

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

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