

# 3M™ Versaflo™ M-Series Faceshields and Helmets

## Technical datasheet



### Description

The 3M™ Versaflo™ M-Series Faceshields and Helmets combine respiratory protection with eye and face protection, and with some models, head and hearing protection. The Faceshields and Helmets are designed to be used with an approved 3M air delivery unit to form a respiratory protective device.

M-200, M-300 and M-400 Series Faceshields and Helmets offer the highest respiratory performance requirements when used with specific 3M air delivery units.

Two visor options:

- ▶ M-927: Visor offers eye and face protection to EN 166 (optical class 1, liquid splash 3 and medium energy impact at extremes of temperature BT)
- ▶ M-925: Visor meets EN 166 (optical class 1, liquid splash 3, medium energy impact at extremes of temperature BT, molten metal splash 9)

M-200 Faceshields offer bump cap protection to EN 812 (including electrical insulation).

M-300 and M-400 Series Helmets offer head protection to EN 397 (including lateral deformation and electrical insulation).

M-Series Faceshields and Helmets have a choices of fabrics to suit a wide range of industries and applications.

M-206/M-306 fitted with comfort faceseal.  
Used for example when spraying, chemical processing or in construction.

M-406 fitted with highly durable shroud for construction and heavy industry.

M-207/M-307/M-407 fitted with flame resistant faceseal/shroud for applications with hot particles.

Additional High Heat Accessories available for M-300 and M-400 Series Helmets comprising 3M™ Radiant Heat Covers M-973/M-975, 3M™ Gold Over Visor M-967, 3M™ Over Visor Frame M-961 and 3M™ Breathing Tube Cover BT-927. See High Heat Accessories Technical Datasheet for more information.

3M™ PELTOR™ Microphones MT7V/1 and MT53V/1 also available to integrate with range of 3M™ PELTOR™ hearing protection. See microphone technical datasheet for more information.

All M-Series Faceshields and Helmets:

- ▶ Have a fully adjustable suspension
- ▶ Connect via the approved breathing tubes and adaptor if required (see table)

### Approved Breathing Tube and Adaptors

|   | M-206/M-207<br>M-306/M-307                   | M-406/M-407        |
|---|--|--------------------|
| 3M™ Versaflo™<br>Powered Air Turbo<br>Unit TR-302E+ | BT-20S/L, BT-30, BT-40                       |                    |
| 3M™ Versaflo™<br>Powered Air Turbo<br>Unit TR-802E  | BT-20S/L, BT-30, BT-40                       |                    |
| 3M™ Versaflo™<br>Powered Air Turbo<br>Unit TR-602E  | BT-20S/L,<br>BT-30, BT-40                    | BT-20S/L,<br>BT-40 |
| 3M™ Versaflo™<br>Supplied Air<br>Regulator V-500E   | BT-20S/L, BT-30, BT-40                       |                    |
| 3M™ Versaflo™<br>Cooling Units V-100E               | BT-20S/L, BT-30, BT-40                       |                    |
| 3M™ Versaflo™<br>Heating Units V-200E               | BT-20S/L, BT-30, BT-40                       |                    |
| 3M™ Powered Air<br>Turbo Unit PF-602E               | SS-BT-23<br>SS-BT-44<br>SS-BT-44L } + ADP-03 | Not approved       |
| 3M™ Powered Air<br>Turbo Unit PF-602E+              | BT-20S/L,<br>BT-30, BT-40                    | Not approved       |



## Standards and approvals

The M-Series headtops meet the performance requirements of the following European standards:

Eye and face protection to EN 166:

M-927 – Optical class 1, medium energy impact at extremes of temperature BT and liquid splash 3.

M-925 – Optical class 1, medium energy impact at extremes of temperature BT, liquid splash 3 and molten metal splash 9.

Bump cap protection (M-200 only) to EN 812 inc. 440V a.c.(electrical insulation).

Head protection (M-300 and M-400 Series only) to EN 397 LD, 440 v a.c. (Lateral deformation and electrical insulation).

Hearing protection EN 352-3:2002 (M-200 and M-300 only)

H31P3 – SNR = 28dB;

Size designation M/L

3M™ Optime™ I SNR = 26dB;

Size designation M/L

3M™ Optime™ II SNR = 30dB;

Size designation L (M-200), ML (M-300)

3M™ Optime™ III SNR = 34dB;

Size designation L (M-200), ML (M-300)

X1P3\*, X1P3-OR\* SNR = 26dB;

Size designation L (M-200), ML (M-300)

X2P3\* SNR = 30;

Size designation L (M-200), ML (M-300)

X3P3\* SNR = 32;

Size designation L (M-200), ML (M-300)

X4P3\*, X4P3-OR\* SNR = 32;

Size designation L (M-200), ML (M-300)

X5P3\* SNR = 36;

Size designation L

\*Requires use of Z3AF/2 adaptor

Contact 3M for full attenuation data including octave band and H, M and L values.

Note: 3M™ PELTOR™ Microphones also available to integrate with range of 3M™ PELTOR™ hearing protection. See Microphone Technical Datasheet for more information.

Respiratory Protection to EN 12941:1998 + A2:2008 and EN 14594:2005 (see Technical Specification section for more information).

The Certificate and Declaration of Conformity are available at the following website [www.3M.com/Respiratory/certs](http://www.3M.com/Respiratory/certs) and [www.3M.com/Welding/certs](http://www.3M.com/Welding/certs)



## Applications

The M-Series headtops can be used with an air-filtering unit to form a powered air respirator system or with a regulator to form a supplied air respirator system.

According to the system chosen, protection is provided against:

- ▶ Particles e.g. fine dusts, mists and metal fume
- ▶ Gases and vapours
- ▶ Particles and gases combined

Typical industries include:

- ▶ Agriculture
- ▶ Chemical industry
- ▶ Construction and building renovation
- ▶ Demolition
- ▶ Food and beverage
- ▶ Medical and healthcare
- ▶ Metalworking
- ▶ Pharmaceutical manufacturing
- ▶ Pulp and paper processing
- ▶ Smelting and foundries
- ▶ Surface preparation, paint spraying and coating
- ▶ Woodworking

## Materials

Common parts are listed in Figure 1.

| Component                           | Material  |
|-------------------------------------|---|
| Visor (M-925)                       | Polycarbonate   |
| Visor (M-927)                       | Coated polycarbonate                                    |
| Visor frame                         | Polycarbonate   |
| Visor seal                          | EPDM/polypropylene                                      |
| Deflector                           | Acetal  |
| Ratchet                             | Nylon   |
| Sweat pad                           | Cotton  |
| Headband                            | Polyolefin  |
| Headband strap                      | Nylon   |
| Breathing tube BT-20S/L             | Polyurethane with steel helix                           |
| Breathing tube BT-30                | Polyurethane with acrylonitrile butadiene styrene helix |
| Breathing tube BT-40                | Chloroprene   |
| Breathing tube SS-BT-23             | Polyurethane  |
| Breathing tube SS-BT-44 & SS-BT-44L | EPDM  |
| Adapter ADP-03                      | ABS   |
| Breathing tube cover BT-922         | Polyethylene  |
| Breathing tube cover BT-926         | Oxidised polyacrylonitrile                              |

Figure 1

| Materials      | M-206                             | M-207                     | M-306   | M-307                     | M-406                             | M-407      |
|----------------|-----------------------------------|---------------------------|---|---------------------------|-----------------------------------|------------|
| Faceseal       | Polyurethane coated knitted nylon | Flame resistant polyester | Polyurethane coated knitted nylon               | Flame resistant polyester | N/A                               |            |
| Shroud         | N/A                               |                           |   |                           | Nylon                             | Polyaramid |
| Inner shroud   | N/A                               |                           |   |                           | Polyurethane coated knitted nylon |            |
| Bump cap shell | Polyethylene                      |                           | N/A   |                           |                                   |            |
| Helmet shell   | N/A                               |                           | Polycarbonate /Polybutylene terephthalate blend |                           |                                   |            |

## Limitations

- ▶ Asbestos removal
- ▶ In atmospheres containing less than 19.5% oxygen
- ▶ Confined spaces (lack of ventilation)
- ▶ When the risk is considered to be Immediately Dangerous for Life or Health (IDLH)

## Technical specifications

### M-400 Series

Nominal Protection Factor = 500

- ▶ EN 12941 TH3 when connected to 3M™ Versaflo™ TR-802E, TR-602E and TR-302E+ Powered Air Turbo

Nominal Protection Factor = 200

- ▶ EN 14594 3B when connected to 3M™ Versaflo™ V-100E, V-200E and V-500E Regulators

### M-200 and M-300 Series

Nominal Protection Factor = 500

- ▶ EN 12941 TH3 when connected to 3M™ Versaflo™ TR-802E, TR-602E and TR-302E+ Powered Air Turbo

Nominal Protection Factor = 200

- ▶ EN 14594 3B when connected to 3M™ Versaflo™ V-100E, V-200E and V-500E Regulators

Nominal Protection Factor = 50

- ▶ EN 12941 TH2 when connected to 3M™ PF-602E and PF-602E+ Powered Air Turbo

Note: The Nominal Protection Factor is a number derived from the maximum percentage of total inward leakage permitted in relevant European Standards for a given class of respiratory protective device. This may not be the level of respiratory protection that can be realistically expected in the workplace by wearers. Many countries apply Assigned Protection Factors (APFs) for example UK and Germany. Employers may apply a value lower than the NPF/APF if deemed applicable. Please refer to EN 529:2005 and National workplace protection guidance for application of these numbers in the workplace. Please contact 3M for further information.

The M-Series headtops meet the higher strength (B) requirements of EN 14594. They are approved for use with a range of compressed air supply tubes that meet both the lower and higher strength (A and B) requirements.



# 3M™ Versaflo™ M-Series Faceshields and Helmets

## Storage conditions

-30°C to +50°C < 90 %RH

## Operating temperature

-10°C to +55°C

## Shelf life\*

5 years after date of manufacture

## Weight (without breathing tube)

M-206/M-207 650g

M-306/M-307 873g

M-406/M-407 1196g

\*The shelf life as defined above remains an indicative and maximum data, subject to many external and non controllable factors.

## Spare parts and accessories

| Part number   | Description                                 |
|---------------|---|
| M-116         | Airflow deflector (M-200)                   |
| M-150         | Head suspension (M-200)                     |
| M-154         | Forehead seal (M-200)                       |
| M-316         | Airflow deflector (M-300/M-400)             |
| M-350         | Head suspension (M-300/M-400)               |
| M-354         | Forehead seal (M-300/M-400)                 |
| M-441         | Jaw gasket                                  |
| M-444         | Replacement inner shroud                    |
| M-447         | Flame resistant shroud                      |
| M-448         | High durability shroud                      |
| M-919         | Visor frame buttons                         |
| M-920         | Visor frame                                 |
| M-921         | Visor gasket                                |
| M-925         | Uncoated Visor                              |
| M-927         | Coated Visor                                |
| M-928         | Peel-off visor cover                        |
| M-935         | Standard faceseal                           |
| M-936         | Comfort faceseal                            |
| M-937         | Flame resistant faceseal                    |
| M-953         | Ratchet                                     |
| M-956         | Ratchet comfort pad                         |
| M-957         | Comfort pad                                 |
| M-960         | Pivot kit                                   |
| M-972         | Flame resistant headtop cover               |
| M-976         | Head, neck and shoulder cover               |
| H31P3AF 300   | 3M™ PELTOR™ Hearing Protector Attachment    |
| H510AF 405-GU | 3M™ Optime™ I Hearing Protector Attachment  |
| H520AF 410 GQ | 3M™ Optime™ II Hearing Protector Attachment |

| Part number     | Description   |
|-----------------|---|
| H540P3AF 413-SV | 3M™ Optime™ III Hearing Protector Attachment                  |
| X1P3 / X1P3-OR  | 3M™ PELTOR™ Helmet Mounted Ear Muff (Green/Orange)            |
| X2P3            | 3M™ PELTOR™ Helmet Mounted Ear Muff (Yellow)                  |
| X3P3            | 3M™ PELTOR™ Helmet Mounted Ear Muff (Red)                     |
| X4P3 / X4P3-OR  | 3M™ PELTOR™ Helmet Mounted Ear Muff (Bright Green/Orange)     |
| X5P3            | 3M™ PELTOR™ Helmet Mounted Ear Muff (Black)                   |
| Z3AF/2          | Adaptor for 3M™ PELTOR™ X-Series Range                        |
| MT53V/1         | 3M™ PELTOR™ Electret Microphone                               |
| MT7V/1          | 3M™ PELTOR™ Dynamic Microphone                                |
| BT-20S/L**      | Lightweight breathing tube (Small/Medium or Medium/Long)      |
| BT-30**         | Self-adjusting breathing tube                                 |
| BT-40**         | Heavy duty breathing tube                                     |
| SS-BT-23**      | Fixed Length Breathing Tube                                   |
| SS-BT-44**      | Heavy Duty EPDM Breathing Tube                                |
| SS-BT-44L**     | Heavy Duty EPDM Breathing Tube (Long)                         |
| ADP-03**        | Adaptor   |
| M-973           | Radiant heat cover for M-300                                  |
| M-975           | Radiant heat cover for M-400                                  |
| M-961           | Over visor frame  |
| M-967           | Gold over visor   |
| BT-927          | Radiant heat breathing tube cover                             |
| BT-957          | Storage plugs (for BT-20S/L, BT-30 and BT-40 breathing tubes) |

\*\* See Approved Breathing Tube and Adaptors table

## Important notice

The use of the 3M product described within this document assumes that the user has previous experience of this type of product and that it will be used by a competent professional. Before any use of this product it is recommended to complete some trials to validate the performance of the product within its expected application. All information and specification details contained within this document are inherent to this specific 3M product and would not be applied to other products or environment. Any action or usage of this product made in violation of this document is at the risk of the user.

Compliance to the information and specification relative to the 3M product contained within this document does not exempt the user from compliance with additional guidelines (safety rules, procedures). Compliance to operational requirements especially in respect to the environment and usage of tools with this product must be observed. The 3M group (which cannot verify or control those elements) would not be held responsible for the consequences of any violation of these rules which remain external to its decision and control.

Warranty conditions for 3M products are determined with the sales contract documents and with the mandatory and applicable clause, excluding any other warranty or compensation. Respiratory protection is only effective if it is correctly selected, fitted and worn throughout the time when the wearer is exposed to respiratory contaminants. 3M offers advice on the selection of products, and training in the correct fitting and usage.

For more information on 3M products and services please contact 3M.

## Personal Safety Division

3M Centre  
Cain Road, Bracknell  
Berkshire RG12 8HT  
www.3M.co.uk/respiratory

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