

PROTECT
WHAT
MATTERS

— CATALOG



PROTECT
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INTRODUCTION



Dear Readers,

I will never forget one particular meeting with a customer during which we were called "helmet rebels". He was, of course, referring not only to the ballistic performance and modularity of our products that help redefine the industry, but also to our unconventional way of developing and marketing the best helmets in the world. Later I realised that: Our "rebellious" nature should be and will always remain an integral part of Busch PROtective's DNA.

Rebels are people who want to change the status quo. This is the reason why we challenge established standards, keep raising the bar and ensure that our products protect lives.

The catalogue you are holding in your hands is not meant to be a standard product catalogue. On 96 pages, we provide an insight into our company and share our philosophy and values with you. Likewise, we address issues that are very rarely discussed in the industry and showcase our portfolio in a structured and clear manner.

With our portfolio, we have created an ecosystem that you can configure according to your wants and needs. This system is designed specifically for you – a true professional who is willing to risk their own life in the context of law enforcement, civil unrest, fire fighting or search and rescue operations and needs to be protected in the best way possible.

After having read this catalogue, I hope you understand what makes Busch PROtective so special and what we stand for as a team of "rebels".

Stay safe and ... PROTECT WHAT MATTERS.

Edwin Busch,

CEO

A handwritten signature in black ink, appearing to read "Edwin Busch". The signature is stylized and fluid, with a large loop at the end.

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It is not only the "Ultimate Answer of Life, the Universe, and Everything"* but also the age of Busch PROtective.

* Quote from the book "The Hitchhiker's Guide to the Galaxy" by Douglas Adams

How to decode our product names?

The letter **A** at the beginning of the product name means that it is part our most important product category: helmets.

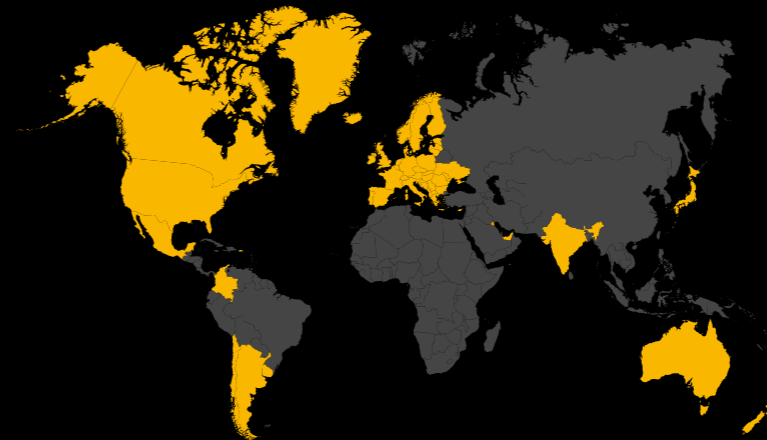
The names of all our helmets start with the letter **A**: AMP-1 TP, AMR-1 E+, ATR-1, etc.

The names of our other products begin with the letters **B** for ballistic and **C** for non-ballistic. This is usually followed by the letter **A**, which stands for accessories. The third letter stands for the product name.

Examples: BAM-1 means: Ballistic, Accessories, Mandible; CAP-1 means: Non-Ballistic, Accessories, Pad



Our helmets can be found in the following **countries**:



AMP-1 TP

The AMP-1 TP is the only helmet in the world that meets the DEA-FBI Ballistic Helmet Testing Protocol (as of 2022). For more information, see page 10.

○ ● ● Three standard colors: Black, ranger green, blue; all other possible colors on request.

Motorbike helmets, bicycle helmets, firefighting helmets, military helmets – Busch PROtective developed expert knowledge in these areas before deciding to specialise in helmets for police forces, special military units and technical rescue.

40%

60%

Percentage of women/men in managerial positions



MORE THAN 14,000

Number of variants in which the AMP-1 helmet is available. Variables: Color, cuts, with/without NVG, TP/E, interior, harness buckle, harness color

1981

YEAR OF FOUNDATION



4 LOCATIONS

Gütersloh and Hamburg / Germany
Chomutov / Czech Republic
Aliso Viejo / USA

TIMELINE: BUSCH PROTECTIVE



1990

In the early 1990s, Busch PROtective achieves expert status and secures a contract for the development of a new ballistic helmet for the German Army. These helmets are still worn by German soldiers to this day.

2007

In early 2007, two companies – Busch PROtective and Dräger – join their forces and develop a helmet for fire brigades.

2016

Busch PROtective launches the world's first non-metallic helmet, the VPAM 3-certified AMP-1 TP. Considerably lighter than the helmet of other manufacturers, the modular and comfortable AMP-1 TP conquers the European market.

2019

The AMP-1 TP is the only helmet in the world to meet the new DEA-FBI Ballistic Helmet Testing Protocol.

2023

With a host of new products, Busch PROtective is reshuffling the cards in the market for protection systems for law enforcement and special forces.

1981

Egon Busch establishes the company. Busch PROtective has specialised in the development and manufacture of helmets from day one. In the beginning, the focus was on motorbike helmets.

1991

Busch PROtective expands its business operations and opens a subsidiary in Croatia. Sestan-Busch has since enjoyed a leading position in the European market for head protection systems for military personnel.



2014

Edwin Busch takes over the company and focuses on the market for head protection systems for police and special forces.

2022

Busch PROtective launches a new helmet for technical rescue. ATR-1 is a helmet platform that offers firefighting teams advanced modularity. Wildland firefighting, high angle and water rescue, technical rescue ... a helmet that can be adapted to the operational scenario within seconds.



1995

Busch PROtective once again conquers the civilian market for head protection systems by supplying hundreds of thousands of bicycle helmets every year – these helmets are developed and manufactured in Germany and assembled at its own subsidiary in the Czech Republic.



2018

Busch PROtective expands globally and opens a subsidiary in the USA. Thanks to its own assembly facility in California, Busch PROtective attracts many new customers, including the Department of Justice (FBI, DEA, U.S. Marshals, ATF) and countless police teams in almost every U.S. state.



MODULARITY

Our emphasis is on modularity.

At Busch PROtective, we are increasingly focusing on modularity. The principle of the modular system enables us to not only conceive helmets as a closed system but also to design them as open platforms. Individual components, such as visors, hearing protection or products from other manufacturers, can now be attached to these platforms through standardised interfaces. This fundamental deci-

sion in the design of each type of helmet leads to product solutions that offer users more protection and significantly increase wearing comfort and adaptability.

Our modular concept is based on four principles:

1. Low weight

If additional components are not needed, they do not have to be attached to the helmet, thus keeping its weight to a minimum.

2. Simplicity

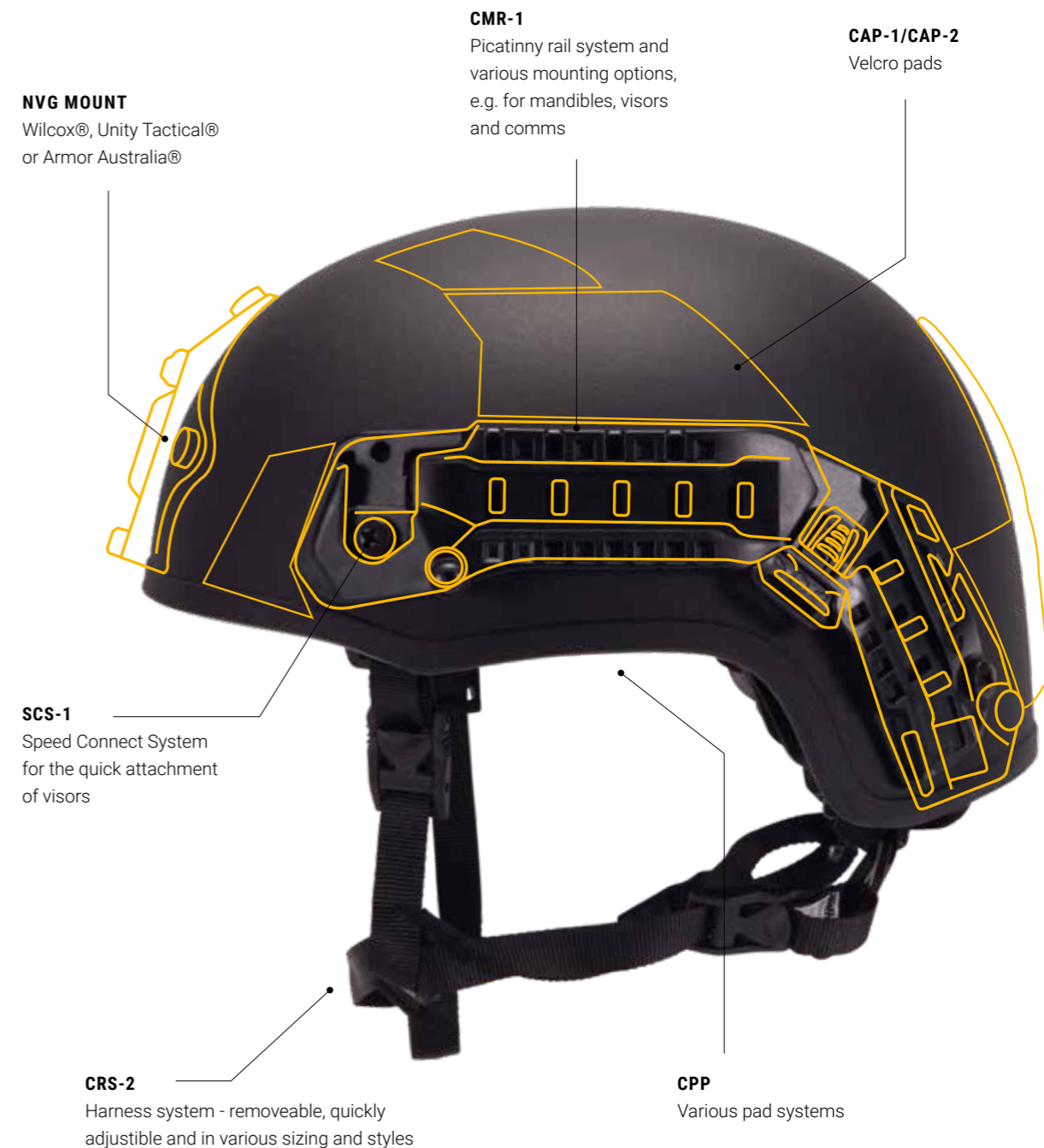
If the risk of danger increases during use, it should be possible to attach additional, suitable components without tools or taking the helmet off.

3. Speed

If the situation escalates during use, users must be able to increase the scope and level of protection quickly and, at best, with a single movement.

4. Open system

Our helmet platforms give users the freedom to decide which additional components they want to attach to the helmet.



TESTS AND CERTIFICATIONS



40 years ago, it was enough to stop fragmentation/bullets. However, as technology has advanced, so has the expectation that helmet systems must function in the most extreme environments and withstand the harshest conditions.

In addition, the prevention of traumatic brain injury (TBI) is recognised as an important goal: Helmets that minimise energy transfer during a ballistic event allow users to remain in the field and protect them in the long term from the effects of traumatic brain injury.

Below you will find a short description of the three most important test standards. The table on the next page describes all three test standards in detail.

NIJ LEVEL IIIA 0106.01 (1981)

The current NIJ IIIA test dates back to 1981 and is the most widely applied method for testing the ballistic performance of helmets used primarily in military applications. This standard is kept simple and is limited to testing the penetration of two calibres (9 mm & .44 Magnum). Unlike bulletproof vests, which are tested and officially certified by the NIJ, there is no official certification for NIJ IIIA helmets, only tests for bullet resistance.

VPAM (VPAM-HVN-2009)

In Germany, Austria and Switzerland, VPAM test certification is the gold standard. As part of VPAM test certification, some realistic ballistic threats are simulated to test how well a helmet protects a head in case of a ballistic event. When selecting head protection, VPAM test certification is demanded by most policing counter terror units including GSG9, GIGN, etc.

DEA-FBI BALLISTIC HELMET TESTING PROTOCOL (2019)

The DEA-FBI Ballistic Helmet Protocol was developed in collaboration with the U.S. Department of Justice (DOJ) between 2017 and 2019 and is the most comprehensive helmet test method in the United States. Led by the Federal Bureau of Investigation (FBI) and the Drug Enforcement Agency (DEA), the protocol was developed at the FBI Ballistic Research Facility in Quantico, VA and is considered the gold standard for U.S. Department of Justice units, such as the FBI, DEA, U.S. Marshals Services (USMS) and Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). The focus of this test method is on limiting injuries to rescue teams during armed incidents. In addition to the standard penetration tests against 9 mm rounds, the deformation of the inside of the helmet is tested under the most extreme environmental and technical conditions. The protocol tests the protective performance of the helmet to ensure that an officer's survivability in a ballistic event and the avoidance of long-term traumatic brain injury are maximised.



	NIJ (1981)	VPAM (2009)	DEA-FBI (2019)
Testing bullet resistance – 9 mm	✓	✓	✓
Testing bullet resistance –.44 Magnum	✓	⊗	⊗
Number of shots	Total: 20 Five shots per helmet (four helmets in the test)	Total: 29 Six shots per helmet (three test helmets for testing bullet resistance) Two shots per helmet (two test helmets for determining energy transfer) One shot at each attachment point (one test helmet, seven attachment points)	Total: 44 Six shots (four test helmets) Five shots (four test helmets)
Points of impact	Predetermined: front, back, both sides and crown	Random principle, not predetermined	Predetermined: 44 defined points of impact
Point of impact from the edge	50 mm from the edge	20 (+5) mm from the edge	25 mm on the helmet in normal temperature and on conditioned helmets (low tem- perature/high temperature)
Shots on screws and bolts	⊗	All attachment points	All attachment points and additionally shots in the direct vicinity of the attachment points
Conditioning – Water	Two of four helmets	⊗	Two of eight helmets
Conditioning – Low temperatures	⊗	-20 °C	-40 °C/-40 °F
Conditioning – High temperatures	⊗	+70 °C	+60 °C/+140 °F
Backface deformation	⊗	✓ Max. 25 joules	20 mm BFD, front 15 mm BFD, right, left, rear, crown
Fragmentation test (V50)	⊗	⊗	✓
Shock absorption test	⊗	⊗	✓
Compression resistance	⊗	⊗	✓
Retention buckle/strap strength	⊗	⊗	✓
Official certification	⊗	✓	✓

PRODUCT OVERVIEW



AMP-1 TP / P. 20



AMP-1 E/ P. 26



AMH-2/ P. 32



CTM-1 / P. 36



AMR-1 TP / P. 58



AMR-1 E+ / P. 59

AMR-1 E/ P. 60

ARC-2 / P. 61

ATR-1 / P. 70

PAA-1 / P. 80

MEP-1 / P. 84

VISORS / P. 88



BALLISTIC PROTECTION

Tactical and patrol



TOPIC: ENERGY TRANSFER

Elephant in the room

Have you ever heard of the expression “elephant in the room”? It refers to a problem or controversial issue that everyone knows exists but deliberately avoids discussing. In every industry, there is such an “elephant,” and in our industry, it might just be the deformation of the inside of the helmet.

Energy transfer and deformation of the inside of the helmet

When a 9x19 mm projectile is fired from a “Heckler&Koch MP5” at an exit velocity of 1495 km/h, it carries a kinetic energy of 689 joules. When this projectile impacts a good ballistic helmet, a significant portion of the energy, along with the projectile itself, is absorbed. However, the remaining energy that is not absorbed gets transferred to the inside of the helmet, resulting in backface deformation.

According to the VPAM (Association of Testing Bodies for Attack-Resistant Materials and Constructions), the energy transferred to the inside of the helmet should not exceed 25 joules. This limit value is based on forensic investigations, which have shown that exceeding this threshold can lead to serious or even fatal injuries. To calibrate the energy transfer test results, the VPAM uses a 1039g +/- 5g steel ball dropped from a height of two meters onto the measuring head of ballistic soap. This test yields a reference value of 20 joules. Allowed are 5 joules more. Anything beyond 25 joules has the potential to cause severe harm.

The Neglected Issue: Energy Transfer and Deformation

Surprisingly, only a few helmet manufacturers address the issue of energy transfer and deformation of the inside of the helmet. Could it be that only a handful of helmets on the market meet the VPAM specification? Moreover, why are numerous helmets still described as “ballistic safe”? The answer lies in the details. While a helmet’s level of protection depends on materials and technology used, the indication of the level of protection is a question of the chosen test method. Let’s delve into this further.

Ballistic materials in helmet production

The ballistic performance of a helmet is determined not only by the manufacturing process but also by the materials used. In the production of helmets for law enforcement, three main materials are commonly used: polyethylene, aramid, and metal (e.g., titanium).

Helmets made of polyethylene and aramid offer unbeatable lightweight properties and fragmentation

protection. However, they provide only partial protection against direct fire. On the other hand, helmets made of metal excel in protecting against direct fire, but they are significantly heavier and increase the risk of bullets ricocheting off the helmet.

At Busch PROtective, we have developed a patented process that combines the weight advantage of aramid with the ballistic performance of metal, resulting in a unique combination of actual ballistic protection and weight reduction.

Comparing apples with apples: Varying Test Methods

The most widely recognized ballistic test for helmets is the NIJ standard 0106.01 IIIA, established by the U.S. National Institute of Justice (NIJ) in 1981. Unfortunately, this standard does not address energy transfer. As long as the projectile does not penetrate the helmet and there is no evidence of penetration, it can be described as “bullet-proof” according to this standard.

However, this does not necessarily mean that the helmet protects against the fatal deformation of its inside. In contrast to the NIJ standard, two other methods do consider energy transfer:

the DOJ Ballistic Helmet Testing Protocol (developed by the Federal Bureau of Investigation and the Drug Enforcement Administration) and the European VPAM-HVN test guideline. Among all helmets in the world, the AMP-1 TP from Busch PROtective is the only one that meets both the rigorous DOJ Ballistic Helmet Testing Protocol and the VPAM-HVN test guideline.

Considering Comfort and Modularity

While bullet resistance and protection against deformation are crucial factors directly related to the safety of helmet wearers, several other factors indirectly influence their safety. The two most significant aspects in this regard are comfort and modularity.

Given that ballistic helmets can be heavy, comfort plays a major role as it can significantly impact the wear-

er during use. Manufacturers strive to develop lightweight helmets to enhance comfort, but they are limited by the laws of physics. One approach they take is to experiment with the helmet’s cut, aiming for a smaller surface area to reduce weight. However, such decisions come at a price, as the wearer’s head is protected only by the limited ballistic surface covered in the event of a bullet impact.

Modularity is another crucial factor. Dynamic situations in the field require quick and efficient attachment of ballistic visors, mandibles, or plates to extend the level of protection. Removing the helmet to attach these components temporarily leaves the wearer with zero ballistic protection. On the other hand, wearing a fully equipped, heavy helmet all the time leads to fatigue of the neck muscles and increase level of injury and may be unnecessary for operations that do not require such extensive protection.

Addressing the elephant in the roomy

At Busch PROtective, we prioritize providing the best protection for law enforcement officers in the field. We have developed ready-made solutions that allow the inside of the helmet to deform on average to around 10 joules. Furthermore, we emphasise modularity.

Our innovative solutions ensure that our helmets are safe, lightweight, and modular. For years, we have focused on addressing the elephant in the room and, through our solutions, actively worked to eliminate this threat.

Conclusion

Understanding energy transfer and deformation is vital for helmet wearers, purchasers, and decision-makers. While many helmet manufacturers may not address this issue, it remains a critical aspect of helmet safety. By considering the appropriate test methods, comparing materials, and evaluating comfort and modularity, you can make informed decisions and prioritize the well-being of those who rely on ballistic helmets in their line of duty.

Contact us... let’s talk helmets!



Scan the code to see the deformation of the inside of the helmet.

AMP-1 TP

FULL PROTECTION OF THE HEAD DURING CLOSE QUARTER COMBAT (CQC)/CQB OPERATIONS

Our top-class ballistic helmet: Thanks to the average backface deformation of less than 4 mm/0.156 inch and full bullet resistance, the AMP-1 TP meets the requirements of the VPAM 3 standard and the NIJ IIIA protocol. In addition, our AMP-1 TP is the only* helmet in the world to have passed certification according to the new DEA-FBI protocol for ballistic helmets with flying colors.

The AMP-1 TP provides superior ballistic protection against traditional NIJ IIIA (9 mm & .44 Magnum) and STANAG 2920 fragmentation threats as well as special threat rounds including .45 Cal, .40 Cal, .357 Sig, 7.62 Tokarev and numerous others.

Special properties: Average backface deformation less than 4 mm (well below the industry average of 25 mm / ballistic protection 20 mm from the edge of the helmet / increased ballistic protection with up armour capability with our ballistic visors, mandible and front plate / Speed Connect System for rapid attachment/detachment of all "Up armour" accessories, without having to remove the helmet, keeping the head protected constantly / heat-resistant uni-sized shell compatible with many common hearing protection headsets and respirators. With the visor attached, the rail system (CMR-1) remains free for further accessories (Torches, Comms, camera) / Comfort class "A" with our super soft pad system and 4-point removeable (without tools) harness fitting the the chin and neck area.



* As of March 2023



black
 ranger green
 grey
 midnight-blue

NVG-1

Various NVG mount options, incl. Wilcox®, Unity Tactical® and Armor Australia®

CMR-1

Multifunctional rail with SCS & Picatinny rail system for quick attachment of accessories such as visors, respirators, lamps, hearing protection headsets, etc.

2K PAINT

Two-component paint increases the stability and resistance of the paint coating

SCS-1

Speed Connect System (SCS) for quick helmet attachment without having to take off the helmet

CRS-2

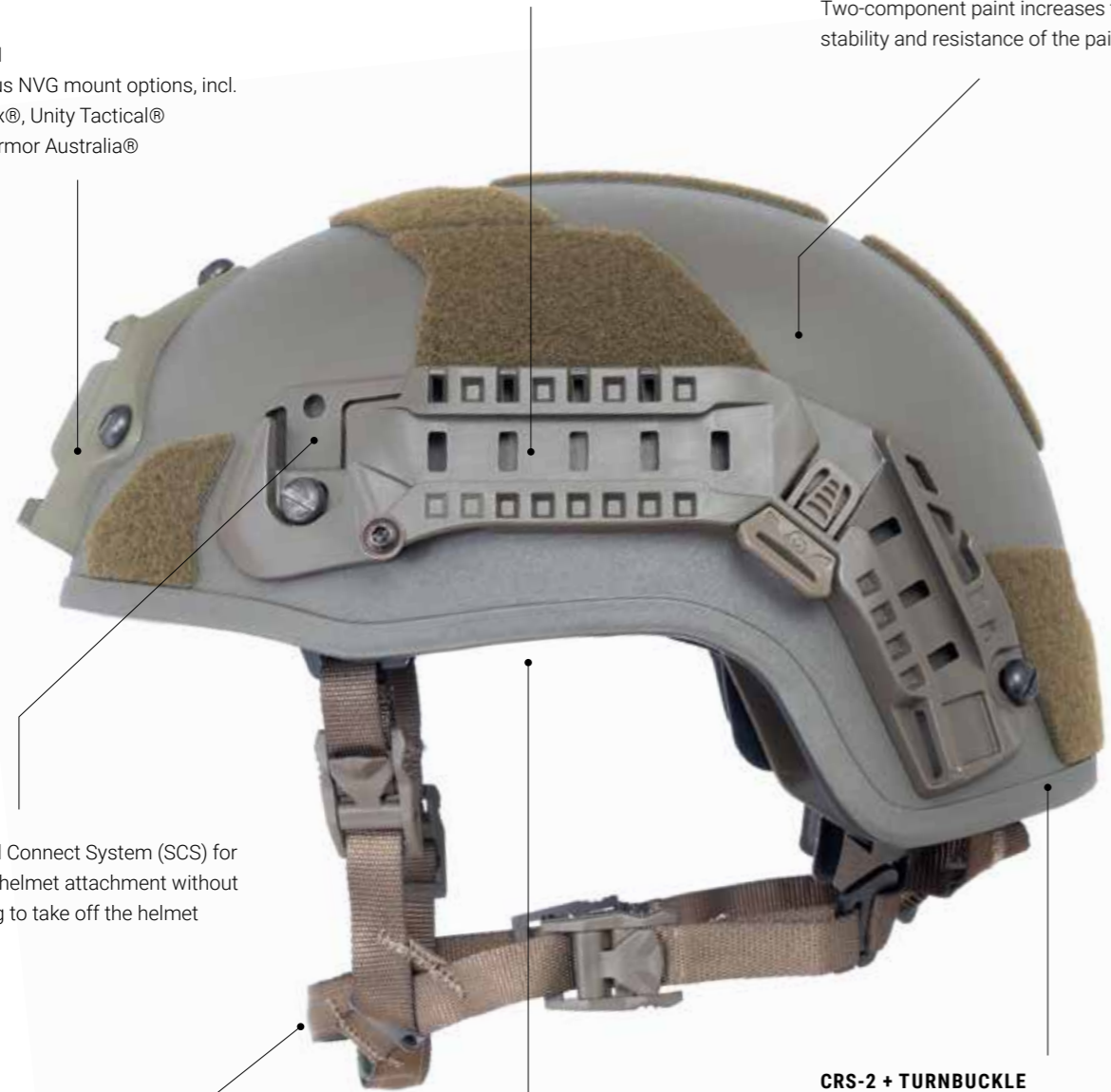
4-point harness for the chin and neck area for quick adjustment of the helmet on the head. Removeable & changeable without using any tools

EPP/CPP

Energy-absorbing pads and comfort pads for the helmet wearer's safety and comfort

CRS-2 + TURNBUCKLE

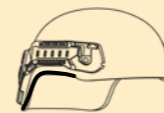
A wheel-dial system for quick adjustment of the helmet to various head sizes from XS to XL, without having to take off the helmet

**SPECIFICATIONS**

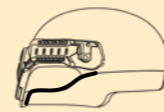
Material	Kevlar fiber with EBSP technology®
Paint	Two-component paint (2K paint)
Type	High Cut, Mid Cut, Full Cut
Edge protection	EPDM rubber edging
Colors	Black, ranger green, grey, midnight-blue
Weight	High Cut: 1580 g / 3.48 lbs incl. inside equipment, 1680 g / 3.70 lbs incl. inside equipment and rails Mid Cut: 1590 g / lbs 3.51 incl. inside equipment, 1690 g / 3.73 lbs incl. inside equipment and rails Full Cut: 1650 g / 3.64 lbs incl. inside equipment, 1750 g / 3.86 lbs incl. inside equipment and rails
Standard scope of delivery	CPP-1 pad system, CRS-2 harness system, CMR-1 rail system
Size	Unisize 52–62 cm / 6 1/2–8 in.
Interfaces	CMR-1 rail system, NVG mount**

* Helmet weight is subject to manufacturing tolerances of ±50 g / 0.11 lbs

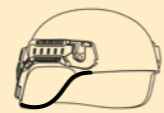
** The NVG mount and the Velcro pads are optional accessories.

HELMET CUTS

High Cut
with Rails



Mid Cut
with Rails



Full Cut
with Rails

STANDARDS/CERTIFICATIONS

- VPAM-HVN 2009, test level 3
- DEA-FBI 2019 Helmet Testing Protocol
- NIJ-STD-0106.01 IIIA, NIJ-STD-0108.01
- 3.1 TR overall system "ballistic helmet" as of May 2010
- STANAG 2920, 1.1 g FSP: V50 = 630 m/s
- Shock absorption properties according to DIN EN 397
- 3.2, 3.4, 3.5 TR overall system "ballistic helmet" as of May 2010

ACCESSORIES

- NVG mount
- Various visors: BAV-1, CAV-1
- Mandible BAM-1
- Ballistic plate BAP-1 AK
- Velcro pads CAP-1 and CAP-2
- Bungees BNG-1
- Helmet covers CAC-1E and CAC-2
- Counterweight pack CAW-1
- Chin strap CRS-2
- Communication adapter COM-1
- Tactical helmet bag TTB-1
- Picatinny Rail Adapter CPR-1



**The outstanding
ballistic performance of
the AMP-1 TP helmet**



02 / TACTICAL, PATROL, TRAINING / AMP-1 TP



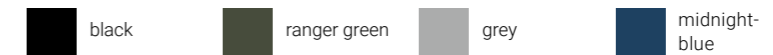
02 / TACTICAL, PATROL, TRAINING / AMP-1 TP

AMP-1E

LIGHTWEIGHT BALLISTIC HELMET FOR PATROL OFFICERS AND FIRST RESPONDERS

Our lightweight aramid helmet is the perfect solution for those who are at the scene first. First responder are exposed initially exposed to the threat and dynamic challenge of everyday policing. The AMP-1E offers ballistic protection against 9 mm & .44 Magnum (NIJ IIIA) and fragmentation protection according to STANAG 2920. The protective capabilities outstrip any other NIJ IIIA helmets on the market. The certifications and test conducted, showing its protection in depth, makes this a master within the NIJ IIIA class of helmets. Thanks to its unisize, extremely lightweight, it is an ideal helmet for patrol officers and first responders.

Special properties: Increased protection against penetration and energy transfer / low weight / high wearing comfort thanks to 4-point harness for the chin and neck area and pad system / extended ballistic protection area with ballistic visors, ballistic mandible and/or ballistic front plate / Speed Connect System for the quick attachment of visors without having to take off the helmet / with visor mounted, the CMR-1 rail system remains free for further accessories / heat-resistant shell / compatible with many common hearing protection headsets and respirators.



NVG-1

Various NVG mount options, incl. Wilcox®, Unity Tactical® and Armor Australia®

CMR-1

Multifunctional rail with Speed Connect System & Picatinny rail system for quick attachment of accessories such as visors, respirators, lamps, hearing protection headsets, etc.

2K PAINT

Two-component paint increases the stability and resistance of the paint coating

SCS-1

Speed Connect System (SCS) for quick helmet attachment without having to take off the helmet

CRS-2

4-point harness for the chin and neck area for quick adjustment of the helmet on the head

EPP/PPP

Energy-absorbing pads and comfort pads for the helmet wearer's safety and comfort

CRS-2 + WHEEL-DIAL

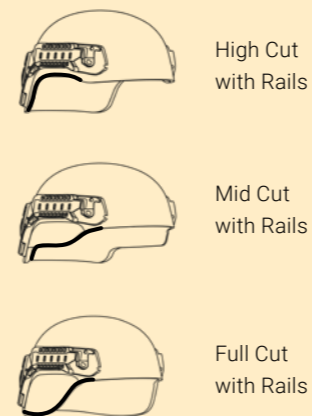
A wheel-dial system for quick adjustment of the helmet to various head sizes from XS to XL, without having to take off the helmet

**SPECIFICATIONS**

Material	Aramid fiber
Paint	Two-component paint (2K paint)
Type	High Cut, Mid Cut, Full Cut
Edge protection	EPDM rubber edging
Colors	Black, ranger green, grey, midnight-blue
Weight*	High Cut: 1310 g / 2.89 lbs incl. inside equipment 1410 g / 3.11 lbs incl. inside equipment and rails Mid Cut: 1430 g / 3.15 lbs incl. inside equipment 1530 g / 3.37 lbs incl. inside equipment and rails Full Cut: 1450 g / 3.20 lbs incl. inside equipment 1550 g / 3.42 lbs incl. inside equipment and rails
Standard scope of delivery	CPP-1 TP pad system, CRS-2 harness system, CMR-1 rail system
Size	Unisize 52–62 cm
Interfaces	CMR-1 rail system, NVG mount**

* Helmet weight is subject to manufacturing tolerances of ± 50 g / 0.11 lbs

** The NVG mount and the Velcro pads are optional accessories.

HELMET CUTS**STANDARDS/CERTIFICATIONS**

- NIJ-STD-0106.01 IIIA, NIJ-STD-0108.01
- STANAG 2920, 1.1 g FSP: V50 = 630 m/s
- Shock absorption properties according to DIN EN 397
- Shock absorption properties according to AR/PD-10-02 Rev A (@10fps)
- Backface deformation tested at all temperatures (NTS-Labs)
- Tokarev testet to 7.62 x 25
- Bolt/screws tested - V50

ACCESSORIES

- NVG mount
- Various visors: BAV-1, CAV-1
- Mandible BAM-1
- Velcro pads CAP-1 and CAP-2
- Bungees BNG-1
- Helmet covers CAC-1E and CAC-2
- Counterweight pack CAW-1
- Chin strap CRS-2
- Communication adapter COM-1
- Tactical helmet bag TTB-1
- Picatinny Rail Adapter CPR-1

LIGHTWEIGHT

Training and combat diving



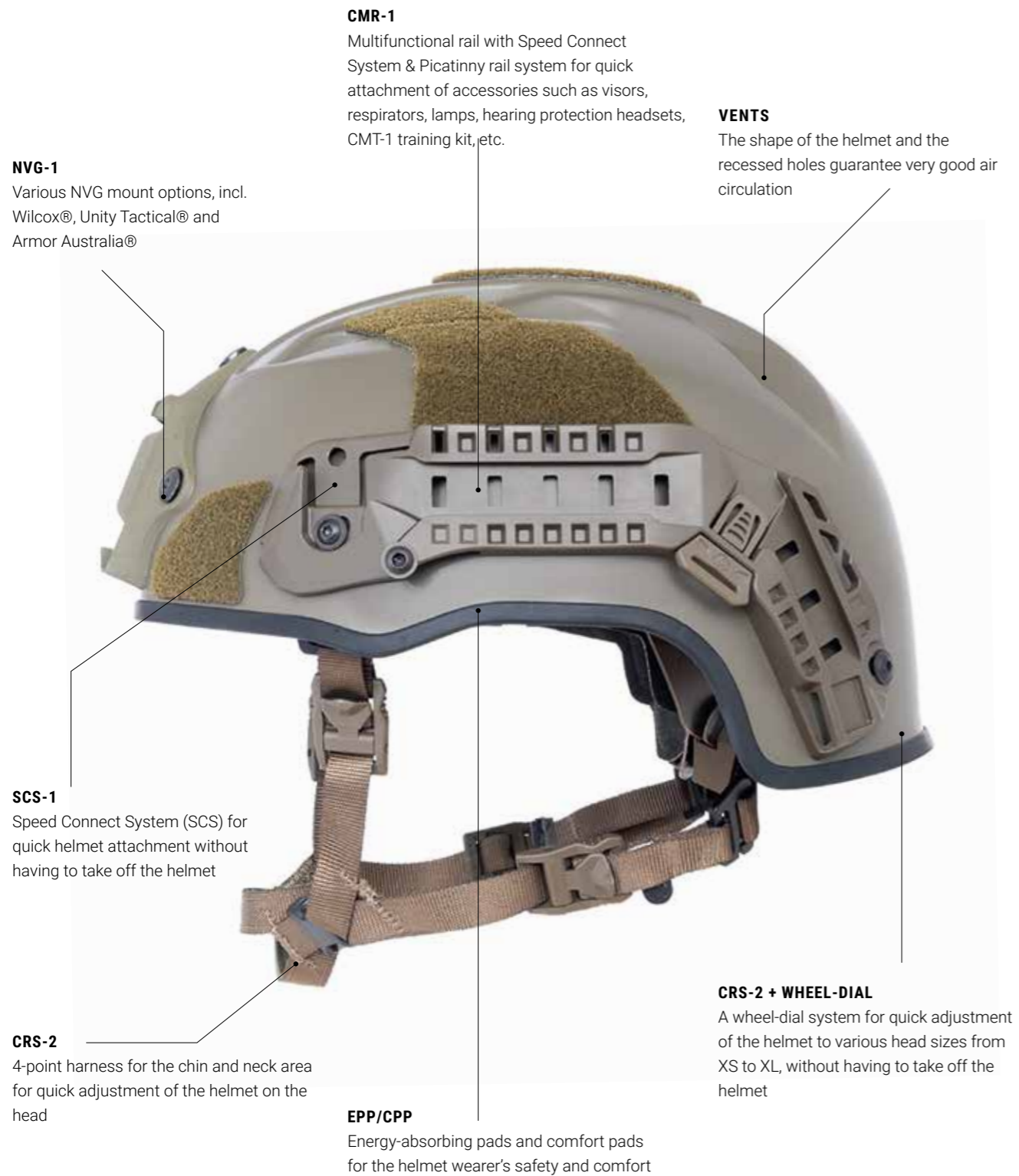
AMH-2

MULTIFUNCTIONAL HELMET FOR TRAINING SCENARIOS AND DYNAMIC, NON-BALLISTIC OPERATIONS

The AMH-2 is a lightweight, extremely durable helmet with very good shock absorption properties and outstanding ventilation. The AMH-2 is the ideal helmet for training scenarios, rescue operations and dynamic scenarios from the air, water and vehicles. The AMH-2 is the basic helmet for our CTM-1 training kit.

Special properties: Low weight, high level of protection / good ventilation due to vents holes / high wearing comfort thanks to the 4-point harness for the chin and neck area, wheel-dial and pad system / Speed Connect System for quick attachment of visors / compatible with many common hearing protection headsets and respirators / seawater resistant / thermally resistant helmet shell / ideal helmet platform for our CTM-1 training kit.





SPECIFICATIONS

Material	Fiberglass-reinforced thermoplast SMC
Paint	Two-component paint (2K paint)
Type	High Cut
Edge protection	EPDM rubber edging
Colors	Black, ranger green, yellow, red, orange, grey, dark blue, other colors on request
Weight*	High Cut: 630 g / 1.39 lbs incl. inside equipment and rails
Standard scope of delivery	CPP-1 pad system, CRS-2 harness system, CMR-1 rail system
Size	Unisize 52–63 cm / 6 1/2–8 in.
Interfaces	CMR-1 rail system, NVG mount**

* Helmet weight is subject to manufacturing tolerances of ± 50 g / 0.11 lbs

** The NVG mount and the Velcro pads are optional accessories.



STANDARDS/CERTIFICATIONS

- Shock absorption properties according to DIN EN 397

ACCESSORIES

- NVG mount
- Visors of series CAV-1, CTV-1
- Training kit CTM-1
- Velcro pads CAP-1 and CAP-2
- Bungees BNG-1
- Helmet covers CAC-1 E and CAC-2
- Counterweight pack CAW-1
- Chin strap CRS-2
- Communication adapter COM-1
- Tactical helmet bag TTB-1
- Picatinny Rail Adapter CPR-1

CTM-1

TRAIN AS YOU FIGHT: FULL PROTECTION FOR OPERATIONAL SCENARIOS DURING TRAINING

Our CTM-1 training kit provides excellent protection for the head, face and neck area against FX, UTM, Simunition and Airsoft ammunition from both small and long weapons. The CTM-1 training kit offers 360° protection, excellent ventilation circulation and also enables optimal situational awareness. Training specificity is important, especially when the primary focus is on the task at hand. CTM-1 can be combined on to both our AMP/AMH helmets, thus enforcing the "Train as you fight" principle.

Special properties: Unrestricted field of vision / situational awareness for user and trainer / 360° protection for head, eyes, face and neck area / modular design, low weight, high wearing comfort / excellent ventilation and thermoregulation / visor with special anti-scratch (outside) and anti-fog (inside) coating / simple, modular change of components without tools / components can be used individually / suitable for spectacle wearers / suitable for various COM and video systems / compatible with all helmets with a Busch PROtective CRM-1 rail system / Made in Germany.



**SPECIFICATIONS**

Components	CTV-1 visor* (CTV-1 PC 3 SC 70 AF/AS) CRH-2 side arms CTM-1 mandible* CTM-1 shroud
Material	PC, Cordura™, metal
Colors	Black and ranger green
Weight*	CTV-1 visor: 138 g / 0.30 lbs CTM-1 mandible with CRH-2 side arms: 238 g / 0.53 lbs CTM-1 shroud: 216 g / 0.48 lbs
Interfaces	Connection to CMR-1 rail system. Suitable for: AMH-2, AMP-1 TP (High Cut, Mid Cut, Full Cut) AMP-1 E (High Cut, Mid Cut, Full Cut)
Accessories	TearOff, PinLock or DualLock, System Bag
Helmets	See helmet data sheets

* Optionally with additional labyrinth seal (LS)

STANDARDS/CERTIFICATIONS**VISOR**

- STANAG 2920 FSP 1 (1.1 g)
- EN 166: 2001 | Marking: 2C-1.2 BPG 1 AT N 3 9 -166 AT CE
- 7.1.2 Optical requirements (1), optical class 1
- 7.2.2 Protection against high speed particles (A) 190 m/s
- 7.3.4 Protection against high speed particles at extreme temperatures (T)
- 7.3.2 Resistance against fogging (N)
- 7.2.4 Protection against droplets and splashes of liquids (3)
- 7.2.4 Resistance against molten metal and hot solids (9)
- ANSI/ISEA Z87.1 – 2020

**CTM-1 KIT TESTS
(VISOR + MANDIBLE + SHROUD)**

- Ballistic resistance test:
NTS-Chesapeake (USA) Testing
- Simunition FX 5.56 x 45 mm,
Force on Force 5.56 x 45 mm
(Speer)
- UTM 5.56 x 45 mm
- Force on Force 9 mm (Speer)
- Simunition FX 9 mm



ACCESSORIES



BAM-1

BALLISTIC MANDIBLE (AMP-1 TP)

SPECIFICATIONS

Material	Aramid fiber
Coating	Abrasion-resistant textile finish
Edge protection	EPDM rubber edging
Colors	Black, ranger green, grey, midnight-blue
Weight*	280 g / 0.62 lbs*
Connections	Metal hooks and clips to CMR-1 rail

* Weight is subject to manufacturing tolerances of ±10 g / 0.02 lbs.

SPECIAL PROPERTIES

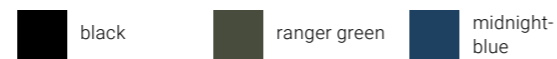
- Light and robust
- Enables rapid extension of the ballistic protection area
- Ultra-fast assembly thanks to metal hooks and clips
- Compatible with AMP-1 TP and AMP-1 E helmets in Full Cut, Mid Cut and High Cut
- Perfectly adapted to the ballistic visor of the BAV-1 series in Mandible Cut

STANDARDS/CERTIFICATIONS

- Resistance to penetration against 9 mm DM41 with 425 ±10 m/s - 1400 ±33 FPS
- STANAG 2920 – V50 with 17 g (1.1 g) up to 600 m/s

ACCESSORIES

- Transport bag



BAP-1 AK

RETROFITTABLE FRONT PLATE (AMP-1 TP, AMP-1 E)

SPECIFICATIONS

Material	UHMW-PE
Coating	Extremely resistant PU coating
Colors	Black, ranger green
Weight*	525 g / 1.16 lbs*
Connections	Velcro
Protection area	446 cm ² / 0.48 sqf

* Weight is subject to manufacturing tolerances of ±10 g / 0.02 lbs.

SPECIAL PROPERTIES

- Ultra-fast assembly thanks to Velcro connection
- Can be retrofitted to helmets of the AMP-1 series without NVG mount
- Also suitable in combination with BAV and CAV visors

STANDARDS/CERTIFICATIONS

- VPAM-HVN 2009, test level 6*, residual energy < 45 joules

ACCESSORIES

- Velcro pads CAP-1, CAP-2

* This test level is only achieved with regard to ballistic resistance and not with regard to residual energy. For further details, please refer to the test report.





CAC-1E

HELMET COVER (AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

Material.....Polyamide, mesh, Velcro
Style.....Closed, with flap for NVG mount
Colors.....Black, ranger green, multicam
Connections.....Velcro pads on the helmet (CAP-1, CAP-2),
 Velcro pads on the cover for flags and badges



CAC-2

HELMET COVER (AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

Material.....Polyamide, mesh, Velcro
Style.....Closed, with flap for NVG mount
Colors.....Black, ranger green, multicam
Connections.....Velcro pads on the helmet (CAP-1, CAP-2),
 Velcro pads on the cover for flags and badges



CAP-1

VELCRO® PADS (AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

Material.....Velcro
Colors.....Black, ranger green

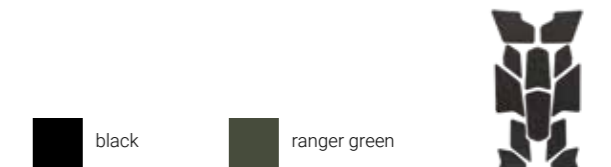


CAP-2

VELCRO® PADS (AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

Material.....Velcro
Colors.....Black, ranger green





CRS-2

HARNESS SYSTEM
(AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

MaterialPolyamide, aluminium, genuine leather, Nomex (depending on customer requirements)
SizesM/L, L/XL
ColorsBlack, ranger green
StyleClosed-loop
OpeningPlastic buckle



CRS-2 SV

HARNESS SYSTEM WITH QUICK LOCK
(AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

MaterialPolyamide, aluminium, genuine leather, Nomex (depending on customer requirements)
SizesUnisize
ColorsBlack, ranger green
StyleOpen-loop
OpeningPlastic buckle



CHE-1

HARNESS EXTENSION

SPECIFICATIONS

ColorsBlack, ranger green



CPP-1

PADDING (AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

MaterialEPP, foam, viscoelastic foam, synthetic leather
ConnectionVelcro inside the helmet



CPP-2

PADDING (AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

MaterialEPP, foam, open cell foam, mesh
Sizes2 mm, 4 mm, 6 mm thickness
ColorsBlack, blue
ConnectionVelcro inside the helmet

SPECIAL PROPERTIES

• Optional, improved, multi-layer pad system that provides maximum stability and long-lasting comfort, especially when using night vision gear and heavy helmet accessories





CPP-2 FR

PADDING (AMP-1 TP, AMP-1 E, AMH-2)

SPECIFICATIONS

MaterialEPP, foam, open cell foam, Nomex®
Sizes2 mm, 4 mm, 6 mm thickness
ColorsAnthracite
ConnectionVelcro inside the helmet

SPECIAL PROPERTIES

- Optional, improved, multi-layer pad system that provides maximum stability and long-lasting comfort, especially when using night vision gear and heavy helmet accessories
- Suitable for helmets with flame retardant properties



CAH-2

HELMET HOLDER

SPECIFICATIONS

ColorsBlack

SPECIAL PROPERTIES

- Magnetic hassle free helmet holder. Quick, simple and effective method of attaching the helmet to the waistbelt, body armour or molle on your equipment.



NVG-AA

SPECIFICATIONS

See the manufacturer's specifications

NVG-WX WLS

SPECIFICATIONS

See the manufacturer's specifications



black



ranger green



BUNGEEES

SPECIFICATIONS

ColorsBlack



CAW-1

COUNTERWEIGHT BAG

SPECIFICATIONS

MaterialPolyamide, Velcro
Weights5 x 90 g / 0.20 lbs, 7 x 50 g / 0.11 lbs
ColorsBlack, ranger green, multicam
ConnectionVelcro on the helmet, harness to rail

SPECIAL PROPERTIES

- Bag with 10 slots that can be equipped with batteries or weights
- The bag offers a variable total weight and an outer surface with Velcro pads
- Compatible with CMR-1 rail systems



CAW-2

COUNTERWEIGHT BAG

SPECIFICATIONS

MaterialPolyamide, Velcro
ColorsBlack, ranger green, multicam
ConnectionVelcro on the helmet, bungees

SPECIAL PROPERTIES

- The bag is compatible with the CAC-2 helmet cover
- It can be attached to Velcro pads and secured with bungees



COM-1

COMMUNICATION ADAPTER

SPECIFICATIONS

ColorsBlack

SPECIAL PROPERTIES

- The COM-1 communication adapter enables seamless integration of most common hearing protection systems, such as Peltor®, TCI Liberator®, Invisio®, Otto®, etc. with a Busch PROtective CMR-1 rail system



CPR-1

PICATINNY RAIL ADAPTER CPR-1

SPECIFICATIONS

ColorsBlack

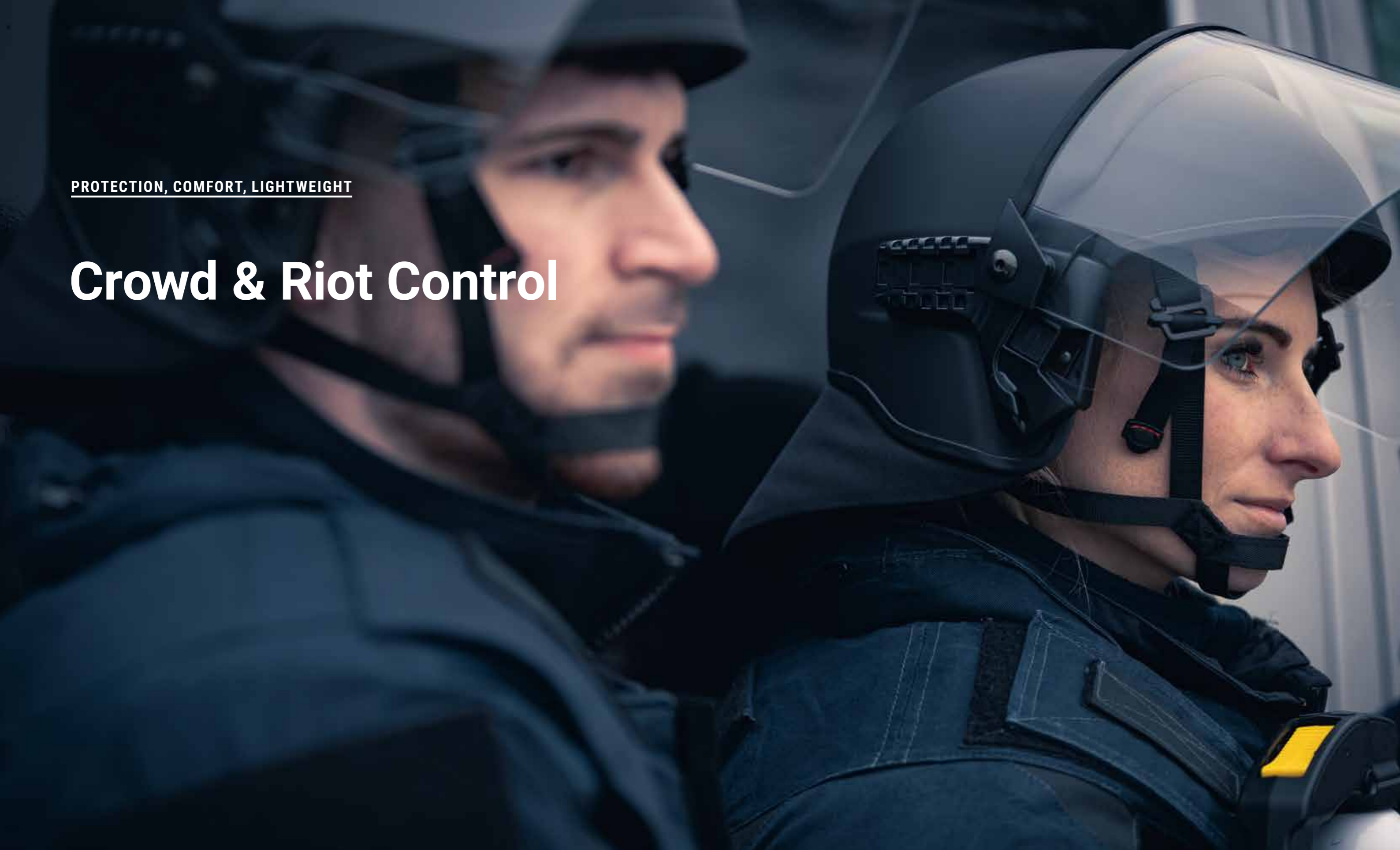
SPECIAL PROPERTIES

- Picatinny rail adapter enables easy attachment of accessories on the Busch PROtective CMR-1 rail system



PROTECTION, COMFORT, LIGHTWEIGHT

Crowd & Riot Control



TOPIC: USER PROFILES / **RISK ASSESSMENT**

All good things come in four...

Actually, “in threes”, but we are not satisfied with only three options. There are four seasons, four Teenage Mutant Ninja Turtles, a quadriga, the Four Hills Tournament ... and cars with four wheels are somehow better than those with three. There were four evangelists, not three. What about the Fab Four? Would they have been as fabulous without John or Ringo? In this article, of course, we

do not want to decide whether the old saying should be changed or not. For us, all good things come in fours because we offer four Crowd & Riot Control helmets. One helmet, four protection classes – that makes the difference. The look and handling of all four AMR-1/ARC-2 E versions are identical. A strategic decision that we will explain in detail in this article.

A limited choice

After many discussions with end users, we got the impression that the performance of the Crowd & Riot Control helmets does not necessarily meet the customers’ requirements. For users, this meant that it was a standard solution and that there was no way to make a more suitable choice at the time of purchase, even though the operational scenarios of the end users are anything but standard. So these discussions gave rise to the idea of developing a Crowd & Riot Control helmet with four protection classes and many well-thought-out functionalities. We wanted to give our customers a choice when selecting a helmet that suits them best – to match the operational scenarios – without revealing tactical differences directly through the look of the helmet. If the level of danger is low, why be tied to a heavy and more expensive helmet? For high-risk operations, on the other hand, the highest level of protection is crucial. It is good if the customer has a choice.

User profiles

Before we develop our helmets, we always look at the tasks of various users. This results in user profiles that enabling us to define the user’s requirements and priorities. These are some of the questions we always ask ourselves:

- What hazards are the users exposed to?
- Which strategy/operational objective is being pursued?
- What is the area of application?
- What are its climatic or other external conditions?

In the case of riot helmets, we quickly realized that we had to develop a helmet that would provide protection for

both large teams during major demonstrations and for prison officers during cell extraction. For every climate zone around the world. It was immediately clear to us that it is impossible to meet all of these needs with just one helmet. That is why we came up with the idea of a helmet with four protection classes.

Implementation

With helmets, protection performance is correlated to their weight and size. The higher the protection class, the heavier and/or larger the helmet. But we did not want to compromise on size. Our four helmets have the same shell size – which is 19% smaller than the standard solutions available on the market. This reduction in volume by almost one-fifth plays a very important role in indoor scenarios. But even for operations that can last for hours, compact is simply the better solution. Other operational aspects that we looked into when developing the helmets were the temperature and air circulation inside the helmet. Thanks to the variable pad system and a removable neck guard (simple and quick mounting), we were able to increase the air circulation inside the helmet and consequently reduce overheating of the head significantly. Especially in the hot summer months, users will thank us.

Furthermore, the interior of the helmets also has a positive impact on situational awareness, especially when listening. The construction of the shell without padding in the ear area allows the user to better perceive sounds from the environment. This is particularly important when communicating with colleagues during an operation, but also when exposed to possible dangers that may come from the side or from behind. Another important component of our helmets is the rail, which was specially developed for riot helmets and allows a respirator or mandible to be attached with a simple click. Thanks

to the multifunctional rail on both sides, you can attach accessories (Torch, camera), to the specific needs of the operation and ensure that the area, wherever your head is pointing/moving to is covered and visibility is clear.

The choice

The biggest unique selling point of our solution is definitely the choice of protection class. You know best what dangers you need to protect yourself from, and we give you the opportunity to choose a suitable helmet. A true alternative to the standard.

The AMR-1 E is the lightest helmet in its class. At 1450 g / 3.20 lbs (incl. visor, inside equipment, rail system, and neck guard), it offers good protection against

blows, impact, and stabbing. Next in line is the AMR-1 E+. With increased resistance against penetration, excellent shock absorption, and lightweight ballistic protection, the helmet is suitable for operations with risks of attack from blunt or sharp weapons. The AMR-1 TP goes one step further. The helmet not only meets the highest standards in terms of shock absorption, stab and impact protection but also pro-

vides additional protection against attacks with chemicals and flames. But in a class of its own is the ARC-2 helmet. In addition to the features already mentioned, this helmet offers full ballistic protection against small arms and fragmentation.

What dangers do you face?

We hope you agree that the old adage needed updating – as not all things come in threes (3s). As not all good things come in threes. With us and for you, there are four good things! Find out if one of our solutions meets the dangers you face.

Let’s talk helmets.

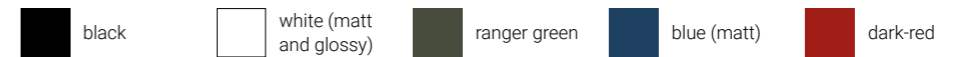
The biggest unique selling point of our solution is the choice of protection class.

AMR-1 TP, AMR-1 E+, AMR-1 E, ARC-2 E

FOUR HELMET SYSTEMS FOR USE IN LAW ENFORCEMENT SERVICES

With a new range of helmets for Crowd and Riot Control, Busch PROtective is launching four helmet types, all with the same look and feel. Despite their similarity, they all have unique properties that offer the wearer the best possible protection and a high level of comfort during use. Depending on the operational risk, different protection classes are available for the four helmet types. Their uniform appearance with a different protection class gives the user additional tactical advantages.

Properties of all four helmet types: Increased audiovisual awareness of the surroundings / good air circulation inside the helmet / low weight / high wearing comfort thanks to the 4-point harness in the chin and neck area, as well as the pad system / rail and visor with drainage system for protection against chemicals / rail system for faster attachment of respirators and transparent mandible / unisized shell overcoming logistic and sizing issues / removable neck guard included in the standard scope of delivery / two-component paint to protect against wear / thermally resistant helmet shell.



COMPACT DESIGN

19% less volume compared to other helmets in the same class

2K PAINT

Two-component paint increases the stability and resistance of the paint coating

CRR-1 RAIL SYSTEM

Liquid drainage system to repel hazardous chemicals, etc. (1), clip for inserting a respirator or mandible (2), visor protection support for better impact defence (3)



3 MM/5 MM VISOR

Visor for a better protection against projectiles, liquids and chemicals, with PinLock (anti-fog) as an option

CRS-2

4-point harness for the chin and neck area for quick adjustment of the helmet without having to take it off

CRN-1

Removable neck guard

CPP

CPP-1 or CPP-2 pad system for the best possible and adaptable wearing comfort, fire-repellent material available as an option

Protective rubber seal against chemicals and liquids



CRS-2

Adjustable wheel-dial system for continuous adjustment of the helmet size

CAH-2/CAH-3

(Optional) helmet holder system for attachment to uniforms and equipment

AMR-1 TP

THE OPERATIONAL HELMET PAR EXCELLENCE

With its lightweight ballistic properties, the AMR-1 TP protects the wearer against home-made projectiles and small calibres. In addition, it meets the highest standards in the area of shock absorption, stab and impact protection and wearing comfort (Technical Guidelines (TR) as of 2011)*. With its high level of modularity, users can perfectly adapt the helmet to their individual needs.

1660 g / 3.66 lbs** incl. standard visor, inside equipment, rail system and neck guard



* AMR-1 TP is still in the certification phase (as of: February 2023)
** Helmet weight (with typical manufacturing tolerances of ± 50 g / 0.11 lbs)

AMR-1 E+

THE TOP PRODUCT FOR DAILY USE

The AMR-1 E+ is a lightweight tactical helmet with excellent shock absorption and increased resistance to penetration. Whether in police operations or for use in law enforcement – wherever there is an increased risk of attack by blunt or sharp weapons, the AMR-1 E+ is the perfect companion at your side.

1620 g / 3.57 lbs* incl. standard visor, inside equipment, rail system and neck guard



* Helmet weight (with typical manufacturing tolerances of ± 50 g / 0.11 lbs)

AMR-1 E

THE LIGHTEST HELMET IN ITS CLASS

The AMR-1 E is the perfect helmet for use in surveillance, riot and patrol duties. In all dynamic situations, from riot and crowd control to cell extractions, the user is perfectly protected by the lightest helmet in its class.

1450 g / 3.20 lbs* incl. standard visor, inside equipment, rail system and neck guard



* Helmet weight (with typical manufacturing tolerances of ± 50 g / 0.11 lbs)

ARC-2 E

A WORLD FIRST: OPERATIONAL HELMET WITH BALLISTIC PROTECTION

The ARC-2 E provides protection in operations primarily where there is a very high risk of being attacked with handgun threats. In addition, this high-end helmet is certified according to STANAG 2920 (1 g FSP: V50 = 630 m/s). Like the other three helmets of the series, this one also stands out due to its above-average air circulation and the excellent audiovisual and situational awareness of the wearer.

1950 g / 4.30 lbs* incl. standard visor, inside equipment, rail system and neck guard



* Helmet weight (with typical manufacturing tolerances of ± 50 g / 0.11 lbs)

	AMR-1 TP	AMR-1 E+	AMR-1 E	ARC-2 E
Material	Fiberglass-reinforced thermoplast with aramid	Fiberglass-reinforced thermoplast with aramid	Fiberglass-reinforced thermoplast	Aramid
Paint	Two-component paint (2K paint)			
Type	Full Cut Anti-Riot (Crowd & Riot Control Cut)			
Edge protection	EPDM rubber edging			
Colors	Black, ranger green, midnight-blue, white, red			
Weight*	1660 g / 3.66 lbs incl. inside equipment, rail system, neck guard and visor	1620 g / 3.57 lbs incl. inside equipment, rail system, neck guard and visor	1450 g / 3.20 lbs incl. inside equipment, rail system, neck guard and visor	1950 g / 4.30 lbs incl. inside equipment, rail system, neck guard and visor
Standard scope of delivery	CRN-1 neck guard optionally with FR, CAV-1 visor, CPP-2 pad system, CRS-2 harness system, CRR-1 rail system, CRM mandible			
Size*	Unisize 52–62 cm / 6½ to 8 in.			
Interfaces	CRR-1 rail system			
Standards/Certifications				
Testing according to Technical Guideline for a modular system – protective helmet, headset, respirator As of: Feb. 2011	✓ ^{***}	⊗	⊗	⊗
Ballistic properties according to VPAM-HVN level 1, 22 long rifle	✓	✓	⊗	✓
Ballistic protection according to VPAM-HVN 2009 standard, munition according to NIJ 0108.01 level I/1, calibre .38 special RN lead	✓	✓	⊗	✓
Shock absorption properties according to DIN EN 397, 5.1.1	✓	✓	✓	✓
Resistance to penetration according to DIN EN 397, 5.1.2	✓	✓	✓	✓
Flame resistance according to DIN EN 397, 5.1.3	✓	✓ [*]	✓ [*]	✓ [*]
Lateral deformation according to DIN EN 397, 5.2.4	✓	✓	⊗	✓
ČSN EN 39 5360: Shell and visor according to TON 3, neck guard according to TON 1	✓	✓	⊗	✓
STANAG 2920 17 grain fragment: V50	⊗	⊗	⊗	✓
VPAM 2004 KDIW helmet, visor, neck guard	✓	✓ ^{**}	⊗	✓ ^{**}
ECE R 22-03 Shock absorption	✓	⊗	⊗	⊗

* Only helmet shell

** Without neck guard

*** AMR-1 TP is in the process of certification (February 2023)



ACCESSORIES



LASER PROTECTION SYSTEM



TSB-1 XL

BAG

SPECIFICATIONS

ColorsBlack



CRN-1 E / CRN-1 E+

NECK GUARD

SPECIFICATIONS

ColorsBlack



CRN-1 E FR / CRN-1 E+ FR

NECK GUARD

SPECIFICATIONS

ColorsBlack

	CRN-1 E	CRN-1 E+	CRN-1 E FR	CRN-1 E+ FR
Colour	black	black	black	black
Weight	96 g / 0.21 lbs	126 g / 0.28 lbs	96 g / 0.21 lbs	126 g / 0.28 lbs
Protection area	330 cm ²	330 cm ²	330 cm ²	330 cm ²
Standards			DIN EN 13087-7	DIN EN 13087-7
Properties			Flame retardant	Flame retardant

MODULAR PROTECTION

Fire & emergency services



TOPIC: HELMET SELECTION

It's a match!

While the article's title may be associated with dating platforms, we want to clarify that our expertise lies not in dating but in head protection systems. However, there are interesting parallels between selecting a helmet and searching for a partner. Let's explore these connections.

First impressions

Just like when meeting someone for the first time, choosing a helmet involves getting to know each other. While visual aspects can sometimes distract us from potential is-

ues when choosing a partner, we strongly advise against applying the same approach to helmet selection. Looks are not everything; inner values matter. In the case of helmets, these inner values manifest as certifications.

Inner values

When it comes to helmets, certifications serve as the inner values that truly count. If you are involved in activities such as wildland firefighting, technical rescue, or urban search and rescue, there are four standards you should consider. These standards ensure that your helmet is suitable for your specific needs:

- EN 16471:2014 – Helmets for wildland firefighting
- ISO 16073-5:2019 – Helmets for wildland firefighting personal protective equipment
- EN 16473:2014 – Helmets for technical rescue
- ISO 18639-5:2018 – PPE ensembles for firefighters undertaking specific rescue activities

Until 2014, the only European standard for firefighting helmets was EN 443:2008, designed for firefighting in buildings and other structures. However, due to climate changes and evolving disaster scenarios, personal protective equipment requirements have changed. Many head protection systems on the market today were developed for the classic firefighting application and have limited adaptability to new hazards. Recognizing the need for a more tailored approach, we developed the ATR-1 helmet based on a comprehensive hazard assessment and risk analysis. Our helmet perfectly aligns with the following operational scenarios:

- Technical rescue operations
- Urban Search and Rescue (USAR)
- Wildland firefighting
- Height rescue (EN 12492:2012) UIAA 106
- Water rescue (EN 1385:2012)
- Rescue service

The look

Let's be honest, the look plays a significant role, also when choosing a head protection system. Fortunately, our ATR-1

helmet boasts a sleek and low-profile design. The aerodynamic lines of the helmet are complemented by two rails on the sides, while the front openings resemble cat's eyes. With a range of ten colors available, you can find the perfect look for any occasion. Our helmet is not only functional but also an eye-catching piece of equipment.

Character

For better or for worse - character plays an important role. Our helmet is characterized by exceptional resistance. The carbon fiber-reinforced duroplast (SMC) ensures high protection against penetration and excellent shock absorption. The helmet's hard outer shell is balanced with a soft, comfortable interior, allowing you to work for extended periods without discomfort.

And don't forget about the family

When building a relationship, you also consider the family attached to your partner. Similarly, our ATR-1 helmet comes with a fantastic family of products, including additional protective functions and tested accessories.

These include:

1. Additional protective functions
 - Eye and/or face protection, requirements according to EN 14458: 2018
 - Tight-fitting safety goggles, requirements according to EN 166: 2001
 - Mesh visors, requirements according to EN 1731: 2006
 - Hearing protection headset (active or passive) mounted on the helmet, requirements according to EN 352-3:2021
 - Neck guard – to protect the head and neck area from falling parts and hot (possibly dripping) liquids / plastics
2. Tested and approved accessories

By the way: Did you know that "accessories" and "products with additional protective functions" are not the same thing? Products with additional protective functions (integrated or non-integrated) have been tested and certified together with the helmet and thus extend the protective functions of the helmet. Accessories, on

the other hand, can be attached to a helmet but do not provide extended protection. And now comes the exciting part: Some accessories and/or non-integrated additional protective devices may be unsuitable for technical rescue or wildland firefighting when exposed to flames. In such cases, the manufacturer should provide information on the conditions under which such accessories and/or non-integrated additional protective devices may be used. Unfortunately, only a few helmet manufacturers address the testing of additional protective functions and accessories. Therefore, check whether the manufacturer of your choice has tested and approved the accessories that do not have an additional protective function. In the worst case, untested products can impair the protective function of the helmet.

Adaptability

In life, as in a relationship, we have various roles to fulfil. The tasks we undertake also differ in nature. It is always good to have someone at your side who is adaptable. In terms of adaptability, our ATR-1 is unbeatable. Thanks to the Speed Connect System on the rails, the ATR-1 offers quick integration of additional protective functions, e.g. eye protection visor, face protection visor, wire mesh visor, electrician's visor / arc protection class 2, hearing protection headset (active and passive) and safety goggles (tight-fitting safety goggles). The ATR-1 also allows the use of extensive accessories through an open system of the CRM-1 rail and the universal adapter at the front of the helmet. This way, you can attach headlamps, a GoPro, etc. Did we mention that you can also use a neck guard or a wildland shroud? Not yet? Well, now you know.

A perfect match

Being in a relationship feel sometimes like weight lifting. Fortunately, our helmet weighs no more than 750 grams! Just like the two halves of an apple fitting precisely or the cogs in a wheel, our helmet fits perfectly on your head. The ATR-1 achieves this through three shell sizes, ensuring a comfortable and secure fit.

Contact us and ... let's talk helmets!











ATR-1

MODULARITY, INCREASED PROTECTION AND LIGHTWEIGHT FOR ALL APPLICATIONS EXCEPT STRUCTURAL FIREFIGHTING

Our multi-purpose helmet for technical rescue, Urban Search and Rescue, wild-land firefighting, height, water and swift water rescue and rescue service sets new standards in the field of personal protective equipment. The helmet was developed specifically for the respective requirements and based on a differentiated hazard analysis. This resulted in a helmet that can be used in an array of situations. Thanks to the modular concept, the function of the ATR-1 helmet can be individually adapted to the risks by extending the protective functions to suit the operational scenario.

Special properties: Increased protection against penetration and shock absorption / three helmet shell sizes for perfect adjustment of the helmet to the head size / rails on both sides and integrated mount at the front for attaching various accessories / accessories 100% matched to the helmet / easy adjustment of the helmet to different operational scenarios / exceptional comfort thanks to the special padding, the 4-point harness for the chin and neck area as well as the wheel-dial / thermally resistant helmet shell / interior designed for long-lasting operations / low weight.



 signal black	 white	 hi viz yellow	 zinc yellow	 hi viz yellow + photo luminescent
 hi viz red	 red	 pure orange	 sky blue	 photo luminescent



SPECIFICATIONS

Material	Carbon fiber-reinforced duroplast (SMC)
Paint	Two-component paint (2K paint)
Type	High Cut
Edge protection	EPDM rubber edging
Colors	Hi viz yellow (RAL 1026) + photo luminescent, zinc yellow (RAL 1018), white (RAL 9016), signal black (RAL 9004), hi viz red (RAL 2005), hi viz yellow (RAL 1026), pure orange (RAL 2004), red (RAL 3020), sky blue (RAL 5015), photo luminescent
Weight	Size H1 approx. 680 g / 1.50 lbs (±3%), size H2 approx. 700 g / 1.54 lbs (±3%), Size H3 approx. 720 g / 1.59 lbs (±3%) including harness, inside equipment, rail system and reflective stickers
Shock absorption	CPP-1 E+ pad system
Harness	CRD-1 SV harness system
Size	Three sizes H1 = 48–56 cm, H2 = 54–62 cm, H3 = 58–66 cm
Interfaces	CMR-1 rail system, SCS visor system, USH – universal head hemp mount



STANDARDS/CERTIFICATIONS

- EN 16471:2014
- EN 16473:2014
- EN 12492:2012
- EN 1385:2012
- ISO 16073-5:2019
- ISO 18639-5:2018
- UIAA 106
- UKCA

ACCESSORIES

ESS safety goggles Influx Pivot™¹, ESS safety goggles Profile Pivot™¹, eye protection visor PC (CTV-1 AS/AS) 70 mm, eye protection visor PPSU (CTV-1 AS/AS) 70 mm, face protection visor PC (CTV-1 AS/AS) 120 mm, face protection visor PPSU (CTV-1 AS/AS) 120, wire mesh visor, neck guard¹, helmet/headlamp - PrincetonTec VIZZ-II-MPLS¹, headset adapter HOLMCO Scorpion¹, hearing protection headset active SAVOX Noise Com200¹, Busch PROtective CHP-1 hearing protection headset passive, protective cover safety goggles standard black (CGC-1)¹, helmet pouch with cord (TSP-1)¹, helmet bag standard black (TSB-1)¹, wildland shroud¹, accessories bag for protective helmet inside black (TAG-1)¹, helmet mounting ring PU¹, GoPro adapter¹, reflective sticker set for ATR-1 silver (3M)², reflective sticker set for ATR-1 yellow (Orafo)², Bollé Chronosoft Pompier goggles¹

¹ Optional, ² Spare part – included in the initial delivery of the helmet

ACCESSORIES



CTV-1 PPSU 2 SC 70 / CTV-1 PC 2 SC 70

EYE PROTECTION VISORS WITH THERMAL PROTECTION (PPSU VARIANT) AND WITHOUT (PC VARIANT)

SPECIFICATIONS

Sizes	H1, H2/H3 – suitable for helmet size
Weight	110 g / 0.24 lbs
Length	70 mm
Thickness	2 mm
Radius	113 mm (H1), 121.5 mm (H2/H3)
Material	Polyphenylsulfone (PPSU) or polycarbonate (PC)
Properties	Anti-scratch coating on both sides, sealing lip
Certified to	EN 14458:2018 and EN 166:2002

The CTV-1 face guard provides resistance and/or protection against mechanical, liquid chemical and basic physical hazards. In the PPSU version, the CTV-1 face guard additionally offers increased thermal performance. Easy mounting and dismounting is made possible by the SCS (Speed Connect System).



CTV-1 – WM WIRE MESH VISOR

SPECIFICATIONS

Sizes	H1, H2, H3
Weight	168 g / 0.37 lbs, 170 g / 0.374 lbs, 172 g / 0.379 lbs
Material	Stainless steel mesh

The CTV-1 wire mesh visor is a face protection visor made of robust steel mesh for protection while operating a chain saw. Coated on the inside against light reflections. Tested according to EN 14458 and EN 1731. Easy mounting and dismounting is made possible by the SCS (Speed Connect System).



CTV-1 PPSU 2 STD 120 / CTV-1 PC 2 2 STD 120

FACE PROTECTION VISOR

SPECIFICATIONS

Sizes	H1, H2/H3 – suitable for helmet size
Weight	150 g / 0.33 lbs
Length	120 mm
Thickness	2 mm
Radius	113 mm (H1), 121.5 mm (H2/H3)
Material	Polyphenylsulfone (PPSU) or polycarbonate (PC)
Properties	Anti-scratch coating on both sides, sealing lip
Certified to	EN 14458:2018 and EN 166:2002

The CTV-1 face guard provides resistance and/or protection against mechanical, liquid chemical and basic physical hazards. In the PPSU version, the CTV-1 face guard additionally offers increased thermal performance. Easy mounting and dismounting is made possible by the SCS (Speed Connect System).



CTV-1 ELECTRICIAN'S VISOR / ARC PROTECTION

SPECIFICATIONS

Weight	342 g / 0.75 lbs
Material	Polycarbonate, Nomex
Certified to	EN 166 and EN 170 as well as GS-ET-29 (2011)

Electrician's visor with chin protector for work with high electric voltages (up to 1,000 V). Easy mounting and dismounting is made possible by the SCS (Speed Connect System).





CTN-1 E – NECK PROTECTOR

SPECIFICATIONS

Colors	Black
Weight	150 g / 0.11 lbs
Outside material	Coated with meta-aramid
Properties	Flame retardant, protects against moisture and chemicals, fully sealed fit

The CTN-1 E neck guard is the standard neck guard for the Busch PROtective ATR-1, which is mounted via harness connectors and Velcro fastener.



CWS-1 – WILDLAND SHROUD

SPECIFICATIONS

Weight	150 g / 0.33 lbs
Material	Carbon X

The CWS-1 wildland shroud protects your face and neck from embers and heat. The CWS-1 comes with Velcro loops and harness connectors in one package for attaching your CWS-1 to your ATR-1 helmet.



CHP-1 HEARING PROTECTION HEADSET PASSIVE WITH RAIL ADAPTER

SPECIFICATIONS

Weight	240 g / 0.53 lbs
Colors	Black

The CHP-1 hearing protection headset provides a noise reduction of SNR (Single Number Rating) = 28 dB (medium), creating a harmless level. The CHP-1 is tested according to EN 352-3. The hearing protection can be easily mounted on the CRM-1 rail system.



SCORPION HEADSET ADAPTER

SPECIFICATIONS

Weight	90 g / 0.20 lbs
---------------------	-----------------

Using the CCH-1 adapter for the HOLMCO Scorpion system (adapter for all Scorpion types of the HL-09 series), the headsets can be easily attached to the ATR-1 helmet via the CRM-1 rail system. The system can be optimally adjusted in horizontal as well as vertical direction. It is also possible to attach the system on the left or the right side of the rail.

*Helmet is not included



VIZZ-II-MPLS HELMET/HEADLAMP – PRINCETONTEC

SPECIFICATIONS

Weight	92 g / 0.20 g
Water resistance	IPX7
Colors	Black
Luminance	200 lumens
Illuminants	1 x max bright LED, 4 x white ultra bright LEDs
Illumination time	102 hours
Batteries (included)	3 x AAA Alkaline
ETL rating	Zone 0, Class I Division 1; Intrinsically Safe; Classes I, II, III, Divisions 1 & 2, Groups A, B, C, D, E, F, G
Temperature code	T4
Interface	USH adapter plate, mount for Molle system and/or standard nylon headgear

Headlamp suitable for use in potentially explosive atmospheres, equipped with two different illumination profiles: A max bright LED produces a powerful 200 lumen spot beam for movement and distance vision, while four ultra bright LEDs provide dimmable close-range vision. Watertight.

SAVOX NOISE-COM 200 – ACTIVE HEARING PROTECTION WITH COMMUNICATION

SPECIFICATIONS

Colors	black
Batteries	2 AAA
Operational Time	Approximately 250 hours

SAVOX Noise-COM 200 helmet-mounted hearing protection head-set provides effective protection against everyday noises present during demanding tasks, while still enhancing operational capability to the maximum. SAVOX Noise-COM 200 is specially designed for police, fire & rescue, and military personnel, working in changing environments, from traffic accidents to critical rescue missions. Tested according to MIL-STD-810.



Bollé prescription insert kit (optional)

BOLLÉ SAFETY GOGGLES CHRONOSOFT

POMPIER WITH CMR-1 CONNECTION (SET)

SPECIFICATIONS

Weight	138 g / 0.30 lbs
Material	Kraton/TPR with increased thermal performance

The Chronosoft full view safety goggles are ideal for technical rescue and wildland firefighting. The double lens features the Bollé EQUALIZER system for effective fog protection. The safety goggles are attached to the CRM-1 rail system with the Busch PROtective helmet attachment.



CGC-1 PROTECTIVE COVER

FOR SAFETY GOGGLES

SPECIFICATIONS

Weight	45 g / 0.10 lbs
Dimensions	Approx. 27.5 x 10 x 5 cm
Colors	Black
Material	Polyester 600d

The CGC-1 protective cover is a lightly padded case with flap closure for safety goggles. On the flap closure there is an 8 x 1.5 cm Velcro strip for the name.



TAG-1 ACCESSORIES BAG

FOR STORAGE IN HELMET

SPECIFICATIONS

Weight	180 g / 0.40 lbs
Dimensions	Approx. 17 x 14 x 10 cm
Colors	Black
Material	Polyester 600d

The TAG-1 is padded zipper bag for your accessories (gloves, goggles, headlamps, batteries, etc.). The bag has Velcro strips for the name on both sides and at the top. Thanks to the neoprene spider on top of the bag, the chin strap can be fed through to fully secure the bag in the helmet.

BALLISTIC PROTECTION

Plates



PAA-1

TOP QUALITY BALLISTIC TORSO PROTECTION

The PAA-1 protection plate is a ballistic “stand alone” protection plate, made of aluminium, ceramic and aramid. The ballistic plate can be used both at the front and at the rear in the plate carrier or in plate slots in a tactical waistcoat. The PAA-1 is preferably to be carried in slots that meet the dimensions of 297 mm x 249 mm x 25 mm. The plate has a “single curve” shape.

Special properties: Ergonomic “single curve” shape / no additional soft ballistic plates needed / VPAM-6 certified / Made in Germany / standardised size that fits most plate carriers.

SPECIFICATIONS

Material	Aramid, aluminium, ceramic, carbon fiber
Coating	PU coating – non-slip material
Colors	Black
Weight*	Approx. 2.7 kg / 5.95 lbs
Dimensions	297 x 249 x 25 mm
Certification	VPAM-6 certificated

* Weight is subject to manufacturing tolerances of ±10 g / 0.02 lbs.



EXTENDED PROTECTION

Laser protection



MEP-1

FROM UV RADIATION TO LASER – EYE PROTECTION
FOR ALL SCENARIOS

The integrated eye protection system with four different lenses fits any helmet with pads, not just Busch PROtective helmets. All you have to do is attach the frame of the MEP-1 to a helmet and you can now switch between the respective visors in seconds. The MEP-1 offers first-level eye protection against high-energy light sources. In combination with the visor, you are not only protected against mechanical impact, but are also able to keep a clear and safe view in most dangerous situations.

Special properties: Ultra-fast attachment to "pad-based" helmets / visors can be attached and swapped without having to take the helmet off / no tools required / can be combined with all BAV, CAV, CTV and CRV visors / low overall weight of 65 g (0.14 lbs) / four visor colors (smoke, clear, yellow and laser).

SPECIFICATIONS

Material	Polycarbonate, visor
Visor options	Smoke, clear, yellow (high-contrast), laser
Type	Wide cut-out suitable for BAM-1 and many respirators
Colors	Black (frame)
Weight	65 g / 0.14 lbs
Standard scope of delivery	Helmet frame, visor with frame, attachment strips, visor bag
Size	Unisize



EXTENDED PROTECTION AREA

Visors



VISORS

Speed Connect System

The system for quick attachment of the visors is a unique selling point of Busch PROtective. Thanks to the Speed Connect System (SCS), you can attach a visor to the helmet without tools and with just one click, and remove it just as quickly. IMPORTANT! The visor is attached without having to take the helmet off. Another advantage of the SCS is the possibility to use different visors according to

the threat assessment. For example: you are using our AMP-1 TP and have information related to specific incident. As a user you can then choose the appropriate visor system (Cut, protection level) which matches the threat intelligence and needs of the operation. This gives the user the choice to scale up or down according to the threat. Simple, effective and most of all with user in mind.

An exception are the CRV visors (for helmets of the AMR and ARC series), which are pre-mounted on helmets and included in the scope of delivery.



Individual configuration

Busch PROtective visors are tested and certified independently. Furthermore, these tests are conducted in exactly the same way as they would be worn by the user. This enables a realistic outcome and ensure that the visor system remains in place, should there be further ballistic or non ballistic impacts. The helmet and visor are tested as a system with no compromise on multiple hits. Our visors are broken down into two main categories:

1. Ballistic visors with different protection classes

a. BAV series (suitable for helmets of the AMP series)

2. Non-ballistic visors with fragmentation and/or impact protection

a. CAV series (suitable for helmets of the AMP, AMH and ATR series)

b. CTV series (suitable for helmets of the ATR series)

c. CRV series (suitable for helmets of the AMR and ARC series)

As a Busch PROtective customer, you have the advantage of being able to individually configure the visors for your team. This allows you to choose the right protection for the respective level of risk without being bound to standards.



You have the following options:

1. Protection class: TP visors are certified according to VPAM 3, CN visors according to NIJ IIIA, FS visors according to STANAG and E visors according to VPAM 2. We also offer two versions of non-ballistic visors: The PC visor passes a 100 joules drop test and offers blunt force trauma protection according to EN 397 and the E visor according to EN 166.

2. Visor thickness: Many of our ballistic and non-ballistic visors are manufactured in different thicknesses.

3. Cuts: The shapes of the visors can also be selected to match the operational scenarios and the weapons used.

4. Coating: You have the option of visors with an anti-scratch and/or an anti-fog coating.

5. Protection against chemicals: Some of our visors can be fitted with a rubber lip to protect the face against chemicals and liquids.

Category	Protection class	Designation	Cut	Height (mm)	Thickness (mm)	Weight (g)
BAV	TP (VPAM)	BAV-1 TP 20 STD 165 AF	STD	165	20	1358
		BAV-1 TP 21 SC 90 AF	SC	90	21	873
		BAV-1 TP 21 WC 135 AF	WC	135/150	21	1253
		BAV-1 TP 21 PP 135/100 AF	PP	135/100	21	900
	CN (NIJ)	BAV-1 CN 22 STD 165 AF	STD	165	22	1512
		BAV-1 CN 22 SC 90 AF	SC	90/150	22	882
		BAV-1 CN 22 WC 140 AF	WC	140	22	1323
		BAV-1 CN 22 MDB 120 AF	MND	120	22	911
	FS (STANAG)	BAV-1 FS 7 STD 165 AF	STD	90/165	7	498
		BAV-1 FS 8.5 SC 110 AF	SC	110	8,5	468
		BAV-1 FS 7 WC 140 AF	WC	110/140	7/8.5	510(8.5) / 482 (7)
		BAV-1 FS 7 MDB 120 AF	MND	120	7	348
	E	BAV-1 E 17.5 MDB 120 AF	MDB	120	17,5	813
		BAV-1 E 15.2 STD 120 AF	STD	120	15,2	692
		BAV-1 E 17.5 X 133	X	133	17,5	858
		BAV-1 E 16 STD 120 AF	STD	120	16	1143
CAV	E	CAV-1 E 3 STD 165 AS	STD	165	3	302
	PC	CAV-1 PC 6 STD 165 AF	STD	165	5/6	480
		CAV-1 PC 6 SC 90 AF	SC	90/120	6	383
CTV	PC	CTV-1 PC 2 SC 70 AS/AS	SC	70	2	108 / 110
		CTV-1 PC 2 STD 120 AS/AS	STD	120	2	160 / 168
	PPSU**	CTV-1 PPSU 2 SC 70 AS/AS	SC	70	2	112 / 114
		CTV-1 PPSU 2 STD 120 AS/AS	STD	120	2	144 / 146
	Wire Mesh	CTV-1 WM H1/H2/H3				168 / 167 / 168
	Electrical visor	CTV-1 EV H2/H3				342
CRV	PC	CRV-1 PC 5 STD 175 AF AS	STD	175	5/6	296
		CRV-1 PC 3 STD 175 AF AS	STD	175	2/3	178
	E	CRV-1 E 3 STD 175 AS/AF	STD	175	3	302
		CRV-1 E 5 STD 175 PL AS/AS	STD	175	5	312

* Inside and outside option
 ** Not yet available (February 2023)

Thanks to the individual configuration, the visor portfolio is very large. For this reason, the table shows a selection of the most important visors. Please contact our sales team directly for more information.

Anti-fog	Anti-scratch	Rubber seal	Certifications	Details
Yes	Option		VPAM 3/TR-3.1/Tokarev/STANAG 2920 17 gr, V50 720 m/s	
Yes	Option		VPAM 3/TR-3.1/Tokarev/STANAG 2920 17 gr, V50 720 m/s	
Yes			VPAM 3/TR-3.1/Tokarev/STANAG 2920 17 gr, V50 720 m/s	
Yes			VPAM 3/TR-3.1/Tokarev/STANAG 2920 17 gr, V50 720 m/s	
Yes			NIJ IIIA 9 mm & .44 Magnum/STANAG 2920 17 gr, V50 300 m/s	
Yes	Option		NIJ IIIA 9 mm & .44 Magnum/STANAG 2920 17 gr, V50 300 m/s	
Yes			NIJ IIIA 9 mm & .44 Magnum/STANAG 2920 17 gr, V50 300 m/s	
Yes			NIJ IIIA 9 mm & .44 Magnum/STANAG 2920 17 gr, V50 300 m/s	
Yes	Option	Option	STANAG 2929 17 gr, V50 300 m/s	
Yes			STANAG 2929 17 gr, V50 300 m/s	
Yes			STANAG 2929 17 gr, V50 300 m/s	
Yes			STANAG 2929 17 gr, V50 300 m/s	
Yes			NIJ 9 mm,124 gr (9x19 DM41) / V50 415 m/s	
Yes			NIJ 9 mm,124 gr (9x19 DM41) / V50 415 m/s	
			NIJ 9 mm,124 gr (9x19 DM41) / V50 415 m/s	
Yes			VPAM 2	
Option	Yes	Option	EN 166:2001, EN 170:2002	
Yes	Option	Option	Drop test to 100 joules, EN 397 blunt force trauma protection	
Yes	Option		Drop test to 100 joules, EN 397 blunt force trauma protection	
	Yes	Yes	EN 14458:2018 / EN 166:2002	
	Yes	Yes	EN 14458:2018 / EN 166:2002	
	Yes	Yes	EN 14458:2018 / EN 166:2002	
	Yes	Yes	EN 14458:2018 / EN 166:2002	
			EN 14458:2018 / EN 1731:2006	
		Yes	EN 14458:2018 / EN 166:2002, additional marking according to GS-ET 29	
Yes	Yes		EN170:2002	
Yes	Yes*			PinLock/Dual Lock
Yes	Yes	Yes	EN 170:2002	
	Inside/outside			PinLock/Dual Lock

THE FOLLOWING CUTS ARE AVAILABLE



CONTACT

Let's talk
helmets.

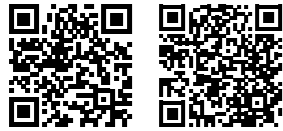
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... when on the move