or or flange (ANSI, DIN, JIS) Nozzle: 2" male BSP
Progressive, multi-directional movement:	Progressive speed control from extremely slow to max speed; simultaneous movement horizontally, vertically and nozzle jet/spray pattern control.
Programmable end positions:	End positions are set by software to any angle desired. Avoids wear and tear on motors, such as occurs with competing brands with mechanical hard stops.
Record & Play:	Simple record and play buttons to record all movements of the monitor and nozzle. Playback loops until interrupted by the operator.
Programmable Park Position:	Control system features an easy to record park (stow) position and a button for taking monitor to the park position.
Electric connection points:	M12 Multi-connectors on monitor and joystick electrical connections, allowing for quick installation, troubleshooting and replacement.
Modular Design:	Modular design for quick, simple replacement of all major components, including gear assemblies, pipe sections, joystick, electronic control box, cables, and motors.
INTEG 50 Jet/Spray Nozzle TIP:	<p>2" electrically adjustable jet/spray firefighting water/foam nozzle. Generates a full, effective fog cone.</p> <p>Stepless, adjustable spray angle from straight stream, over narrow spray to 140° fog cone.</p> <p>Stainless steel 316L, remote controlled.</p> <p>Fully enclosed BLDC brushless motors provide extremely long life, high torque and allow extremely accurate positioning and position feedback.</p> <p>Fully integrated gear drive mechanics and integrated brushless DC (BLDC) motor. Multi-connector for quick and simple installation.</p>
JETRANGE 50 Tip:	Stainless steel 316L, 2" nozzle tip provides tight jet stream. Changeable flow discs (baffles) for flows ranging up to 2000. For use with fresh- or salt-water, foam, dyes, and other harsh agents.

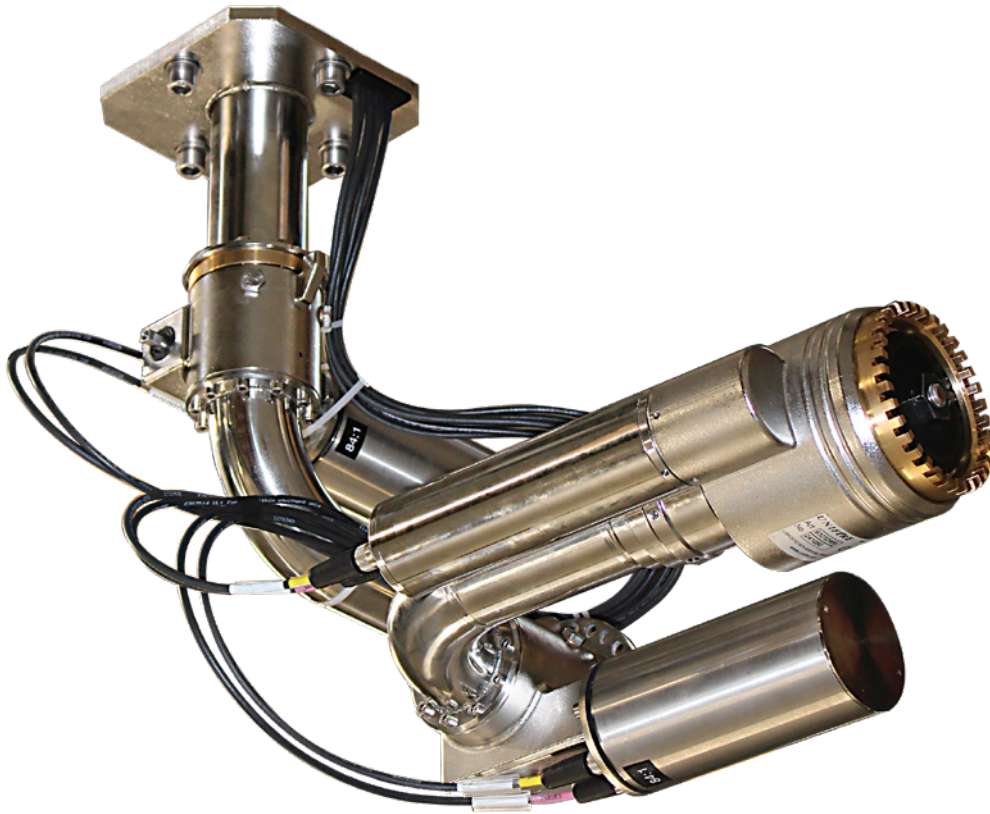


FORCE 50™

2" High Quality, Heavy Duty, Stainless Steel, Robotic Nozzle

Manufactured at state-of-the-art, ISO certified facilities, the Force 50 is the pinnacle of elegant, Swedish design, engineering, manufacturing & efficient performance, with the highest quality materials and featuring industrial-robot-type brushless (BLDC) motors, there is no finer robotic nozzle on the market.

- Heavy duty industrial robotic nozzle
- 2" BSP connection for variety of nozzle tip options
- Stainless steel 316L pipe and worm-gears
- Industrial robotic brushless DC motors (BLDC)
- Laser-welded IP68 motor enclosure
- M12 fully sealed IP67 multi-connectors
- Position feedback accuracy better than 1/100°
- Up to 38°/sec rotation speed
- Over 360° Horizontal Movement (set any range by software)
- Over 180° Vertical Movement (set any range by software)
- 50 mm internal pipe diameter
- Virtually maintenance-free; never requires re-greasing
- Light weight: ~ 19 Kg (42 lbs.) (with Integ Nozzle Tip)
- Max Flow: 2000 lpm @ 10 bars (530 US gallons @ 145 psi; 120 m³/hr)
- Max Reach: 65 meters
- Connection by 2" male BSP or flange (ANSI, DIN, JIS)



FORCE 50CM™

Ceiling Mount Configuration

The Force 50CM is our standard Force 50 with a twist! The special configuration is designed “upside down” for mounting on ceilings.

- Upside-down ceiling mount configuration
- Heavy duty industrial robotic nozzle
- 2" BSP connection for variety of nozzle tip options
- Stainless steel 316L pipe and worm-gears
- Industrial robotic brushless DC motors (BLDC)
- Laser-welded IP68 motor enclosure
- M12 fully sealed IP67 multi-connectors
- Position feedback accuracy better than 1/100°
- Up to 38°/sec rotation speed
- Over 360° Horizontal Movement (set any range by software)
- Over 180° Vertical Movement (set any range by software)
- 50 mm internal pipe diameter
- Virtually maintenance-free; never requires re-greasing
- Light weight: ~ 19 Kg (42 lbs.) (with Integ Nozzle Tip)
- Max Flow: 2000 lpm @ 10 bars (530 US gallons @ 145 psi; 120 m3/hr)
- Max Reach: 65 meters
- Connection by 2" male BSP or flange (ANSI, DIN, JIS)



F50R-LT™

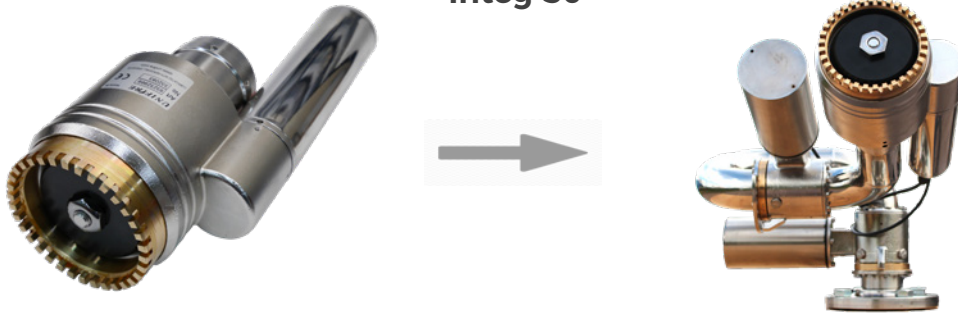
Compact Design with Integrated JETRANGE Tip

Our F50R-LT is our compact footprint configuration of the Force 50, while maintaining a 50 mm (2") internal pipe diameter. Our most economical robotic nozzle, the F50R-LT is designed and ideally suited for vehicle bumpers, where space really matters.

- Heavy duty industrial robotic nozzle
- 2" BSP connection for variety of nozzle tip options
- Stainless steel 316L pipe and worm-gears
- Industrial robotic brushless DC motors (BLDC)
- Laser-welded IP68 motor enclosure
- M12 fully sealed IP67 multi-connectors
- Position feedback accuracy better than 1/100°
- Up to 38°/sec rotation speed
- Over 360° Horizontal Movement (set any range by software)
- Over 180° Vertical Movement (set any range by software)
- 50 mm internal pipe diameter
- Virtually maintenance-free; never requires re-greasing
- Light weight: ~ 16 Kg (35 lbs.)
- Max Flow: 1940 lpm @ 10 bars (512 US gallons @ 145 psi; 116.4 m³/hr)
- Max Reach: 65 meters
- Connection by 2" male BSP or flange (ANSI, DIN, JIS)

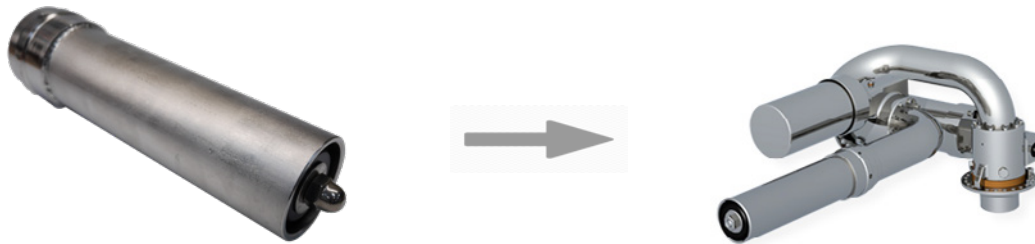
FORCE 50 NOZZLE TIPS

Integ 50



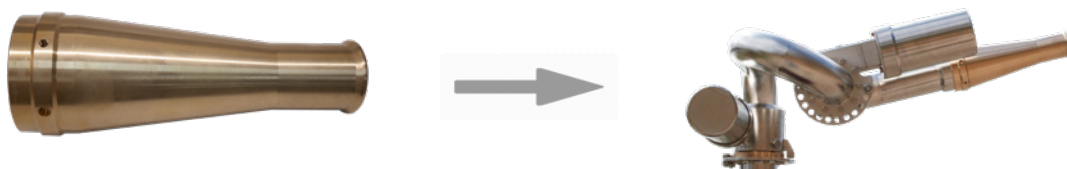
The Integ 50 is unique. Made of stainless steel 316L and bronze stream-shaper and featuring fully enclosed, high quality gears and stainless-steel-encased 24V DC brushless (BLDC) motors, the Integ 50 provides unbeatable performance and exquisite control from tight jet stream, to full fog cone, and everything in between.

JETRANGE 50



The JETRANGE 50 is ideal for applications requiring a tight jet stream. It features built-in stream shapers to achieve high performance, as well as interchangeable flow discs (baffles) to accommodate various flow requirements. The baffle also creates a natural vacuum, producing a very tight jet stream.

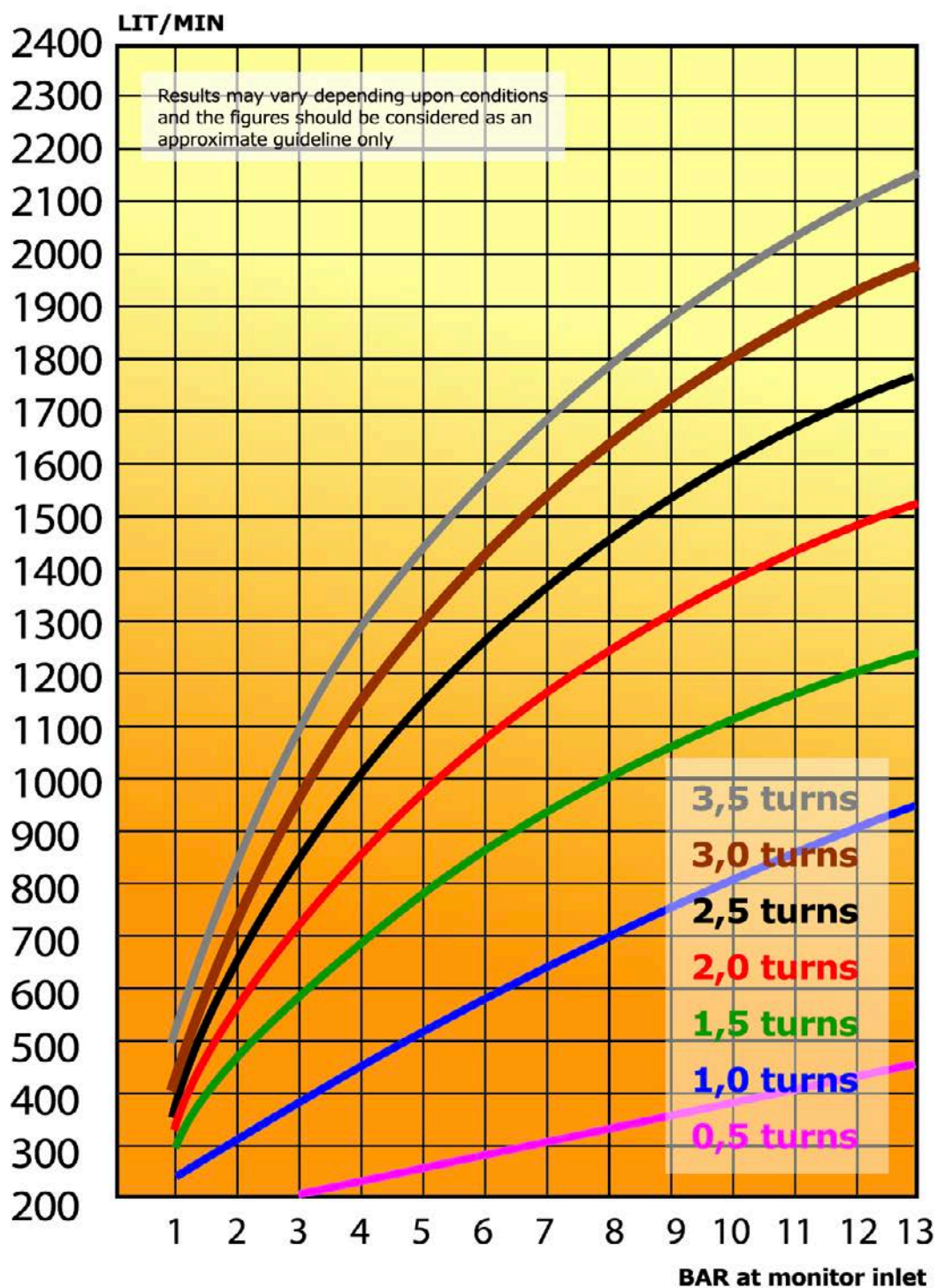
Smooth Bore (24mm & 32mm)



High quality bronze smooth bore nozzle tip available in 24mm and 32 mm openings. Ideal for jet stream applications, particularly where there may be dirt and particulates in the water source.

FORCE 50 FLOW CHART

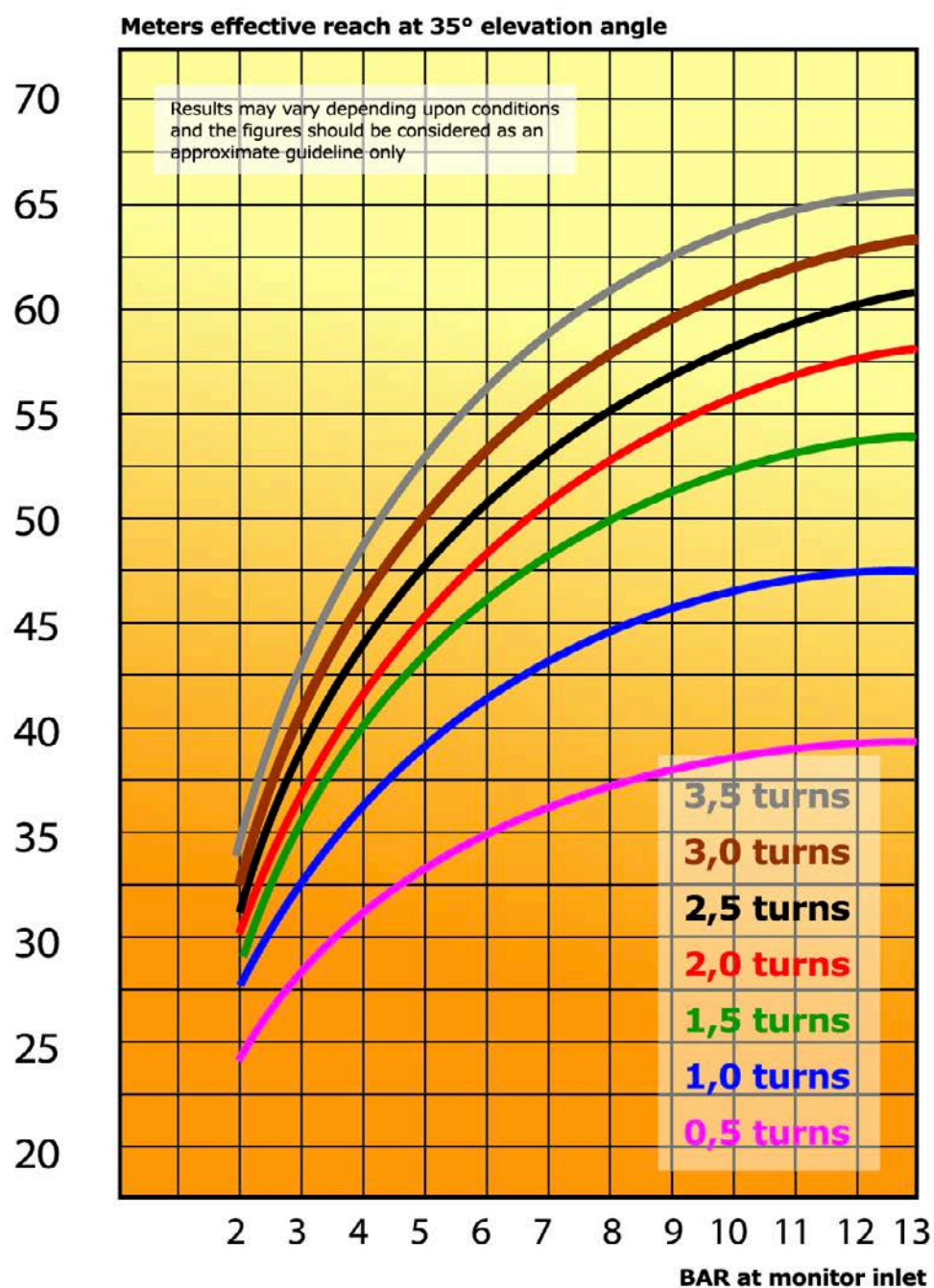
Flow Chart with Integ 50 Jet/Spray Tip



FORCE 50 REACH CHART

Reach Chart with Integ 50 Jet/Spray Tip

Reach chart with INTEG 50 nozzle





FORCE 80™

3" ROBOTIC NOZZLE

All the benefits of the Force 50, but with a 3" internal pipe diameter for flows of up to 5000 liters per minute at 10 bars. Stainless steel 316L construction, fully enclosed industrial robot-type 24V brushless DC (BLDC) motors, high quality gears, and compact design.





FORCE 80 QUICK SPECIFICATIONS

3" ROBOTIC NOZZLE

Max Flow: 5 500 liters (1 453 gallons) per minute

Type:	Remote Controlled	
Material:	Stainless Steel 316L	
Range of Motion:	360° rotation / 180° vertical movement	
Base Connection:	3" Male BSP or flange (ANSI, DIN, JIS)	
Nozzle Tip Connection:	3" Male BSP	
Motor Type:	24V Brushless DC (BLDC)	
Certificates:	Bureau Veritas (BV) Type Approval / CE Marked / Manufactured at ISO 9001:2015 Certified Facilities	
	Metric	Imperial
Int. Pipe Diameter:	80 mm	3" inches
Dimensions (with nozzle):	34 x 48 x 75 cm	13.4" x 18.9" x 29.5" inches
Weight (approx.):	30 kg	66 lbs
Max. Flow:	5 500 lpm	1 453 gpm
Max. Reach:	80 meters	87 yards
Max. Working Pressure:	12 bars	174 psi
Nominal Operating Pressure:	10 bar	145 psi

FORCE 80

DETAILED SPECIFICATIONS

ITEM / FEATURE	DESCRIPTION
Force 80 BLDC Robotic Nozzle Chassis:	<p>3" (80mm) electric 24V brushless motor (BLDC) robotic nozzle (a.k.a. "remote control monitor" or "water cannon") suitable for fire fighting.</p> <p>Made of 316L Stainless Steel (EN1.4404).</p> <p>Robust and suitable for harsh environments.</p> <p>Compatible with use of foam, salt-water, and other harsh agents.</p> <p>Smooth, large (80mm) pipe bends for minimal friction loss.</p> <p>Fully integrated and enclosed stainless steel worm gears, with Bronze (CuSn12) gear wheels.</p> <p>Fully enclosed BLDC brushless motors provide extremely long life, high torque and allow extremely accurate positioning and position feedback.</p> <p>Modular design for capability of changing damaged pipe sections and gear housings.</p> <p>Very low-maintenance; never requires re-greasing.</p> <p>Mass: Approx. 33 kg (73 lbs) with nozzle.</p> <p>Dimensions (w/ Integ nozzle): 34 x 48 x 75 cm (13.4" x 18.9" x 29.5" inches)</p> <p>Ambient temperature range: -25°C to +70°C.</p>
Maximum Operating Capacity (Flow):	5500 liters (1453 gallons) per minute; 330 m ³ /hr.
Max Working Pressure:	12 bar (174 psi)
Nominal Operating Pressure:	10 bar (145 psi)
Maximum Reach:	Approximately 80 meters at 5000 liters per minute at 10 bars (87 yards at 1320 gpm at 145 psi) in jet stream mode. Actual results can vary significantly depending on a number of factors (wind, piping, valves, pump, etc.)
Maximum Range of Motion:	360° horizontal; 180° vertical (+/- 90° from horizontal). Range can be easily set to any range desired. (May be limited if used with POINTER controller to 270° horizontal / - 20°/+ 70° or other custom specification. Inquire to learn more.)
Movement Velocity (Speed):	Standard: 24°/sec. rotational; 12°/sec. vertical Optional High Speed: > 60°/sec.; inquire for details.

FORCE 80

DETAILED SPECIFICATIONS

ITEM / FEATURE	DESCRIPTION
Manual Override:	Yes. Emergency manual override motor crank wheels available upon request.
Monitor Connection Types:	Base: 3" male BSP, or flange (ANSI, DIN, JIS). Nozzle: 3" male BSP.
Progressive, multi-directional movement:	Progressive speed control from extremely slow to max speed; simultaneous movement horizontally, vertically and nozzle jet/spray pattern control.
Programmable end positions:	End positions are set by software to any angle desired. Avoids wear and tear on motors, such as occurs with competing brands with mechanical hard stops.
Record & Play:	Simple record and play buttons to record all movements of the monitor and nozzle. Playback loops until interrupted by the operator.
Programmable Park Position:	Control system features an easy to record park (stow) position and a button for taking monitor to the park position.
Electric connection points:	M12 Multi-connectors on monitor and joystick electrical connections, allowing for quick installation, troubleshooting and replacement.
Modular Design:	Modular design for quick, simple replacement of all major components, including gear assemblies, pipe sections, joystick, electronic control box, cables, and motors.
INTEG 80 Jet/Spray Nozzle TIP:	<p>3" electrically adjustable jet/spray firefighting water/foam nozzle. Generates a full, effective fog cone.</p> <p>Stepless, adjustable spray angle from straight stream, over narrow spray to 140° fog cone.</p> <p>Stainless steel 316L, remote controlled.</p> <p>Fully enclosed BLDC brushless motors provide extremely long life, high torque and allow extremely accurate positioning and position feedback.</p> <p>Fully integrated gear drive mechanics and integrated brushless DC (BLDC) motor. Multi-connector for quick and simple installation.</p>
JETRANGE 4000 Tip:	Stainless steel 316L, 3" nozzle tip provides tight jet stream. Changeable flow discs (baffles) for flows ranging up to 4000 lpm (1056 gpm). For use with fresh- or salt-water, foam, dyes, and other harsh agents.



FORCE 80™

3" High Quality, Heavy Duty, Stainless Steel, Robotic Nozzle

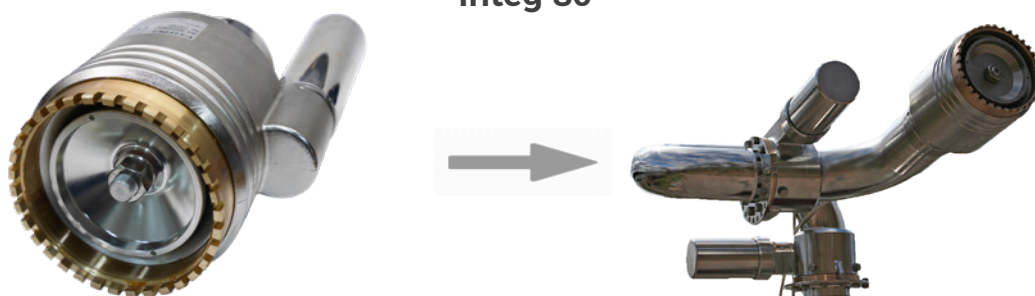
Manufactured at state-of-the-art, ISO certified facilities, the Force 80 is the pinnacle of elegant, Swedish design, engineering, manufacturing & efficient performance, with the highest quality materials and featuring industrial-robot-type brushless (BLDC) motors, there is no finer robotic nozzle on the market.

- Heavy duty industrial robotic nozzle
- 3" BSP Connection for a variety of nozzle tip options
- Stainless steel 316L pipe and worm-gears
- Industrial robotic brushless DC (BLDC) motors
- Laser-welded IP68 motor enclosure
- M12 fully sealed IP67 multi-connectors
- Position feedback accuracy better than 1/100°
- Over 360° Horizontal Movement (set any range by software)
- Over 180° Vertical Movement (set any range by software)
- 80 mm internal chassis pipe diameter
- Virtually maintenance-free; never requires re-greasing.
- Max Flow: 5500 lpm (1453 US gallons; 330 m3/hr)
- Max Reach: 80 meters
- Light Weight: 33 Kg (73 lbs.) including nozzle
- Base connection by 3" male BSP or flange (ANSI, DIN, JIS)



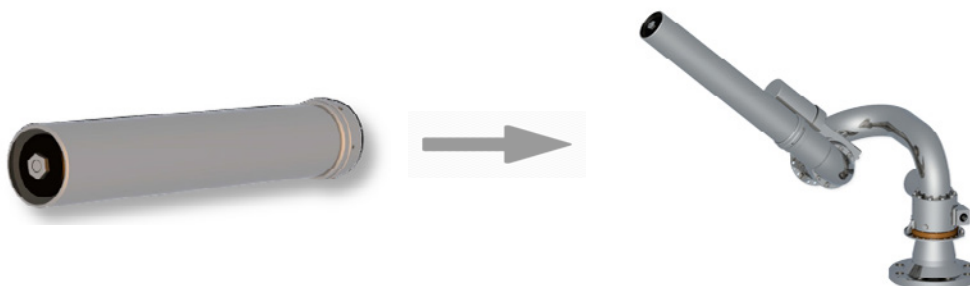
FORCE 80 NOZZLE TIPS

Integ 80



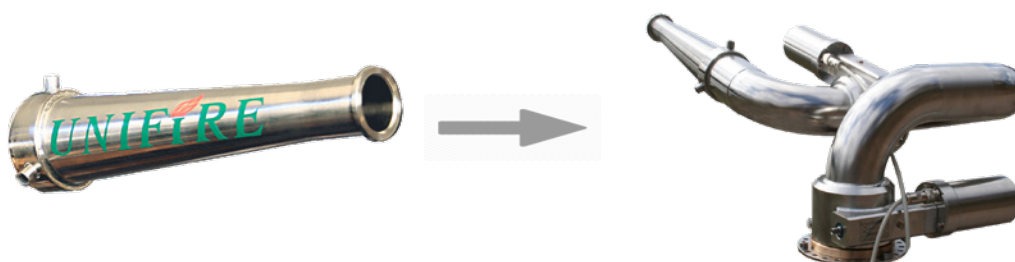
The Integ 80 is unique. Made of stainless steel 316L and bronze stream-shaper and featuring fully enclosed, high quality gears and stainless-steel-encased 24V DC brushless (BLDC) motors, the Integ 80 provides unbeatable performance and exquisite control from tight jet stream, to full fog cone, and everything in between.

JETRANGE 80



The JETRANGE 50 is ideal for applications requiring a tight jet stream. It features built-in stream shapers to achieve high performance, as well as interchangeable flow discs (baffles) to accommodate various flow requirements. The baffle also creates a natural vacuum, producing a very tight jet stream.

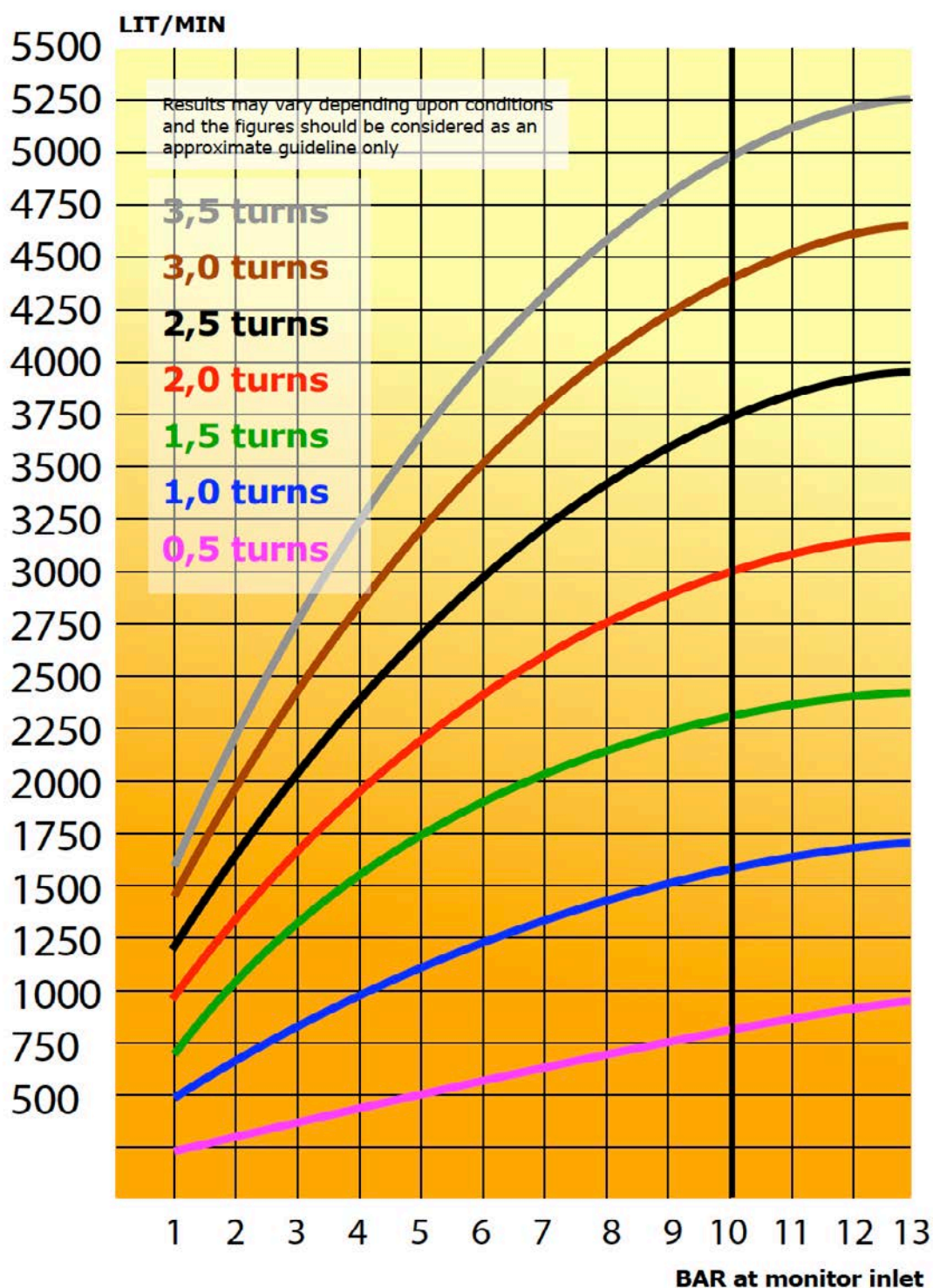
Smooth Bore (48 mm)



High quality stainless steel 316L smooth bore nozzle tip with a 48 mm opening. Ideal for jet stream applications, particularly where there may be dirt and particulates in the water source.

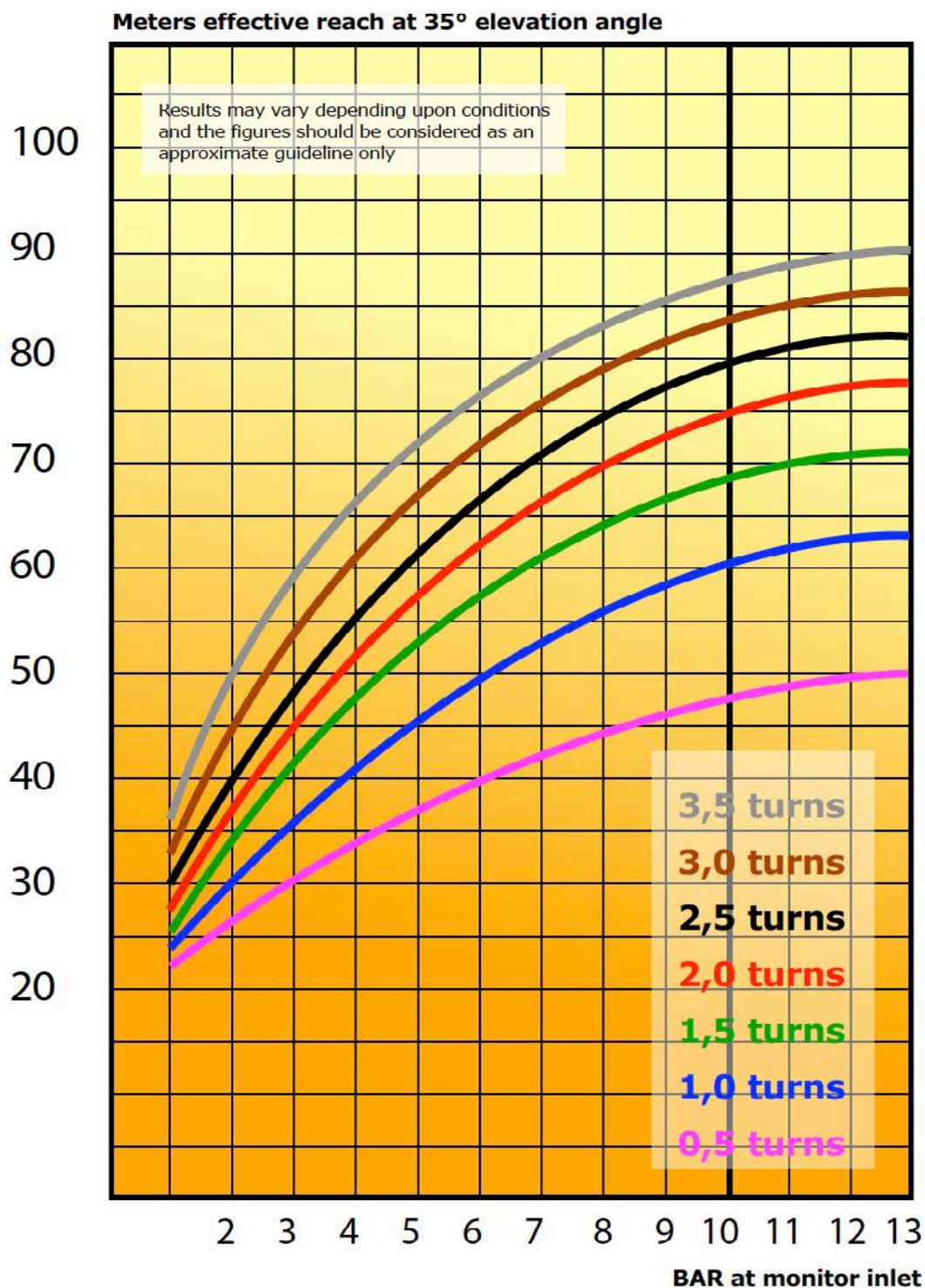
FORCE 80 FLOW CHART

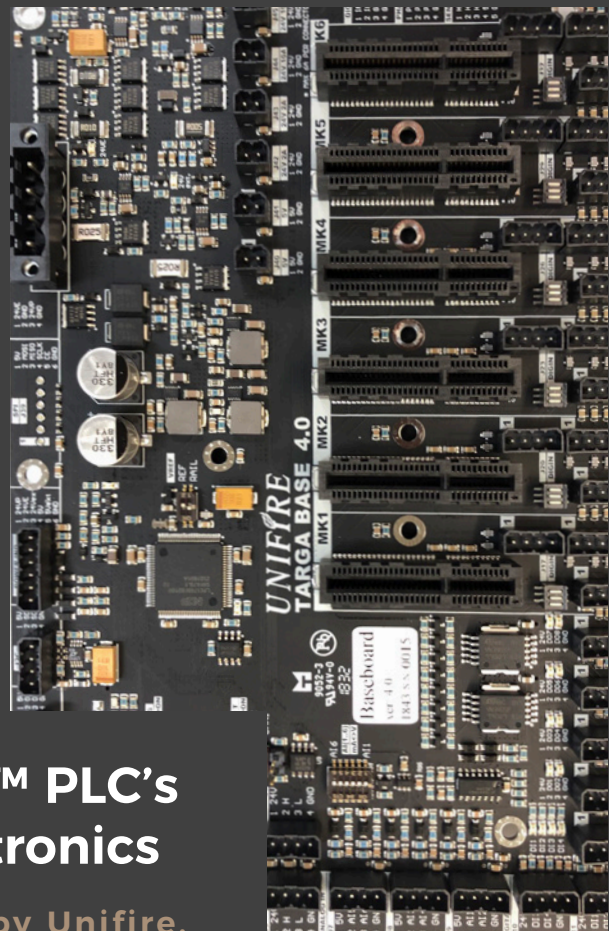
Flow Chart with Integ 80 Jet/Spray Tip



FORCE 80 REACH CHART

Reach Chart with Integ 80 Jet/Spray Tip

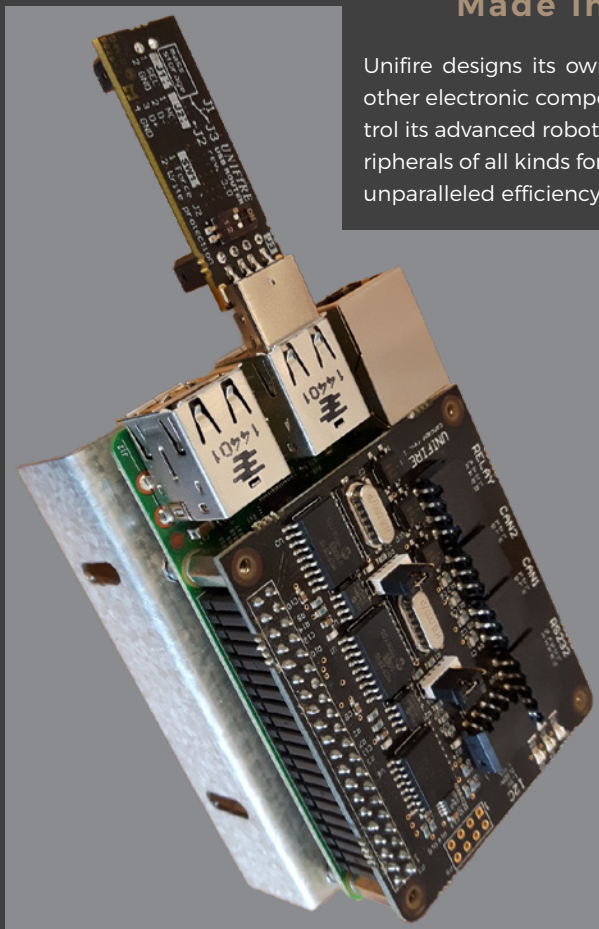




TARGA™ PLC's & Electronics

Designed by Unifire.
Made in Sweden.

Unifire designs its own state-of-the-art PLC's & other electronic components specifically to control its advanced robotic nozzle systems and peripherals of all kinds for total system control with unparalleled efficiency and flexibility.



TARGA PLC MODELS

Unifire's new, 4th generation TARGA and X-TARGA Programmable Logic Controllers (PLC's) are the culmination of more than a decade of meticulous, state-of-the-art electronic hardware and software design, which provide endless possibilities for the control of Unifire's robotic nozzles systems and peripheral system devices.

TARGA™

The TARGA PLC is a light-weight, compact, 24V PLC packed with features and flexibility to control any robotic nozzle system exactly how you want.



X-TARGA™

The X-TARGA PLC combines the TARGA, built-in power converter and additional, optional electronic components in an industrial-grade IP66 Rittal cabinet.



X-TARGA-S™

The X-TARGA-S PLC combines the TARGA, built-in power converter and additional, optional electronic components in a rugged, IP67 stainless steel 316 IP66 Weidmüller cabinet.



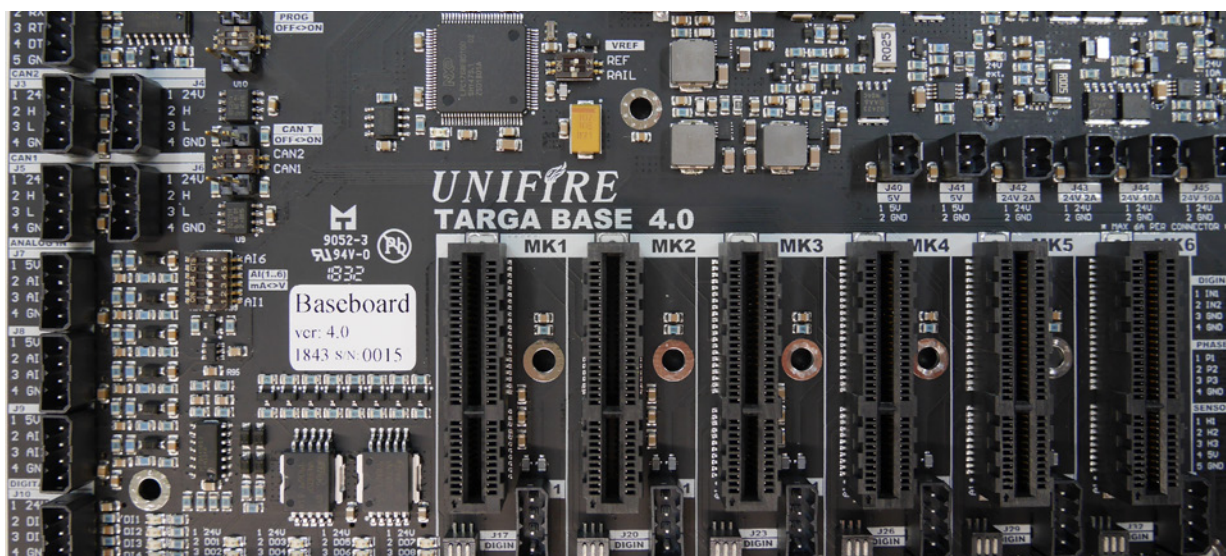
TOTAL SYSTEM CONTROL



DESIGNED IN-HOUSE BY UNIFIRE FOR THE SOLE PURPOSE OF TOTAL ROBOTIC NOZZLE CONTROL

UNIFIRE designed its TARGA programmable logic controller (PLC) and ancillary electronic components from the ground up for the sole purpose of providing the most powerful, efficient, flexible and comprehensive control of our robotic nozzle systems.

Complete flexibility to control motors, valves, lights, alarms, and virtually any other peripheral device. Control via joysticks, computer, tablet, smart phone, and/or the Internet. Customizable ap to provide the functions, look, language and feel that suits your specific needs.





TARGA™

Unifire's Revolutionary PLC for Total System Control

Unifire's one-of-a-kind, state-of-the-art TARGA PLC allows users to simply and economically tailor water cannon systems to their individual needs. From basic, low-cost, stand alone installations, to highly sophisticated and integrated systems.

The TARGA is a scaleable system platform that supports up to six BLDC motors and numerous analogue and digital inputs and outputs. This substantially raises the bar for the industry and opens worlds of possibilities—features unavailable anywhere else on the market. The Unifire TARGA PLC is the backbone of control robotic nozzles, valves, lights, peripherals, automatic systems, integrated systems, and much more.

Our cutting-edge technology allows our customers to control systems from their phone, tablet and computer, from anywhere in the world. Our systems can be networked and monitored and controlled from one or multiple or central control stations. Remotely receive notification of any component or functional anomalies, upload software updates or requested new system functions or changes.

Customized

Users can easily assign any function they wish to the numerous digital and analogue inputs and outputs of the TARGA PLC. The analogue signal can directly control any of the outputs on the TARGA PLC, or send the readings over a network to be displayed in a control room. Or, they can control an external unit, such as a pump motor or a valve. Limitless possibilities. The TARGA PLC is both powerful and flexible. It can be easily programmed to carry out automated sequences, by the press of a single button.

Scaleable

The TARGA can be fitted with up to six BLDC motor drivers. Thus a single TARGA PLC can control up to three water cannons. It supports any type of joystick: analogue, Synchron™ (point-and-shoot), digital, push-button, CANbus or I2C. Each Joystick can be directly routed to control the local TARGA system, or it can appear as a CANbus unit on a network. Several Joysticks can be connected to one TARGA PLC.

Network Ready

One TARGA can serve as a CANbus master in a larger system, allowing automation involving multiple TARGA PLC's. An infinite number of TARGA units can be connected together to make up small or even very large networks of water cannons for use in shopping malls, tank farms, warehouses, stadiums, highway tunnels, etc.

Autonomous

Each TARGA can receive signals from flame detectors or IR cameras and automatically aim at the fire. The TARGA can compute the water cannon's trajectory based on real-time readings. In a large system, each TARGA is an autonomous "cell", and a control room computer can be used for monitoring and remote controlling water cannons when desired.





TARGA PLC SPECIFICATIONS

Models:	TARGA1, TARGA2, TARGA3, TARGA4, TARGA5, & TARGA6 (digit represents # of installed BLDC driver cards)
Power:	24V DC / 20 Amps
Weight:	1 kg / 2.2 lbs.
Dimensions:	225 x 225 x 125 mm / 8.9" x 8.9" x 5" inches
Communication Protocols:	2 x CAN 2.0 29-bit header (UniCAN) 125,250,500 kB/s, RS232, RS485 (Modbus, DMX, etc.)
Physical Layer Protocols:	USB, Ethernet (TCP/IP, web socket), others available per customer requirements
BLD Motor Driver Card Slots:	6 (each with 2 digital inputs)
Inputs:	4 digital inputs (NPT) + 2 per installed motor driver card, 6 analogue inputs (4-20 mA or 0-5V), expandable & customizable to customer requirements
Outputs:	8 digital outputs, of which 4 can be set to PWM, expandable to customer requirements
Connector Types:	M12 A/B coded, 4P, 5P, 8P, 12P
Certificates:	CE Marked, produced at ISO certified facilities

TARGA PLC DIMENSIONS



X-TARGA



**RITTAL IP66 Steel
Plate Cabinet**

X-TARGA-S



**Weidmüller IP67
Stainless Steel cabinet**

X-TARGA™ & X-TARGA-S

Unifire's Revolutionary, Industrial & Marine IP66 PLC for Total System Control

The X-TARGA is Unifire's revolutionary TARGA PLC (Programmable Logic Controller), mounted in one of two choices of IP66 cabinets, both designed for the harsh environments and power supply from 110 to 230 V AC at 50 or 60 Hertz., for the total, flexible control of Unifire's advanced robotic nozzle systems and a virtually-endless variety of other system peripherals and components. The unique TARGA system allows users to simply and economically tailor water cannon systems to their individual needs. From basic, low-cost, stand alone installations, to highly sophisticated and integrated systems.

Both cabinet types are IP66 rated and designed for the harsh environments, both on- and off-shore. The X-TARGA comes standard with a builtin power converter from 110 to 230 V AC at 50 or 60 Hertz to TARGA's native 24VDC / 20 Amp requirement. The mounted TARGA (see TARGA section of this brochure) is a scaleable system platform that supports up to six BLDC motors and numerous analogue and digital inputs and outputs. The Unifire X-TARGA PLC controller for robotic nozzles, valves, lights, peripherals, automatic systems, system integration, and much more.

2019 technology allows our customers to control systems from their phone, tablet and computer, from anywhere in the world. Network systems together and control from a central control station, and even monitor the system status, learn of any component failures, and upload system software updates or system function changes requested from Unifire.

X-TARGA

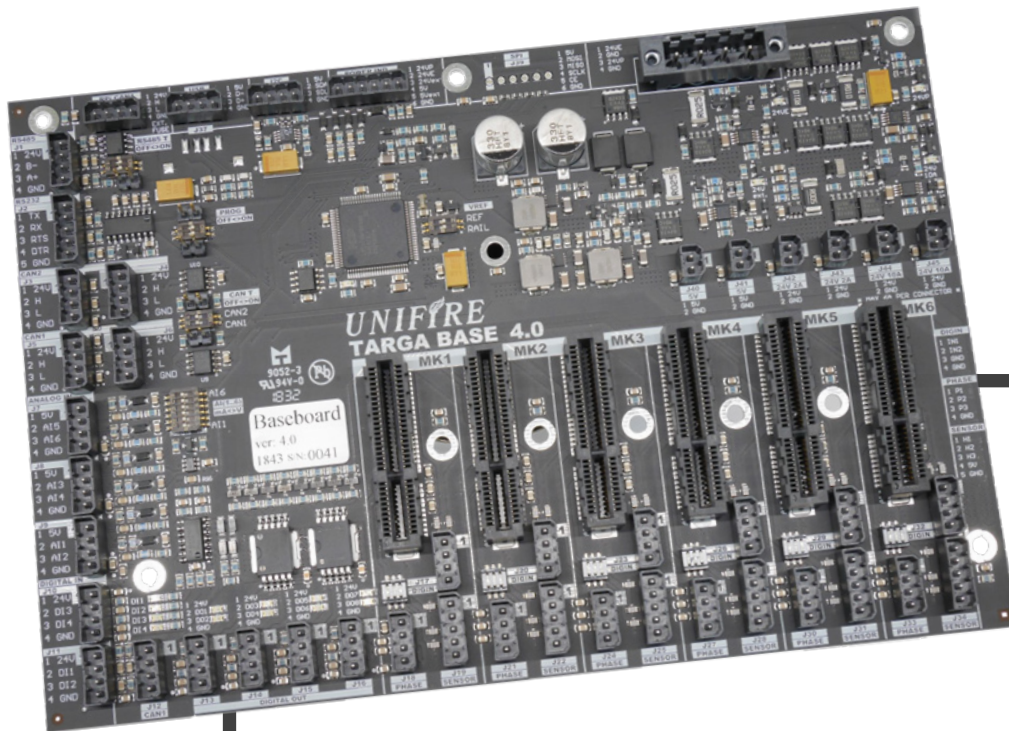


X-TARGA-S



X-TARGA(-S) PLC SPECIFICATIONS

Models:	X-TARGA & X-TARGA-S (each followed by a number 1-6, representing the quantity of installed BLDC driver cards)
Power Input:	110/230 V AC, 50/60 Hz (built-in converter to 24VDC / 20 Amps)
Approximate Weight:	15 kg / 33 lbs.
Cabinet Types:	<p>Model: X-TARGA: RITTAL IP66 Steel Plate cabinet type: AE 1045.500, Dimensions: 500 x 400 x 210 mm / 19.7" x 15.8" x 8.3" inches, mass: 13 kg.</p> <p>Model: X-TARGA-S: Weidmüller IP67 Stainless Steel cabinet type: KTB MH 453820 S4E1 Stainless Steel 316L Cabinet, Dimensions: 458 x 382 x 200 mm / 18" x 15" x 7.9" inches, mass: 11.54 kg.</p>
Communication Protocols:	2 x CAN 2.0 29-bit header (UniCAN) 125,250,500 kB/s, RS232, RS485 (Modbus, DMX, etc.)
Physical Layer Protocols:	USB, Ethernet (TCP/IP, web socket), others available per customer requirements
BLD Motor Driver Card Slots:	6 (each with 2 digital inputs)
Inputs:	4 digital inputs (NPT) + 2 per installed motor driver card, 6 analogue inputs (4-20 mA or 0-5V), expandable & customizable to customer requirements
Outputs:	8 digital outputs, of which 4 can be set to PWM, expandable to customer requirements
Connector Types:	M12 A/B coded, 4P, 5P, 8P, 12P
Certificates:	CE Marked, produced at ISO certified facilities



TARGA PCB

Unifire TARGA PCB

Many PLC's (programmable logic controllers) are commercially available on the market, and are used by many of Unifire's competitors.

But Unifire won't settle for standard, off-the-shelf solutions. At Unifire, we think for ourselves. And, we are very demanding.

Commerically-available PLC's are bulky, designed to suit a wide variety of industries and applications, and are therefore over-loaded with bulky electronics, components and software, markedly reducing efficiency, and often failing to include key features Unifire demands for its advanced systems.

That is why Unifire has spent years meticulously designing and improving our own TARGA PCB (printed circuit board), tailor-made for our robotic nozzle systems and their peripherals, and to accommodate technologies yet to come. Our newest generation PCB is cutting-edge technology and provides a huge range of possibilities, accommodates rapid, dynamic technological advances, maximizes efficiency in hardware and software design, and is the perfect solution for total control of our robotic nozzle systems.

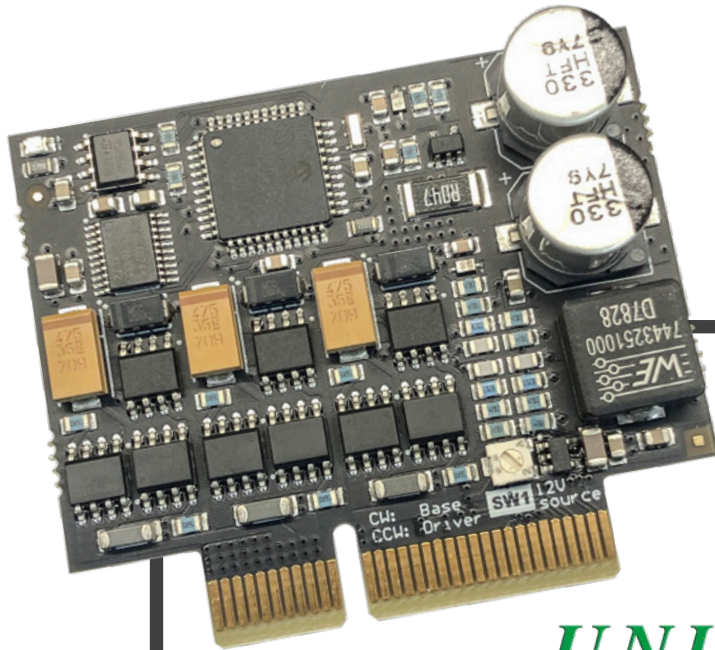
Manufactured for Unifire in Sweden at ISO 9001 & 14001 certified, state-of-the-art facilities, side-by-side with electronics for Ericsson, SAAB Space, Volvo, and other industry-leading, highly demanding companies.

When quality matters, look to Unifire.

Features

The Unifire TARGA PCB is loaded with features, including, to name a few:

- 6 BLDC Motor Driver Slots for the control of brushless motors
- A variety of communication protocols, including 2 x CAN 2.0 29-bit header (UniCAN) 125,250,500 kB/s, RS232, RS485 (Modbus, DMX, etc.
- USB, Ethernet (TCP/IP, web socket), others available per customer requirements
- 4 digital inputs (NPT) + 2 per installed motor driver card,
- 6 analogue inputs (4-20 mA or 0-5V), expandable & customizable to customer requirements
- 8 digital outputs, of which 4 can be set to PWM, expandable to customer requirements
- Reserved control pins, allows to work with other control boards
- Comes with development resources and manual (examples in wiringPi/python)



UNIFIRE BLDC Driver Card

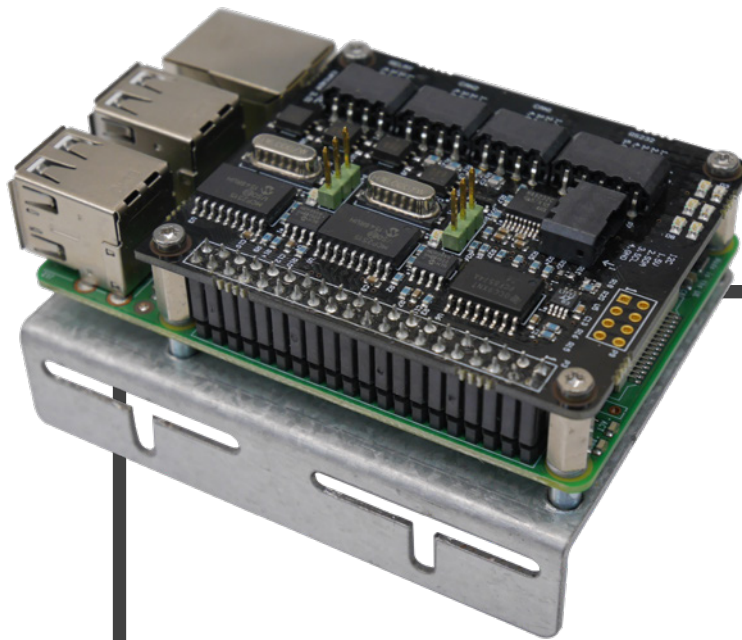
Unifire BLDC Motor Driver Card

Like all of our electronics, Unifire designed its own BLDC motor driver card to deliver the functionality and efficiency unique to Unifire's robotic nozzle systems.

Unlike competing solutions, Unifire uses 3-phase 24V DC brushless (BLDC) motors to control its robotic nozzles. These are the same motors used in numerous industrial robots – and for good reason. BLDC motors offer numerous advantages over standard, “brushed” DC motors used in most competing products., such as higher torque, higher precision in their control, and much longer life.

Controlling BLDC motors, however, requires special electronics to precisely control the three phases sent to the motors. That's where Unifire's unique BLDC motor driver cards come in.

With Unifire's BLDC motor driver cards, our customers benefit from the highest precision steering and control of any robotic nozzle on the market –with an accuracy over over 1/50th of a degree.



Unifire Web Server

Take Complete Control Of Unifire's Robotic Nozzle Systems From Anywhere In The World, Thanks To Our Web Server—A Full-Blown, Internet-Ready Pc, Built In To Our Targa Plc, That Fits In The Palm Of Your Hand!!

Welcome to the Internet of Things!

The Unifire Web Server is our optional, full-functioned personal computer (PC) add-on to our entire line of TARGA PLC's.

The Unifire web server, combined with our CAN Bus Cape, allows all models of Unifire's TARGA PLC's to come fully online.

Thanks to the Unifire Web Server, our customers have the option of taking full, secure control of Unifire's advanced robotic nozzle systems with our InterAct software and app.

Have a phone? Control our systems. Have a tablet? Control our systems. Have a computer? Control our systems. Got Internet access? Control our systems from anywhere in the world!

Features

The Unifire Web Server is a key component of Unifire's InterAct system. Combined with our CANbus Cape, USB Router and InterAct software and Graphical User Interfaces, adds to Unifire's advanced robotic nozzle systems a host of networking and control capabilities, including over the Internet.

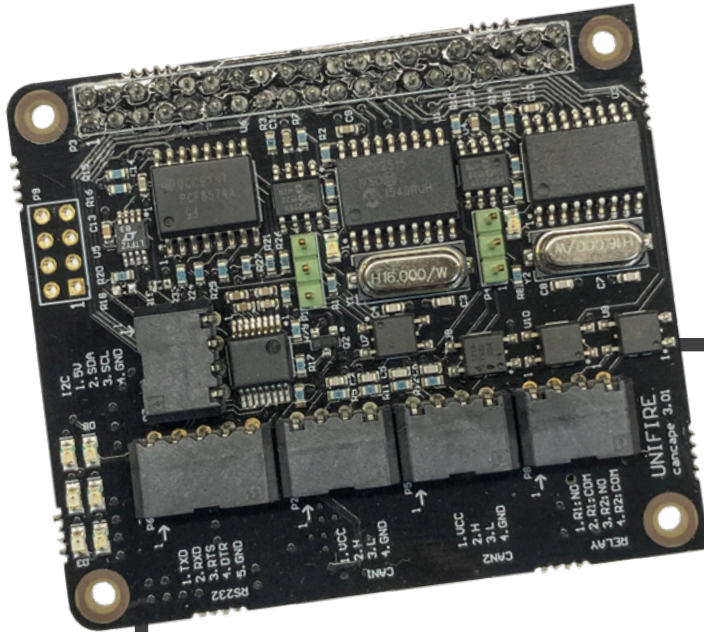
Unifire's already powerful and flexible InterAct graphical user interface can be custom designed to your specific needs, look, function as, language and look, with virtually unlimited flexibility to control systems with advanced logic sequences and automated functions.

Specifications

- SOC: Broadcom BCM2837B0, Cortex-A53 (ARMv8) 64-bit SoC
- CPU: 1.4GHz 64-bit quad-core ARM Cortex-A53 CPU
- RAM: 1GB LPDDR2 SDRAM
- Operating system support: Linux and Unix
- WIFI: Dual-band 802.11ac wireless LAN (2.4GHz and 5GHz) and Bluetooth 4.2, capable of running at 2.4GHz and 5GHz.
- Ethernet: Gigabit Ethernet over USB 2.0 (max 300 Mbps)
- Thermal management: Yes.
- Power over Ethernet
- Video: Yes – VideoCore IV 3D. Full-size HDMI
- USB 2.0: 4 ports
- Power: 5V/2.5A DC power input

"Here's to the crazy ones. The misfits. The rebels. The troublemakers. The round pegs in the square holes. The ones who see things differently. They're not fond of rules. And they have no respect for the status quo. You can quote them, disagree with them, glorify or vilify them. About the only thing you can't do is ignore them. Because they change things. They push the human race forward. And while some may see them as the crazy ones, we see genius. Because the people who are crazy enough to think they can change the world, are the ones who do."

— Apple Inc.



UNIFIRE CAN Bus Cape

Unifire CAN Bus Cape for Raspberry Pi

Communication Hat with 2x CAN, RS232, I²C and relays.

Technical Overview

The Unifire CAN Cape adds serial networking options to your Raspberry Pi utilizing the GPIO.

The two onboard CAN Bus ports utilize the Microchip MCP2515 CAN controller, accessible per SPI interface, in combination with the Microchip MCP2551 CAN transceiver. 120Ω termination is available by jumper or control over GPIO.

The RS232 port is controlled via the RPi's UART using the MAX3232 line-driver and receiver.

The I²C is buffered by LTC4313 and the two onboard photoMOS relays allow for simple digital control of external equipment. The IO expander for the I²C bus allows for even further expansions.

Onboard is also a DC/DC transformer allowing the CAN cape to supply the RPi with power. PoCAN (Power over CAN) makes this possible.

The CAN cape is also equipped with six blue LED indicators.

Features

The Unifire CAN Cape adds serial networking options to your Raspberry Pi 2B/3B/3B+ and other units with compatible GPIO specifications.

- Raspberry Pi connectivity, compatible with Raspberry 2B/3B/3B+
- CAN function, two onboard CAN controllers MCP2515 via SPI interface, with transceivers MCP2551
- RS232 function, controlled via UART, half-duplex communication, line driver and receiver MAX3232
- Buffered I2C allows for high speed communication
- 8 bit I/O expander for I²C – PCF8574
- 2 photoMOS relays, allows digital control of external equipment

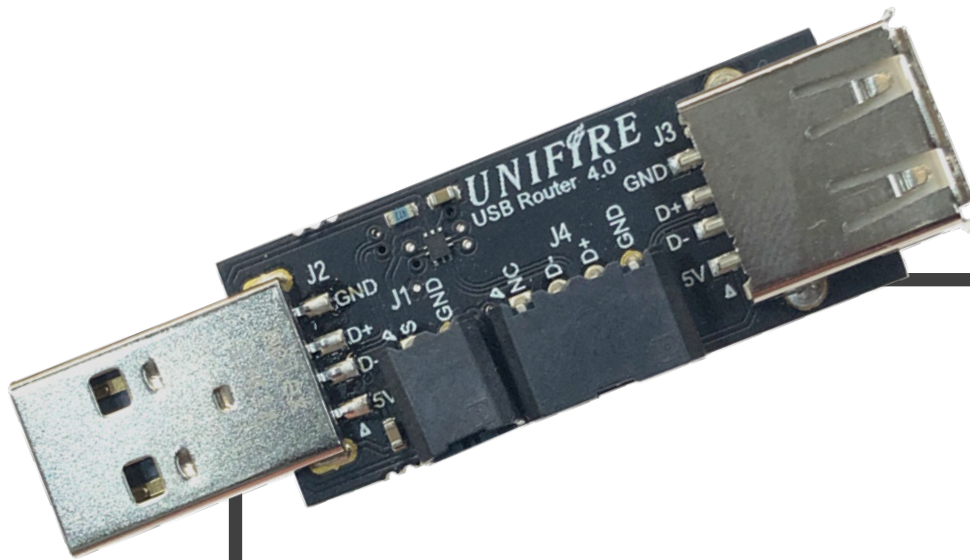
Specifications

- Operating voltage: 8 - 40VDC (PoCAN) or 5V (from RPi)
- 2x CAN controller: MCP2515
- 2x CAN transceiver: MCP2551
- 232 line driver and receiver: MAX2323
- Buffered I²C
- 8 bit I/O expander for I²C – PCF8574
- DC/DC step down voltage regulator, LM2676
- Dimensions: 65mm x 56mm
- Mounting hole size: 2,54mm

Implementation in the Unifire System

The CAN cape is the centerpiece and the physical interface that connects the TARGA™ to the RPi. RS232 is used for programming the boot sector of the TARGA, I²C is used for direct hardware control (full duplex). One CAN interface is used to allow the RPi to take part in the CAN universe – as an active part (slave(s)) and/or as a passive listener (CANmon).

The relays are used to control the USB router and thus allows for remote programming of the TARGA. The IO expander allows for supervision of the different power circuits on the TARGA, thus allowing for remote supervision of internal circuits at all times.



UNIFIRE USB Router

USB Router for Unifire CAN Bus Cape

Unifire designed its USB Router to support the Unifire Web Server and Raspberry Pi PC's.

The USB Router is a simple switch that enables the connection of one USB stick to either the Raspberry Pi or the TARGA PLC.

When connected to the Raspberry Pi, the user can populate the stick with software and thereby remotely update the TARGA software, from anywhere in the world.

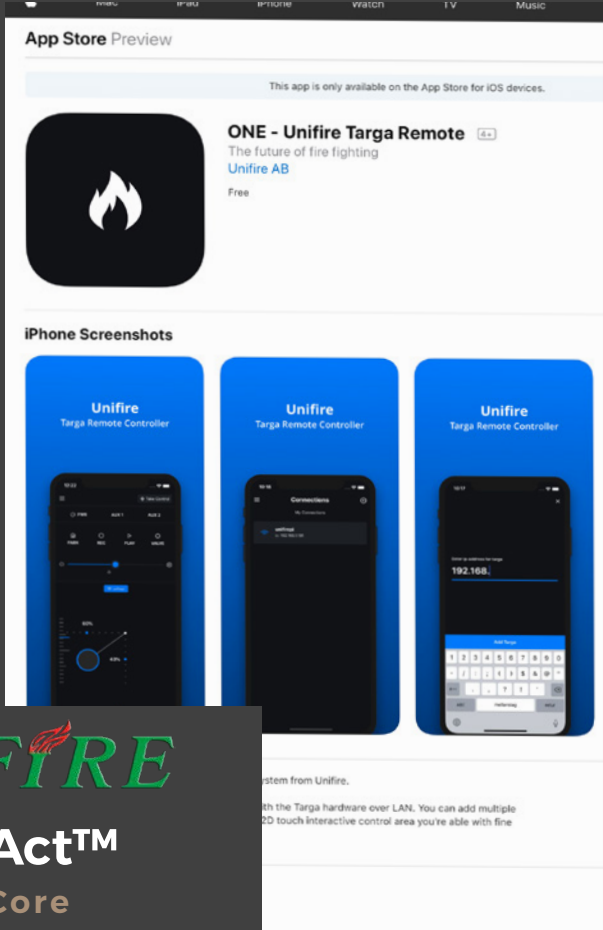
Thanks to the Unifire USB Router, Unifire can remotely provide its customers with new customizations, functions, upgrades, patches and fixes, in seconds.

"Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution."

— Albert Einstein

"Whether it's in our cars, our hospitals or our homes, we'll soon depend upon robots to make judgement calls in which human lives are at stake. "

— Kristen Clark

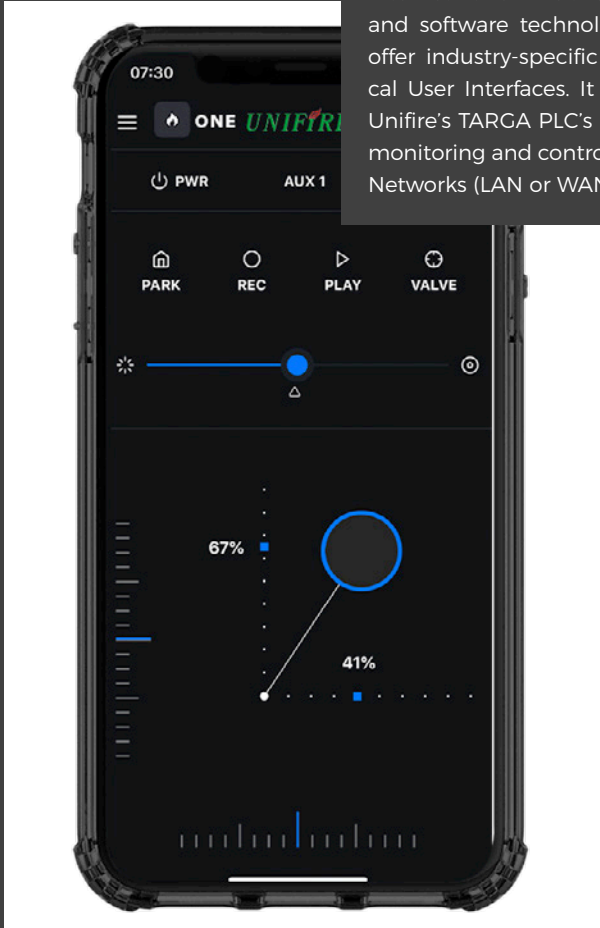


UNIFIRE

InterAct™

GUI Core

InterAct is Unifire's core electronic hardware and software technology which enables us to offer industry-specific and customized Graphical User Interfaces. It is an optional add-on to Unifire's TARGA PLC's and it enables full system monitoring and control over a Local & Wide Area Networks (LAN or WAN).





InterAct™

Unifire's Powerful Core Technology
Enabling LAN & WAN Robotic Nozzle
System Monitoring & Control





InterAct™

A Powerful Core for Graphical User Interfaces (GUI's) for Exquisite Remote Control of Unifire Robotic Nozzles

Product Description

The first and only of its kind, InterAct is Unifire's core technology enabling powerful and flexible control of complete robotic nozzle systems from your preferred devices over WiFi or the Internet.

Our predesigned and custom user-friendly Graphical User interfaces (GUI's)—including our **ONE App** for iOS & Android, our **FlameRanger GUI** and our **VEHICLE GUI**—provide full control and display of all devices in the system, such as robotic nozzles, valves, flame detectors, thermal imaging cameras, sensors, lights, alarms, tank levels, flow and pressure gauges, etc.

An unlimited number of authorized operators can view and take control at any time, by smartphone, tablet and/or computer.

Fully Network-Ready, of Course

For large installations with multiple robotic nozzle systems, InterAct can offer the ability to network and control numerous systems from one or more command stations.

The system can allow for full remote control on- or off-site from any authorized device—smart phone, tablet, and computer, over WiFi or over the Internet.

Moreover, the system can monitor itself and provide system status information and warnings, around the clock. If any faults on the system are detected, the system can instantly display an alert, and even send an SMS, with specific and complete details of the exact component or issue in need of attention.

InterAct™

All Data. All the Time. At Your Fingertips.

The InterAct can display all system data, ranging from real-time, precise motor and three-dimensional nozzle position, valve status (open/closed), inputs from other systems and peripheral devices, including, for example, tank level indicators, wind speed (and wind-speed correction data), flame detector status and data, infrared camera data, alarms, sensors, etc.

All data available on the CAN network can be displayed and controlled on Unifire's Graphical User Interfaces.

Unlimited Possibilities

All of our Graphical User Interfaces come loaded with features, including toggle on/off switch, virtual, multi-directional joystick with variable speed control, one-button record/play feature, 2 auxiliary switches, and much more.

What's really cool, however, is that with InterAct, Unifire can offer custom-made GUI's that are extremely robust, with fully-customized functionality, extending way beyond what any joystick can possibly do.

Say, for example, you want a single button that first turns on a warning light, then after 10 seconds takes the robotic nozzle to position x, y, z, then, once the nozzle is in position, opens the valve to commence water flow, then changes the spray pattern from fog for 20 seconds, then to jet stream for 10 seconds, repeated five times, then closes the valve, then takes the robotic nozzle back to a park position? No problem.

Now, say you want ten other custom buttons, each with its own separate set of sequences and actions. No problem.

Oh, yeah - you need it in Japanese? Sure.

What's that? You want your custom colors and logo? No sweat!

And you want to control it from 4 000 kilometers away. Done!

Ah, and you have 3 systems and want to display and be able to control all 3 from a single device. Voila! Your wish is our command!



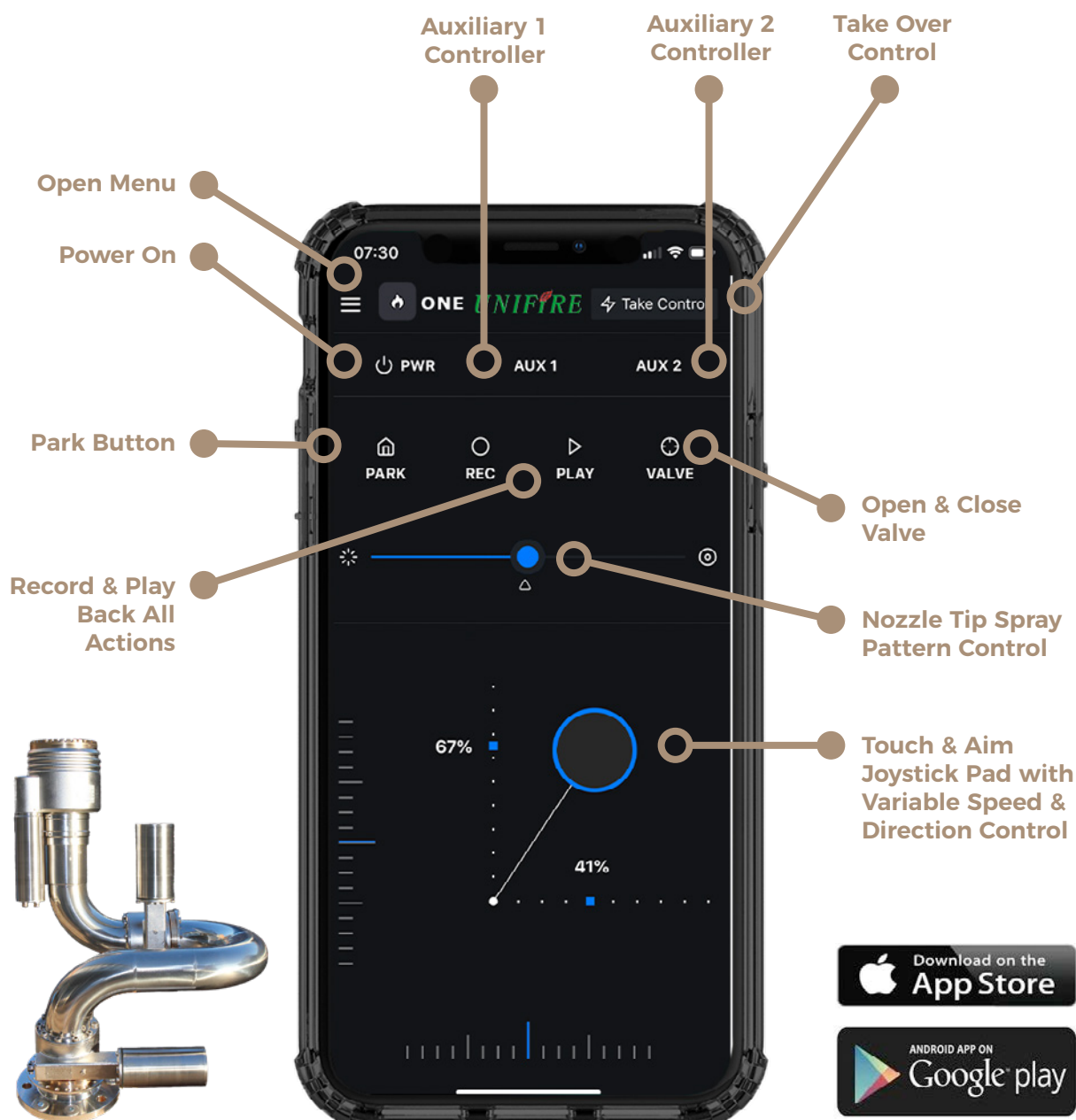
UNIFIRE

Graphical User Interface

ONE

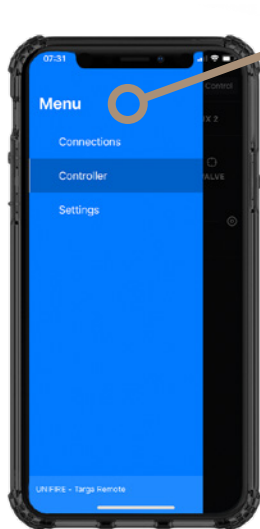
App for iOS & Android

The First & Only Robotic Nozzle Control App on the Market, *ONE* is Unifire's revolutionary, full-functioned graphical user interface & virtual joystick for iOS & Android, available for free on Google Play Store and Apple iPhone App Store.



ONE

App for iOS & Android



Intuitive Menu

Easily control your system
Connection, Settings or go to the
Control Screen.



Simple Setup

Simply enter the IP Address of your
System Router for quick system
connection and control.

With Unifire's InterAct core technology and our ONE app, you no longer need a joystick.

For a fraction of the price of our competitors' tethered and wireless joysticks, you can turn any device into a powerful wireless controller. And, it's easier to use and comes loaded with more functions than most competing controllers!

UNIFIRE

Welcome to 21st Century robotic nozzle system control!



FLAMERANGER

Flame hits

Flames

1

Fire detected!
1 flames has been detected,
please stay alert!

Grid

2D flame
detection
representation

3D Model

Flames

Hit	X	Y	Z	Row	Col
#0	3.30	1.70	1.60		

CONNECTION

status: open
ip: 192.168.0.212
port: 8080
Message: Connection to web/192.168.0.212-8080 established

DETECTORS

#	MODEL	C-STATE	ALARM	PRO
#100	1	S,A,S,A	-	-
#101	2	S,A,S,A	-	-

FLAMES

FLAME	X	Y	Z	ROW	COL	GROUP
#0	3.30	1.70	1.60	-	-	Flame
#1	-	-	-	-	-	Flame
#2	-	-	-	-	-	Flame
#3	-	-	-	-	-	Flame
#4	-	-	-	-	-	Flame

NOTES

NOTES	STATUS
Monitor 1	auto monitoring
Monitor 2	auto monitoring
Monitor 3	auto monitoring

SYSTEM

SOFTWARE	APPLICANT	APPLICANT-PRO
100	1000	10

DECOMP

DECOMP	DECOMP
1.00	1.00
1.00	1.00

STATUS

Sta	Typ
100.00	100.00

NOT-AND

NOT-AND	NOT-AND
100.00	100.00

FlameRanger™

Revolutionary, Fully Automatic Fire Detection & Suppression System

Welcome to the age of Robots!

Unifire's FlameRanger is the first-and-only of its kind fully autonomous fire fighting robot, keeping people and property safe 24/7/365.





FlameRanger™

The World's First Fully Autonomous Fire Fighting Robotic Nozzle System Based on Unifire's Proprietary Stereo IR Array Flame Detection Technology

The Problem

Fire grows exponentially quickly. Traditional methods often result in late detection of a fire and in long wait times until fire fighters can intervene with adequate fire suppression. By that time, fire can lead to catastrophic loss to property and life and may be out of control.

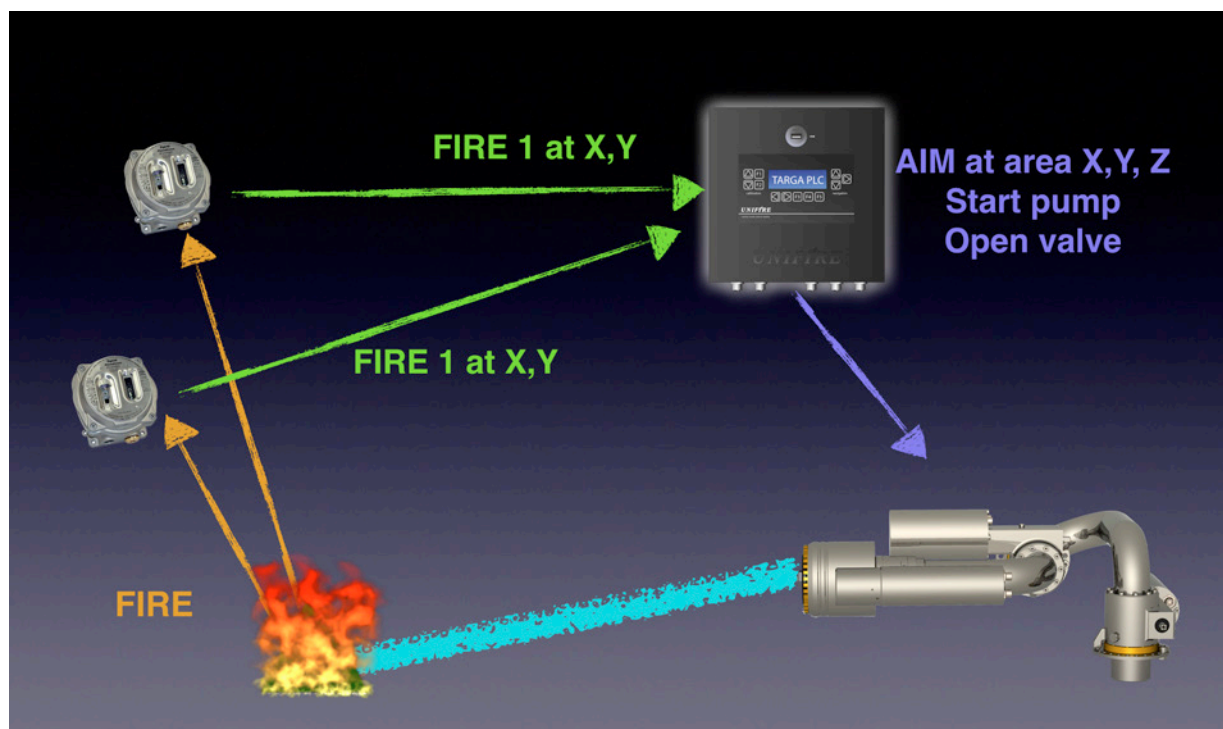
The Solution

Rapid detection, coupled with rapid, accurately-targeted, high-flow suppression, is the key to maximizing the chances of successfully fighting a fire—*before it spreads out of control*.

Enter Unifire's FlameRanger...

Unifire's FlameRanger constantly detects for the presence of flames, 24/7/365. Any fire that breaks out is detected almost instantaneously. Unifire's sophisticated computing and software technology guide its advanced robotic nozzles with precision to aim a high volume of water or foam to directly suppress the fire (or fires) at its source. Fire suppression commences in as little as 5 seconds, long before it gets out of control.

Problem Solved!



FlameRanger™

Revolutionary Fire Fighting

Introducing the first-of-its kind, fully automatic fire detection & suppression system combining two IR array flame detectors with our advanced, high flow robotic nozzles and our state-of-the-art electronic hardware and software.

The result? A robot fire fighter on duty 24/7/365, which reacts to fire in seconds with eerie, seemingly human-controlled movement to suppress the fire at its source, with a high volume of water (or foam), high accuracy, and with full, real-time three-dimensional data.

So, What Is It, Exactly?

Background & Objective:

Every large fire starts as a small fire and grows exponentially. Rapid detection and suppression are crucial to successfully fighting a fire, before it has a chance to develop into a catastrophic, fully developed fire.

What FlameRanger Does:

The FlameRanger is a high capacity, fully automatic, fire detection and suppression robotic nozzle system that operates completely autonomously around the clock, while providing constant system status information and allowing human operator intervention and remote control at all times.

"Don't think of robots as replacements for humans -- think of them as things that will help make us better at tackling many of the problems we face."

— Eoin Treacy

FlameRanger™

How it Works:

The system uses 2 x FV300 Array IR Detectors to detect and locate a fire in 3 dimensions (x, y, z). Up to 4 fires can be detected simultaneously.

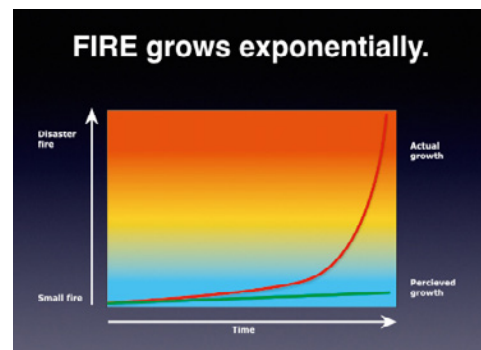
When a flame is detected, the system guides our advanced robotic nozzles to aim at the fire and open the valve (or start the pump) when the nozzle is aimed at the target fire.

A large flow of water (or foam) is then accurately aimed directly onto the target fire (or fires). The spray angle is also automatically adjusted. The stream dynamically follows the flame if the flame moves or spreads. Fire location and robotic nozzle position are updated ten times a second.

When fire is no longer detected, the system automatically shuts off and returns to stand-by mode, and the water supply closes automatically, takes the robotic nozzle back to stow position, and the system remains ready to reactivate should a flame reignite.

InterAct™ - Graphical User Interface:

Each individual, fully self-contained, stand alone system has a user-friendly, intuitive graphical user interface, called the Unifire InterAct™. InterAct provides secure, remote monitoring and remote control of all systems, providing personnel, in the control room and/or in the field, with the exact status of each unit 24/7/365.

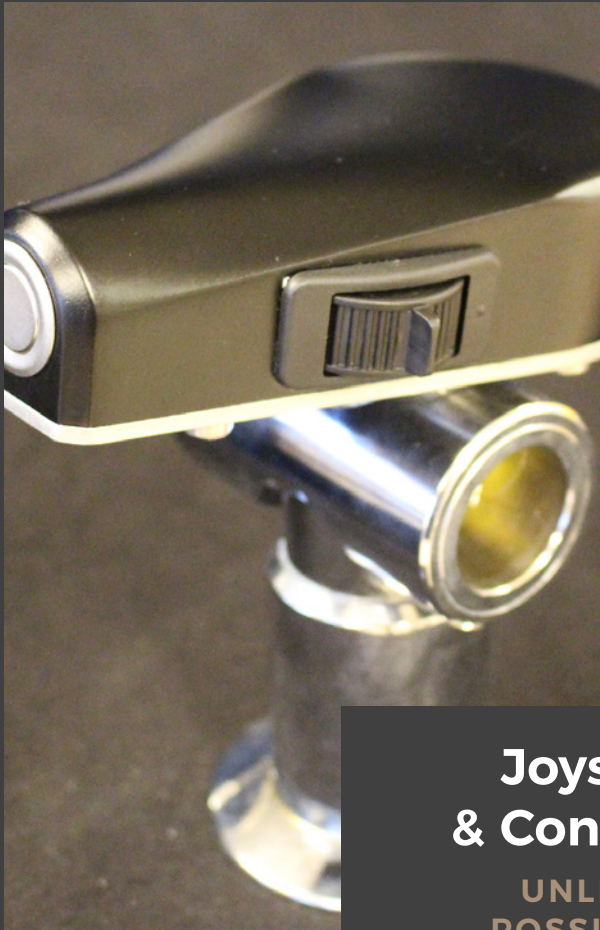


InterAct also makes it possible to manually remote control any system on the network at any time, regardless of whether a fire has been detected or not. This provides all of the benefits of traditional remote control monitor system and the speed and reliability of advanced high-tech flame detectors and robotics.

Groups of FlameRangers Can Cooperate:

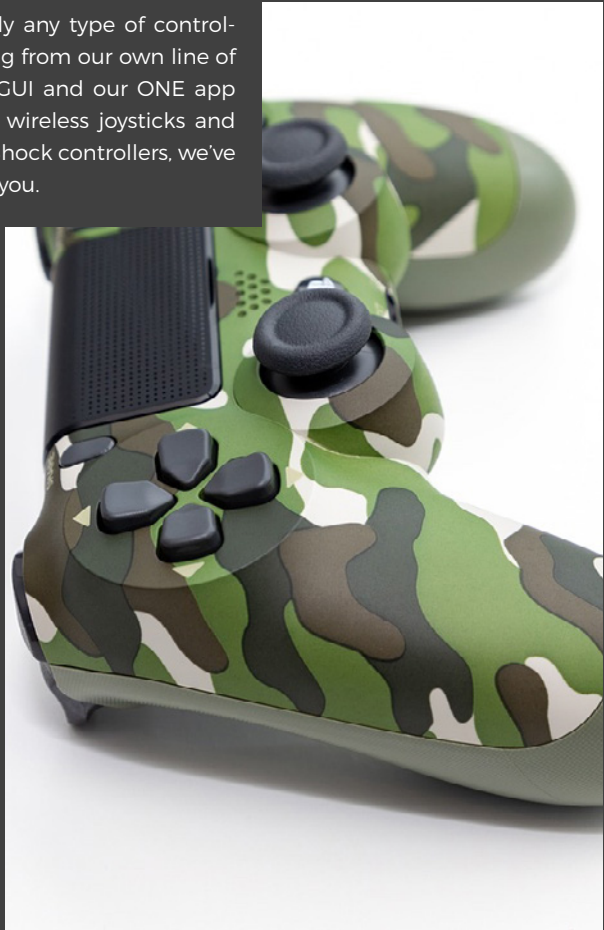
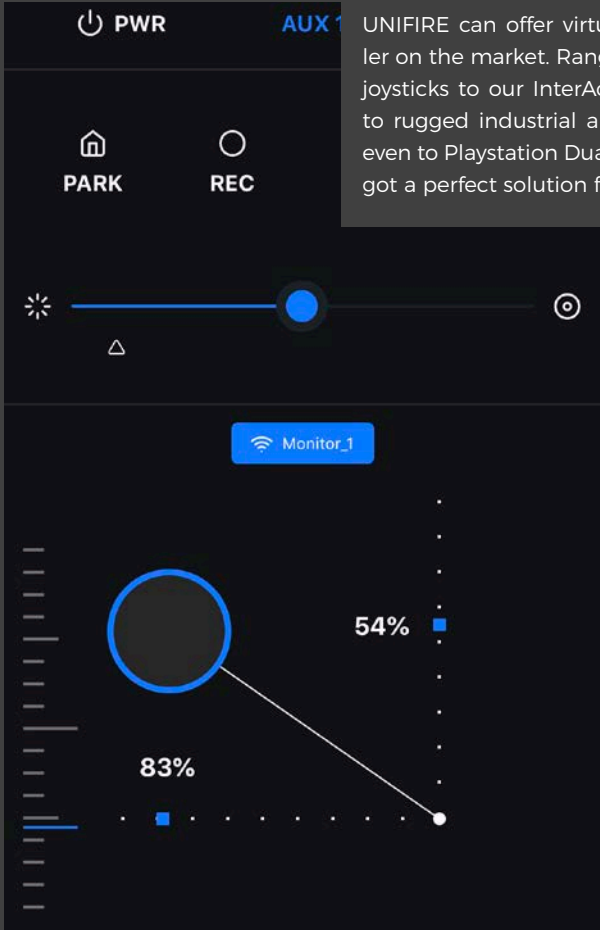
A FlameRanger system that detects a flame can be programmed to activate its neighboring systems to provide support to the suppression and to provide protection to the surrounding areas. And Unifire can provide the backbone for creating large networks of systems, all monitored and controlled from one or more central control stations.



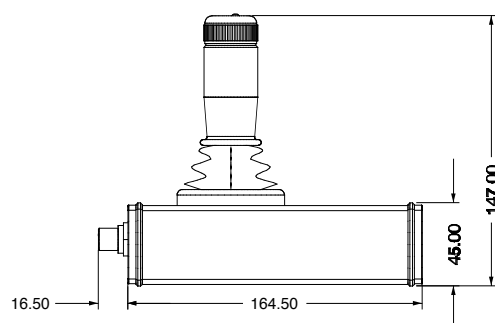


Joysticks & Controllers

UNLIMITED
POSSIBILITIES



UNIFIRE can offer virtually any type of controller on the market. Ranging from our own line of joysticks to our InterAct GUI and our ONE app to rugged industrial and wireless joysticks and even to Playstation Dual Shock controllers, we've got a perfect solution for you.



π™ (Pi) CAN bus Joystick

CAN bus Progressive Speed, Full-Featured Joystick

Unifire's π (Pi) Joystick is Unifire's versatile, full-functioned, hand-held joystick for precise and intuitive control of Force robotic nozzles. Our most popular controller, it is robust and water resistant, with numerous features.

Specifications:

- Multifunctional CANbus joystick
- Intuitive, progressive speed control
- 3-Axis control (horizontal, vertical, nozzle)
- Nozzle spray pattern controlled by dial on tip of joystick shaft
- Record / Play - Record any sequence including velocity changes, pauses, & nozzle spray pattern. Play back in a continuous loop.
- Programmable park (stow) function
- LED Position Indicators for relative horizontal, vertical and nozzle positions
- Valve Control Button
- 2 auxiliary buttons for custom configuration & control of peripherals (e.g., lights).
- Up to 500 meter cable supported
- Hand-held
- Weighs only 1 Kg



Seriously Heavy duty!!
All chrome plated
brass and stainless
steel. Butter-smooth
action. Massively
supportive when the
going gets tough!

POINTER™ Synchron Joystick

Synchronized Movement of POINTER and Robotic Nozzle

The POINTER is Unifire's unique, synchron control device designed to provide a simple and intuitive human interface for controlling the Unifire's robotic nozzles.

The robotic nozzle's movements exactly follow and match the position of the POINTER.

The base is fitted with potentiometer to provide exact position values to the TARGA PLC, which in turn aim the robots to exactly the same horizontal and vertical angles as the POINTER. The hand-grip has a trigger switch at the front. The switch has a spring return. The switch will be connected directly to the vehicle's discharge valve. The water is discharged when the trigger is held, and stops when the trigger is released.

Specifications:

- 142 x 130 x 70 mm (above the panel into which it is mounted)
- Material: Chrome plated brass base; heavy duty plastic grip cover on a 4 mm stainless steel plate
- 5-pin M12 connector connect to the TARGA PLC
- 3-pin M12 connector to route the trigger button to discharge valve control
- Standard rotation range: +70°/-20° vertical, 270° horizontal
- Scroll wheel option for progressive jet/spray nozzle tip control

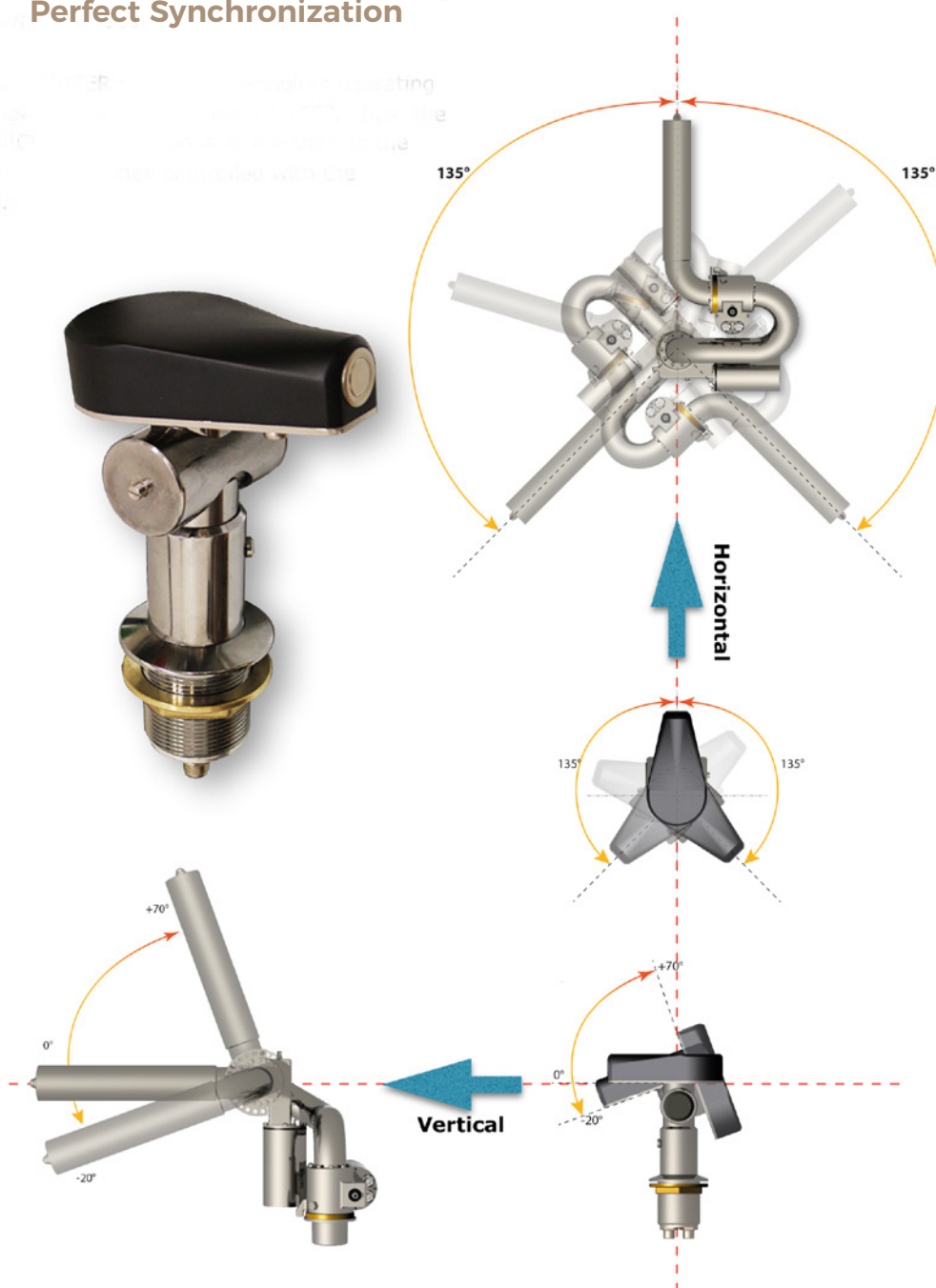
POINTER™ (Continued)

The POINTER provides natural and intuitive control of the FORCE robotic nozzle. The stream is aimed in the same direction and elevation angle as the POINTER. This provides the operator perfect control and immediate feedback without even using his eyes. Your hand tells you where the nozzle is aiming, allowing the operator to focus on the outside situation.

The POINTER provides an absolute operating range of -20 to $+70^\circ$, and $\pm 135^\circ$. Thus, the FORCE robotic nozzle is also limited to the same range when controlled with the POINTER.

Perfect Synchronization

The POINTER provides an absolute operating range of -20 to $+70^\circ$, and $\pm 135^\circ$. Thus, the FORCE robotic nozzle is also limited to the same range when controlled with the POINTER.





Rugged, long-lasting full grip joystick with optional custom handles, buttons & functions.

VIPER Grip Joystick

Perfect Grip, Ideal for Vehicles & Industrial Applications

The VIPER is a heavy-duty, all purpose grip joystick. It comes with various optional size grips and button configurations to suit your needs.

Manufactured by Caldaro of Sweden, the VIPER gives outstanding precision and a solid full grip size, with optional custom grips, buttons and functions to suit your needs.

Key Features

- **High Quality Materials:** The best materials have been chosen for all joystick components, with rubber mixtue for the toughest of environments and uses.
- **Strong Shaft:** The shaft is manufactured as a single piece and with extended dimensions, making it extremely rigid and virtually impossible to bend.
- **Extremely Long Life:** Built to withstand more than 5 million operations, while maintaining its precision and detent throughout.
- **All Temperatures:** Designed for temperatures ranging from -40°C to +85°C (-40°F to +176°F).
- **Tested in salt and copper mines**
- **Made in Sweden**

OEM Joysticks & Controllers

Your Wish is Our Command.

We can offer virtually any controller on the market. Here are just a few examples:



Sony DualShock



Datek Wireless



HIR Wireless



Control Devices JPWM



Scorpion Radio



Curtiss-Wright MG



Sure Grip Lu



Kar-Tech Elite Radio



Leap Motion 3D

Unifire's robotic nozzle systems are extremely flexible and can be controlled by virtually any control device, including wireless solutions of all types.

This enables us to offer our customers pretty much any joystic or controller on the market, most of which are themselves fully customizable.

Let us know if you have special needs or desires and we'll help find the perfect-fit solution and ensure it's fully integrated and tested before we deliver.



Accessories & Spare Parts

for Force Robotic Nozzle Systems

Unifire offers a variety of accessories and spare parts to compliment your robotic nozzle systems.





2" Valve & Actuator

Product Overview

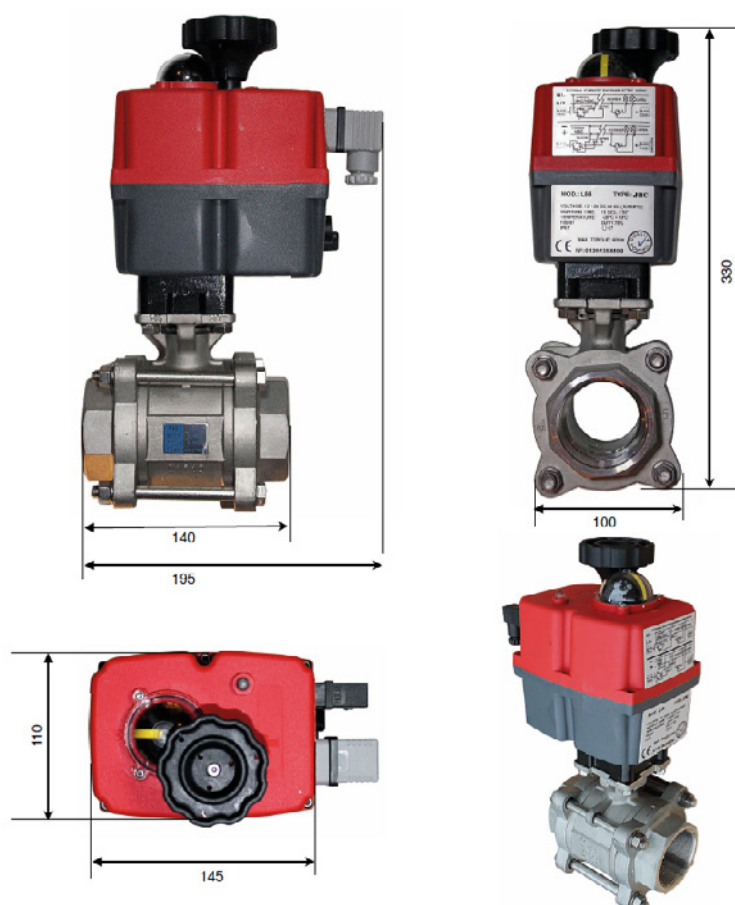
For Force 50 systems, the 2" Valve & Smart Electric Valve Actuator is a robust and proven valve and actuator with an outstanding track record with Unifire's robotic nozzle systems.

The IP67 weatherproof, corrosion resistant, low voltage electric valve actuator from electric actuator manufacturer J+J offers an impressive list of standard features that include protection against damage from over-torque or condensation, safety features, the ability to have it's standard on-off function changed with user friendly plug & play conversion kits.

The actuator features a highly visible LED light to offer users continual actuator operational status feedback. The LED light remains constantly lit if the actuator is able to respond to remote commands - if it can't, it flashes. The sequence of the flashes indicates what the reason may be for it being unable to respond.

2" Valve & Actuator (Continued)

Dimensions



Actuator Specifications:

Voltage Range - automatic sensing:	12-24 DC
Operating time (0-90°, no load):	13 seconds
Max. break torque:	60 Nm (531 lb.ins.)
Duty rating:	75%
IP Rating (IEC 60529):	IP67
Motor switches:	2 x SPDT micro switches
End of travel confirmation (volt free):	2 x SPDT micro switches
Heater:	3.5 W
Ambient temperature range:	-20° to +70°C (-4 to +158°F)
Electrical connecting plugs:	DIN 43650/ ISO4400 & C192
Weight:	2.4 kg
Consumption, 24V DC at max. torque:	1428mA



3" Valve & Actuator

Product Overview

For Force 80 systems, our high quality 3" Valve & Valve Actuator with 24V Brushless DC (BLDC) Motor are made of stainless steel (Type 316L) and are extremely robust and reliable.

Ideal for extremely harsh environments, both on- and off-shore, both the valve and actuator are weatherproof and highly resistant to corrosion.

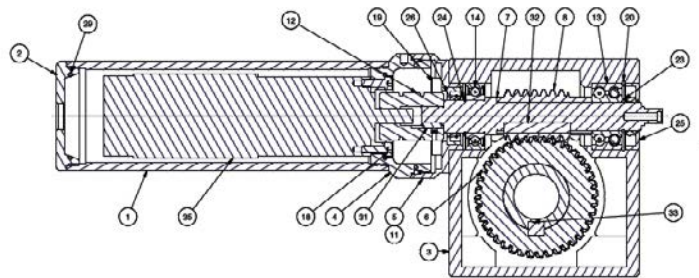
End positions are set by software which allows for extremely precise control and reliability. The TARGA software and position feedback ensure protection against damage from over-torque or condensation.

The physical position indicator on the actuator shows the valve's open/closed status at all times. The position is also available for display by software, including on the InterAct graphical user interface.

All-around excellence in design and craftsmanship, the Unifire 3" Valve & Actuator are the perfect choice for demanding installations and harsh environments.

3" Valve & Actuator (Continued)

Dimensions



Features & Specifications:

- DN80/PN16 valve with 80mm internal diameter Ø
- Total weight: 25 Kg.
- Valve and ball of 316 stainless steel.
- Actuator of stainless steel and Bronze gear.
- Actuator is top quality, manufactured in Denmark to the highest standards.
- 24V BLDC motor is directly powered by UNIFIRE TARGA Robotic Nozzle PLC,
- End position switches directly connects to the TARGA PLC as well by a single M12 cable.
- Max distance from PLC to valve: 5 meters.
- Position feedback to PLC (& Joystick) by encoder and position sensors that send the actual and confirmed position of the valve to the PLC & to the Joystick.
- Position shown on valve.
- Manual emergency operation is possible.
- Valve Part Number: SD15
- Actuator Part Number: ACT24



CANbus Connection Box

for Extending Unifire Joystick Cables to Any Length

Product Overview

Unifire's CANbus connection box is ideal for marine, industrial and other applications when you wish to extend the joystick cable a long distance.

It provides a convenient and simple means of extending joystick cable length to up to 500 meters.

Installation is as simple as 1) run a standard installation cable from the TARGA or X-TARGA PLC to the location from which you wish to install the joystick; 2) connect it to the connection box; and 3) attach to joystick cable via quick M12 connector.

Unifire Part Number: FOR00150



System Cables

with M12 Connectors

Cable Features

- M12 shielded cables for Unifire BLDC mMotors & joysticks
- Quick & simple installation
- Extremely well sealed when connected
- 5 meters (standard).
- Connect two or more joystick cables to extend to any length, in 5-meter increments
- Each BLDC motor requires 2 cables—one 5 pin (PN: M1255) & one 3 pin (PN: M1253)
- Unifire joysticks require a 5 pin M12 cable (PN: M1255)
- Spiral joystick cables available in 2 and 5 meter lengths
- Power cable: PN FOR00415 (inquire for price)

Unifire Part Numbers:

M1255 (5 pins, for motor sensor and joystick)

M1253 (3 pins, for motor phases)



BLDC Motors

& Complete Motor Can Assemblies

Motor Features

Where our competitors are still using run-of-the-mill “brushed” DC motors (which have been used since 1856), Unifire alone is blazing new trails by outfitting all of our robotic nozzles with industrial-robot-type brushless DC (BLDC) motors.

Brushless DC motors are much newer and have no brushes to get worn out, they have significantly higher efficiency and performance, and a lower susceptibility to mechanical wear than standard brushed motors. Some of the other advantages include:

- Higher torque to weight ratio
- Increased torque per watt of power input (increased efficiency)
- Increased reliability and lower maintenance
- Reduced operational and mechanical noise
- Significantly longer life span (10 000 operational hours)

Although it is highly unlikely to ever require replacing a BLDC motor in our robotic nozzles, we do stock and can supply spare motors and complete motor can assemblies with motors pre-mounted for simple, quick replacement.

FORCE 50 SPARE PARTS



Force 50 Complete Worm Gear Assembly

Complete worm gear assembly with gear wheel, gear screw, bearings, and O-ring. Connected to the pipes by flange assembly.

Part Number.: FOR50200

Complete BLDC Motor & Welded Cover

BLDC Motor in welded stainless steel cover, for quick and simple motor replacement.

Part Numbers.:

BLDC-MAV - BLDC Maxon Vertical

BLDC-MAH - BLDC Maxon Horizontal



Force 50 Front Pipe Section

Front pipe section for the Force 50, with stream straightener and 2" BSP male thread outlet for nozzle tip connection.



Part Number.: FORCE50-PS1

Force 50 Middle Pipe Section

Force 50 middle pipe section with flange connection with 10 x (M5x16) at both ends.

Part Number.: FORCE50-PS2



FORCE 80 SPARE PARTS



Force 80 Complete Worm Gear Assembly

Complete worm gear assembly with gear wheel, gear screw, bearings, and O-ring. Connected to the pipes by flange assembly.

Part Number.: FOR80200

Complete BLDC Motor & Welded Cover

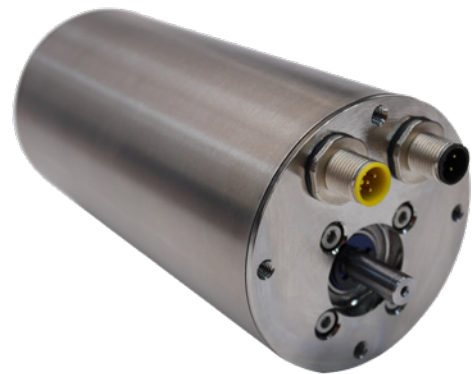
BLDC Motor in welded stainless steel cover, for quick and simple motor replacement.

Part Numbers.:

3910103: BLDC with 24:1 Gear Ratio

3910107: BLDC with 49:1 Gear Ratio

3910108: BLDC with 84:1 Gear Ratio



Force 80 Front Pipe Section

Front pipe section for the Force 80, with stream straightener and 3" BSP male thread outlet for nozzle tip connection.



Part Number.: FORCE80-PS1

Force 80 Middle Pipe Section

Force 80 middle pipe section with flange connection with 10 x (M5x16) at both ends.

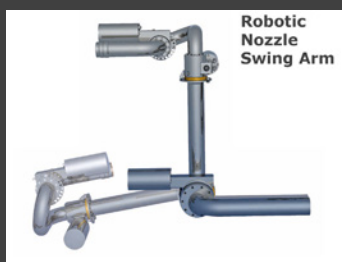
Part Number.: FORCE80-PS2



Custom Solutions



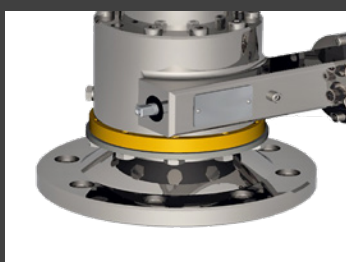
Horizontal Swing Arm



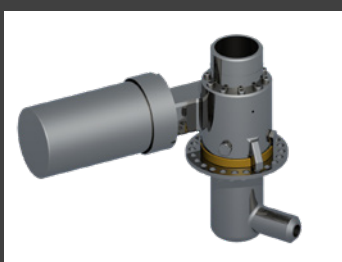
Vertical Swing Arm



Automatic Doors



Flange Connection



Vehicle Side Turret



Telescopic Pipe



Custom Radio Remote



Force 50 Rail Mount



Force 80 Rail Mount

Unifire offers a variety of piping mounts, swing arms, automatic doors, special vehicle solutions (including touchscreen computer controls) and other custom solutions.

Pictured above are just a few examples. If you have special requirements, contact us for more information.



System Packackages

POPULAR &
EXAMPLE SYSTEMS

Unifire offers tailored system packages to every client we serve. We can offer numerous combinations of equipment to build you a tailored-fit solution. The following packages are just a few of the many packages we can offer. Contact us for an offer that perfectly suits your project's needs..



ABOUT OUR SYSTEM PACKAGES

These Packages are Just a Few Examples

The following packages are just some examples of popular system configurations.

There are so many possible combinations, we can't possibly show them all.

This section is designed to provide ideas and example packages. Of course, we make custom-fit offers for each customer based on what the need.

Contact Unifire today at sales@unifire.com or by phone at +46 303 248 403 for an offer.

Package Identification:

F50-I-X-P-V-I-F

Robotic Nozzle Type

Nozzle Tip

PLC Type

Joystick Type

Valve

InterAct

FlameRanger

Package F50-I-XTS-P-V-I-F



Force 50 with Integ 50 Jet/Spray Tip



X-TARGA-S3



PI Joystick



M12 Cable Kit



2" Valve & Actuator



InterAct GUI



FlameRanger

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Integ 50 (PN: INT50B)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	Yes, incl. 2 x FV300 Detectors	●
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	X-TARGA-S (PN: X-TARGA-S3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F50-I-XT-P-I



Force 50 with Integ 50 Jet/Spray Tip



X-TARGA3



PI Joystick



M12 Cable Kit



2" Valve & Actuator



InterAct GUI

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Integ 50 (PN: INT50B)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	X-TARGA (PN: XTARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F50-I-T-P-V



Force 50 with Integ 50 Jet/Spray Tip



TARGA3



PI Joystick



M12 Cable Kit



2" Valve & Actuator

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Integ 50 (PN: INT50B)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	TARGA (PN: TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F50-I-XT-P



Force 50 with Integ 50 Jet/Spray Tip



X-TARGA3



PI Joystick



M12 Cable Kit

		Includes:
Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Integ 50 (PN: INT50B)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	X-TARGA (PN: X-TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F50-I-T-PT-V-I



Force 50 with Integ 50 Jet/Spray Tip



TARGA3



POINTER Joystick
w/ Scroll Wheel



M12 Cable Kit



2" Valve & Actuator



InterAct GUI

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Integ 50 (PN: INT50B)	●
Joystick / Controller:	POINTER (PN: PNTR-S)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	TARGA (PN: TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 4 (PN: M1253)	●

Package F50-I-T-PT-V



Force 50 with Integ 50 Jet/Spray Tip



TARGA3



POINTER Joystick
w/ Scroll Wheel



M12 Cable Kit



2" Valve & Actuator

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Integ 50 (PN: INT50B)	●
Joystick / Controller:	POINTER (PN: PNTR-S)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	TARGA (PN: TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 4 (PN: M1253)	●

Package F50-I-T-PT



Force 50 with Integ 50 Jet/Spray Tip



TARGA3



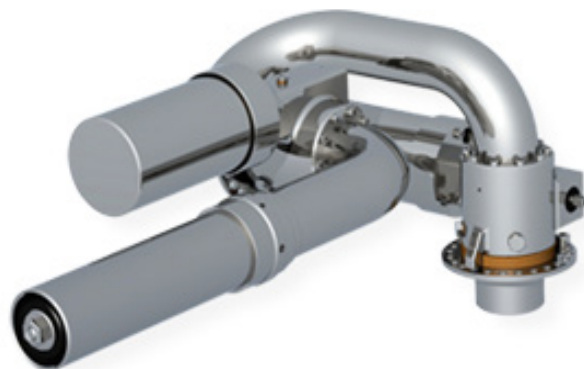
**POINTER Joystick
w/ Scroll Wheel**



M12 Cable Kit

		Includes:
Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Integ 50 (PN: INT50B)	●
Joystick / Controller:	POINTER (PN: PNTR-S)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	TARGA (PN: TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 4 (PN: M1253)	●

Package F50-J-T-P-V-I



Force 50 with JETRANGE Tip



TARGA2



PI Joystick



M12 Cable Kit



2" Valve & Actuator

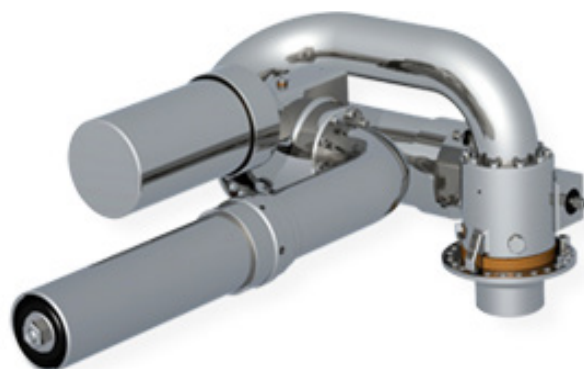


InterAct GUI

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	JETRANGE (PN: JR50)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F50-J-T-P-V



Force 50 with JETRANGE Tip



TARGA2



PI Joystick



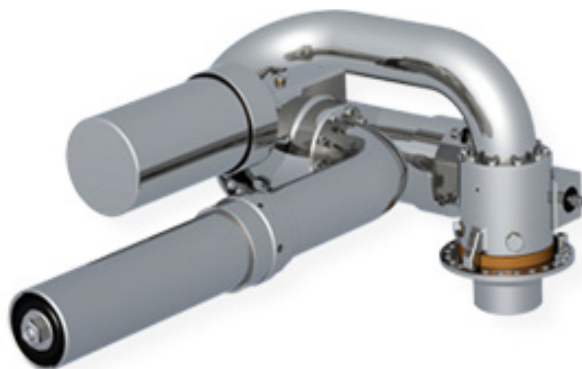
M12 Cable Kit



2" Valve & Actuator

		Includes:
Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	JETRANGE (PN: JR50)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F50-J-T-P



Force 50 with JETRANGE Tip



TARGA2



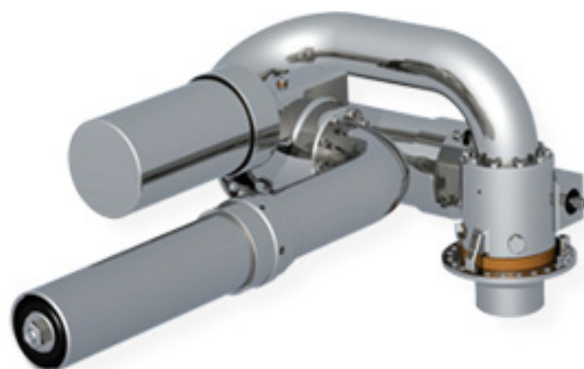
PI Joystick



M12 Cable Kit

		Includes:
Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	JETRANGE (PN: JR50)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F50-J-T-PT-V-I



Force 50 with JETRANGE Tip



TARGA2



POINTER Joystick



M12 Cable Kit



2" Valve & Actuator



InterAct GUI

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	JETRANGE (PN: JR50)	●
Joystick / Controller:	POINTER (PN: PNTR-NS)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F50RLT-T-P-V-I



F50R-LT with JETRANGE Tip



TARGA2



PI Joystick



M12 Cable Kit



2" Valve & Actuator



InterAct GUI

Includes:

Robotic Nozzle Chassis:	F50R-LT (PN: F50R-LT)	●
Nozzle Tip:	Integrated JETRANGE (JR50)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F50RLT-T-PT



F50R-LT with JETRANGE Tip



TARGA2



POINTER Joystick

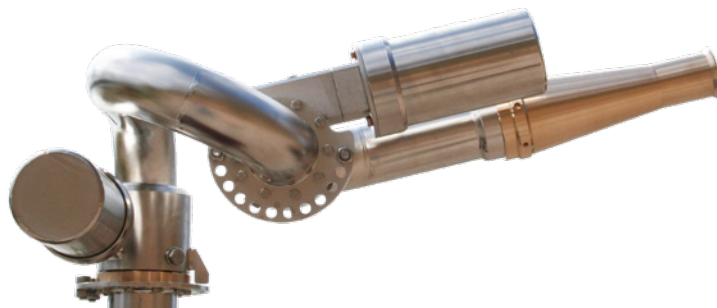


M12 Cable Kit

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Integrated JETRANGE (PN: JR50)	●
Joystick / Controller:	POINTER (PN: PNTR-NS)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F50-S-XT-P-V



Force 50 with Smooth Bore Tip



X-TARGA2



PI Joystick



M12 Cable Kit

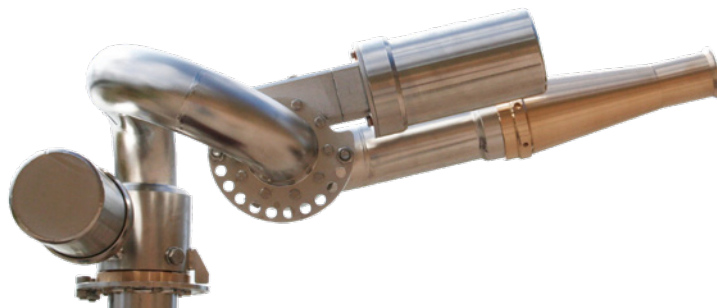


2" Valve & Actuator

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Smooth Bore (PN: FOR24100)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	X-TARGA (PN: X-TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F50-S-T-P



Force 50 with Smooth Bore Tip



TARGA2



PI Joystick

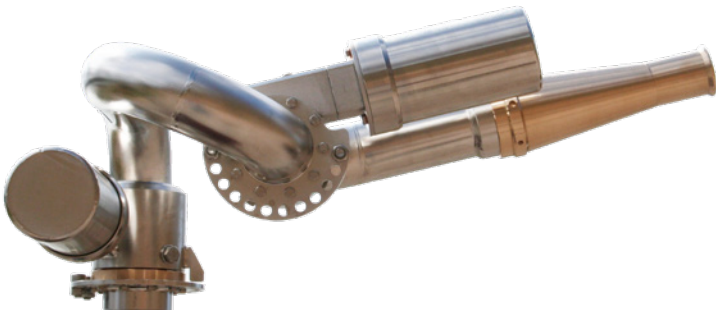


M12 Cable Kit

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Smooth Bore (PN: FOR24100)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F50-S-T-PT-V



Force 50 with Smooth Bore Tip



TARGA2



POINTER Joystick



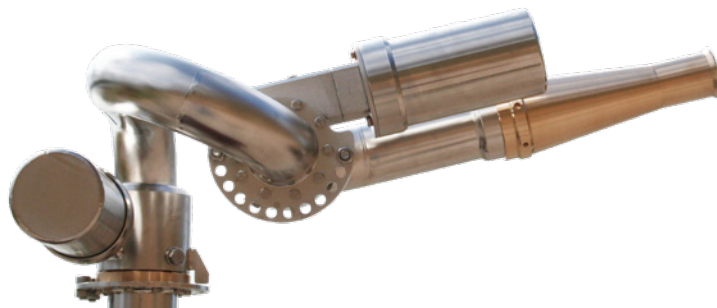
M12 Cable Kit



2" Valve & Actuator

		Includes:
Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Smooth Bore (PN: FOR24100)	●
Joystick / Controller:	POINTER (PN: PNTR-NS)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	2" Valve (PN: VALVE2)	●
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F50-S-T-PT



Force 50 with Smooth Bore Tip



TARGA2



**POINTER Joystick
w/ Scroll Wheel**



M12 Cable Kit

Includes:

Robotic Nozzle Chassis:	Force 50 (PN: F50B)	●
Nozzle Tip:	Smooth Bore (PN: FOR24100)	●
Joystick / Controller:	POINTER (PN: PNTR-NS)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F80-I-XTS-P-V-I-F



Force 80 with Integ 80 Jet/Spray Tip



X-TARGA-S4



PI Joystick



M12 Cable Kit



3" Valve & Actuator



InterAct GUI

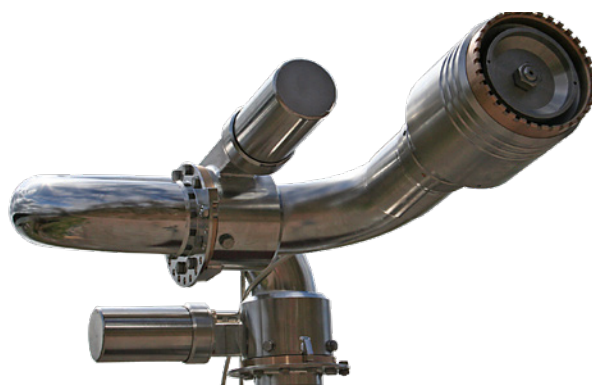


FlameRanger

Includes:

Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	Integ 80 (PN: INT80B)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	Yes, incl. 2 x FV300 Detectors	●
Valve Type:	3" Valve & Actuator (PN: ACT24 & SD15)	●
PLC Model:	X-TARGA-S (PN: X-TARGA-S4)	●
M1255 Cables (Qty.):	Qty: 5 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 4 (PN: M1253)	●

Package F80-I-XT-P-V-I



Force 80 with Integ 80 Jet/Spray Tip



X-TARGA4



PI Joystick



M12 Cable Kit



3" Valve & Actuator



InterAct GUI

Includes:

Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	Integ 80 (PN: INT80B)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	(N/A)	-
Valve Type:	3" Valve & Actuator (PN: ACT24 & SD15)	●
PLC Model:	X-TARGA (PN: X-TARGA4)	●
M1255 Cables (Qty.):	Qty: 5 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 4 (PN: M1253)	●

Package F80-I-XT-P



Force 80 with Integ 80 Jet/Spray Tip



X-TARGA3



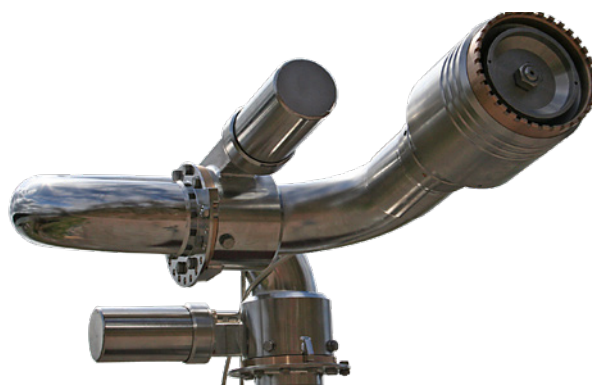
PI Joystick



M12 Cable Kit

		Includes:
Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	Integ 80 (PN: INT80B)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	X-TARGA (PN: X-TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F80-I-T-P



Force 80 with Integ 80 Jet/Spray Tip



TARGA3



PI Joystick



M12 Cable Kit

		Includes:
Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	Integ 80 (PN: INT80B)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	TARGA (PN: TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F80-I-T-PT



Force 80 with Integ 80 Jet/Spray Tip



TARGA3



**POINTER Joystick
with Scroll Wheel**



M12 Cable Kit

		Includes:
Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	Integ 80 (PN: INT80B)	●
Joystick / Controller:	POINTER (PN: PNTR-S)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	TARGA (PN: TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F80-J-T-PT



Force 80 with JETRANGE Tip



TARGA2



POINTER Joystick



M12 Cable Kit

Includes:

Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	Integ 80 (PN: INT80B)	●
Joystick / Controller:	POINTER (PN: PNTR-NS)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	TARGA (PN: TARGA2)	●
M1255 Cables (Qty.):	Qty: 3 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 2 (PN: M1253)	●

Package F80-J-XT-P-V-I



Force 80 with JETRANGE Tip



X-TARGA3



PI Joystick



M12 Cable Kit



3" Valve & Actuator



InterAct GUI

Includes:

Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	JETRANGE (PN: JR4000)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	Yes	●
FlameRanger Package:	(N/A)	-
Valve Type:	3" Valve & Actuator (PN: ACT24 & SD15)	●
PLC Model:	X-TARGA (PN: X-TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F80-J-XTS-P-V



Force 80 with JETRANGE Tip



X-TARGA-S3



PI Joystick



M12 Cable Kit



3" Valve & Actuator

Includes:

Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	JETRANGE (PN: JR4000)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	3" Valve & Actuator (PN: ACT24 & SD15)	●
PLC Model:	X-TARGA (PN: X-TARGA-S3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F80-S-XTS-P-V



Force 80 with Smooth Bore Tip



X-TARGA-S3



PI Joystick



M12 Cable Kit



3" Valve & Actuator

Includes:

Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	Smooth Bore (PN: FOR48300)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	3" Valve & Actuator (PN: ACT24 & SD15)	●
PLC Model:	X-TARGA (PN: X-TARGA-S3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

Package F80-S-XT-P



Force 80 with Smooth Bore Tip



X-TARGA3



PI Joystick



M12 Cable Kit

		Includes:
Robotic Nozzle Chassis:	Force 80 (PN: F80B)	●
Nozzle Tip:	Smooth Bore (PN: FOR48300)	●
Joystick / Controller:	PI Joystick (PN: FOR00207)	●
InterAct GUI Package:	(N/A)	-
FlameRanger Package:	(N/A)	-
Valve Type:	(N/A)	-
PLC Model:	X-TARGA (PN: X-TARGA3)	●
M1255 Cables (Qty.):	Qty: 4 (PN: M1255)	●
M1253 Cables (Qty.):	Qty: 3 (PN: M1253)	●

UNIFIRE

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