

MSA Cairns® XF1 Fire Helmet

Product Specification



I. Product Type

Structural Firefighting Helmet

II. Product Model

MSA Cairns XF1 Jet-Style Fire Helmet

III. Purpose

To supply a uniform, standard product specification for a jet-style structural fire helmet.

IV. Scope

The scope of this product specification encompasses the performance criteria, design, construction and materials deemed necessary for helmets utilized for structural firefighting.

V. General

Helmets manufactured in accordance with this specification are designed to mitigate adverse environmental effects to the firefighter's head while providing the specifying authority with what are, in their opinion, essential requirements.

VI. Performance/Criteria Standards

MSA Cairns XF1 Jet-Style Fire Helmets shall meet the structural firefighting requirements of NFPA 170:2025 (or the current edition), Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting; NFPA 1951:2013 (or current edition), Standard on Protective Ensembles for Technical Rescue Incidents; US-OSHA 1910.156.

All eye/face protection sold as part of the original helmet assembly shall be compliant with the impact requirements of the current editions of ANSI/ISEA Z87.1 and NFPA 1970.

VII. Performance Verification Data Requirement

Response to this specification shall include a complete and current NFPA 1970 test report from a recognized, accredited test facility detailing all performance data for the helmet(s) and compliant helmet components included in the original assembly. Certificates of conformance and/or letters of certification alone shall not be acceptable. Component testing is not acceptable. Certification testing is conducted every year to a random lot size, as per NFPA requirements.

VIII. Manufacturer's Warranty

MSA warrants MSA Cairns Fire Helmets to be free from defects in materials and/or faulty workmanship for a period of ten (10) years from the date of manufacture by MSA. For warranty details, please see "10-Year Warranty and Terms of Sale" (ID 3600-72-MC / February 2015).

WHEN YOU GO IN, WE GO IN WITH YOU.



IX. Helmet Shell

MSA Cairns XF1 Jet-Style Fire Helmets shall have a jet-style shell with lime/yellow retroreflective trim and black edge bead that conforms to the perimeter of the shell's edge.

The shell material shall be a high-temperature, flame-resistant thermoplastic that is injection molded to form a one-piece shell.

XF1 Helmet Colors

The exterior of the shell shall be completely coated with a color pigmented, abrasion, high heat, and chemical resistant paint finish. The shell color and matched paint finish shall be available in the standard colors of white, red, black, and yellow.

XF1 Paint Finishes

All colors of the XF1 are available in both glossy and matte finishes. The standard finish is glossy. The matte finish is provided through an additional varnish process which is applied on top of the standard glossy paint. The addition of the matte finish shall not affect the fire helmet's performance relative to any of the applicable standards.

The shell shall have black, high-temperature, flame-resistant edge trim. The edge-trim is secured around the perimeter of the shell's edge through a series of friction joints.

The shell shall have a helmet hanger comprised of a 0.75" (19 mm), nickel plated "D" ring. The helmet hanger shall be attached to the chin strap at the center of the helmet and retract when the helmet is worn.

X. Front Plate

The helmet shell shall be furnished with a blank black front plate that is affixed to the helmet through friction tabs. The front plate shall be customizable and, in addition to black, and should be available in the following colors: white, blue, green, yellow, orange, red, hi-viz yellow, and photolum (photo-luminescent).

XI. Impact Cap

The impact cap is designed to help provide increased thermal and impact protection. The impact cap shall be an impact-resistant, shock-absorbing polyurethane foam, with over molded aramide reinforcement. It is removable for inspection and replacement.

XII. Head Suspension

MSA Cairns XF1 Jet-Style Fire Helmet shall consist of a six-way head suspension system. The head suspension system comprises three (3) fixed 0.75" (19 mm) wide nylon straps mounted at six points on the impact liner and fastened at their intersection to form the 6-way overhead strap assembly. A removable, washable crown pad shall be incorporated into the overhead strap assembly.

XIII. Sizing Adjustment

The Cairns XF1 shall be available in two sizes: Medium, which accommodates head sizes of 6 1/2–7 3/4 inches (52–62 cm) and Large, which accommodates head sizes of 7 1/8–8 1/8 inches (57–65 cm). The size of the headband may be adjusted to fit the wearer's head by means of a ratchet adjustment system.

The rear ratchet arms shall have three (3) adjustable positions so that the angle of the ratchet may be set to accommodate the back of the wearer's head. The headband height shall be adjustable at the front of the helmet via sliding friction tab to provide additional comfort to the wearer and maximize compatibility with the SCBA facepiece.

The multi-point chin strap shall be adjustable via a friction buckle, with multiple stops to help ensure a proper fit.

All interaction points should be made from a bright yellow material for easy visualization and identification..

XIV. Comfort Liner

MSA Cairns XF1 Jet-Style Fire Helmet shall have a removable comfort liner, consisting of a headband cushion and a ratchet pad. Both components made of a foam-core laminate system, comprised of a soft black flame-resistant nomex blend material against the user's head backed by a soft loop material secured to the headband and ratchet with hook fastener. The comfort liner shall be removable and washable per the MSA Cairns XF1 Operating Manual ("the Manual") and/or NFPA 1851, as applicable.

XV. Chinstrap

The chinstrap shall be constructed of wide, spun-Nomex webbing, which are connected by a high-temperature, durable thermoplastic quick-release buckle. The multi-point chin strap shall incorporate

hook and loop fasteners for cinching under the wearer's jaw and include friction buckles for adjusting the straps comfortably along the back of the wearer's head. The chinstrap shall be attached to the impact cap using a 1/4 quarter turn locking mechanism. The mechanism allows both for proper retention (per the Standards) as well as easy removal for cleaning (per the Manual) or replacement, as applicable.

XVI. Ear/Neck Protection

MSA Cairns XF1 Jet-Style Fire Helmet provides ear and neck protection with a 8.5" (216 mm) wide, 24" (610 mm) long, full-cut earlap (not including installation clips). The earlap consists of black colored Nomex and secured via six (6) tabs located along the top of the ear lap. These tabs shall be inserted into corresponding slots molded into the impact cap liner to ensure a secure connection.

The earlap shall be washable (per the Manual) and shall be removable without interfering with the overhead strap assembly in any way and without removing any part of the helmet suspension..

XVII. Retro-Reflective Trim

MSA Cairns XF1 Jet-Style Fire Helmet shall have four (4) pieces of retroreflective trim around the exterior crown of the helmet shell for maximum visibility, per the Standards. Lime/yellow Scotchlite trim shall be available.

XVIII. Eye Protection

Each Cairns XF1 helmet NFPA compliant ensemble offers a full face shield. An additional ocular visor is also available as secondary protection.

FULL FACE SHIELD	High-temperature polycarbonate visor with anti-fog and anti-scratch coatings. The full face shield shall meet the performance requirements of NFPA-1970 (current edition) and be retractable between the helmet shell and impact cap. The full face shield shall be replaceable without the use of tools.
OCULAR VISOR	The optional, ocular visor is compliant to ANSI/ISEA Z87.1 (current edition). This visor shall feature a patented pivot adjustment system that allows the visor to articulate to and away from the face, helping to provide gap-free protection even when the user is wearing corrective lenses. This visor must be replaceable without the use of tools and can be added to any existing XF1 Jet-Style Fire Helmet currently in service.

XIX. Other Options

Each Cairns XF1 helmet NFPA compliant ensemble offers a full face shield. An additional ocular visor is also available as secondary protection.

INTEGRATED LIGHTING MODULE	The lighting module shall consist of twin housings inserted on either side of the interior helmet shell. Powered by three (3) AAA alkaline batteries that are accessible via a T-10 torx screwdriver, the lighting module shall carry ATEX Zone-1, IP56 rating and offer a up to 10 hours of continuous operation. The unit shall have a large, yellow button made from a tactile material so that it is found with a gloved hand while the helmet is worn. The weight of the module shall be approximately 3.5 oz (99 g) with batteries. Battery life shall be indicated by a series of flashes once the unit is powered on; three (3) flashes to indicate full power, two (2) flashes to indicate $\pm 50\%$ power, and one (1) flash to indicate $<25\%$ power.
INTEGRATED COMMUNICATION HEADSET	The communication headset shall feature either a single or double speaker and a flexible, electret boom microphone mounted onto a rail. The microphone stows in the rear of the helmet when not in use or in various positions in front of the wearer's face, whether by itself or while wearing an SCBA face piece. The unit shall install internally into the helmet without the use of tools. The download cable shall be offered with a NEXUS 7.1 mm, four-pole connecting plug and be compatible with MSA push-to-talk (PTT) modules. The unit shall not require batteries for operation, relying on the radio's battery to power the unit via the PTT module. The weight of the unit shall be approximately 3.5 oz (99 g, one speaker) to 4.4 oz (124 g, two speakers).

XIX. Maintenance, Repair and Retirement

Proper maintenance, repair, and retirement of the helmet can be found in the Manual on our web site (MSAFire.com). Users should also refer to NFPA-1851 (current edition) regarding proper inspection, maintenance, repair schedules, and retirement requirements for structural firefighting helmets. Upon the customer's request, an MSA representative will conduct training explaining the proper maintenance, repair and retirement of MSA Cairns Fire Helmets.

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice. MSA is a registered trademark of MSA Technology, LLC in the US, Europe, and other Countries. For all other trademarks visit <https://us.msasafety.com/Trademarks>.

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