

# Technical Manual



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## 22066-35 : Portable Fire Extinguisher, 6 L Foam

TESTED SUCCESSFULLY ON LITHIUM BATTERY WITH CAPACITY

36 V — 750 Wh — 20,1 Ah



AVAILABLE  
CERTIFICATE

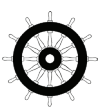


- **CYLINDER**  
Stainless steel, 3 pieces drawing, external powder painting Red Ral 3000.
- **EXTINGUISHING AGENT**  
Lith-M 10, water-based foam.
- **PROPELLANT**  
Dehumidified air or Nitrogen (N<sub>2</sub>).
- **VALVE**  
CPF M. 30x1.5, brass body, with anti-corrosion treatment.
- **USE**  
Class A Fires (solid materials)  
Class B Fires (flammable liquids)  
Class F Fires (cooking oils)  
Lithium-ion batteries

Note: image is for illustrative purpose only, the product purchased can has some difference

6 L foam fire extinguisher, temperature range from 0°C to +60°C, manufactured in accordance to **UNI EN 3-7 (D.M. 7.1.2005)**, approved Marine Equipment Directive **MED 2014/90/EU**, certified according to the directive for pressure equipment PED 2014/68/EU. Manufactured according at productions checks as agreed with **EN 3-10**. Quality Product certification guaranteed by Bureau Veritas Italia. Suitable for use on fire involving electrical voltages up to 1'000 V, at a minimum distance of 1 meter.

APPROVED/CERTIFIED FIRE EXTINGUISHER:



FIRE RATING :

27	233	40	750 Wh

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REPRODUCTION IS PROHIBITED

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- **INSTALLATION** The installation and the control and/or recovery operations of fire extinguisher must be performed by qualified technician and in accordance to current regulations on the matter.
- **USE**
- **MAINTENANCE** The technician will carry out annual inspection for check the internal pressure and after all other steps planned during the fire extinguisher useful life.

Any tampering or operation performed by unqualified technician, void the product warranty.

If possible, is recommended to place fire extinguisher in a dry place, protected from atmospheric agents.

**For installation, use and maintenance follow as indicated in file : PSP\_1-B\_ENG**

## TECHNICAL SPECIFICATIONS

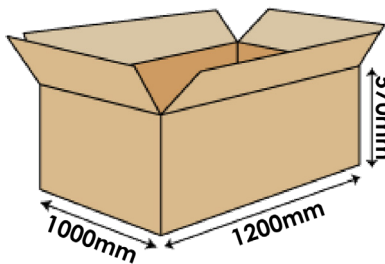
FIRE RATING	27 A 233 B 40 F
EXTINGUISHING AGENT	Foam Lith-M 10
PROPELLANT	Dehumidified air or Nitrogen (N <sub>2</sub> ), 15 Bar at 20°C
TEMPERATURE RANGE	0°C / +60°C
NOMINAL CHARGE	6 Liters
FULL WEIGHT	~ 8,75 Kg
DIMENSIONS	Height (base - valve) 530 +/- 5 mm Diameter (cylinder) 160 +/- 2 mm
DISCHARGE TIME	~ 43,5 seconds
CYLINDER PRESSURE TEST	PT 27 bar
CYLINDER VOLUME	7,8 Liters
SAFETY DEVICE	Set between 20 and 24 bar
CYLINDER MATERIAL	Stainless steel Aisi 304
TREATMENT	Outside: Sandblast and powder painting Ral 3000

## PACKAGING

(Note: quantities and measurements are indicative and can be subject at changes)

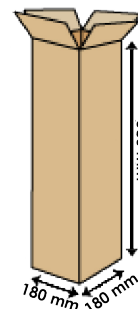
### STANDARD

Maximum nr. 100 pieces for pallet  
(44 pieces for box, max 2 boxes for pallet)  
(12 pieces. single packaging)  
Pallet dimensions 100x120x160(h) cm



### ON REQUEST: SINGLE PACKAGING

- maximum 64 pieces on pallet 100x120  
- maximum 48 pieces on pallet 80x120



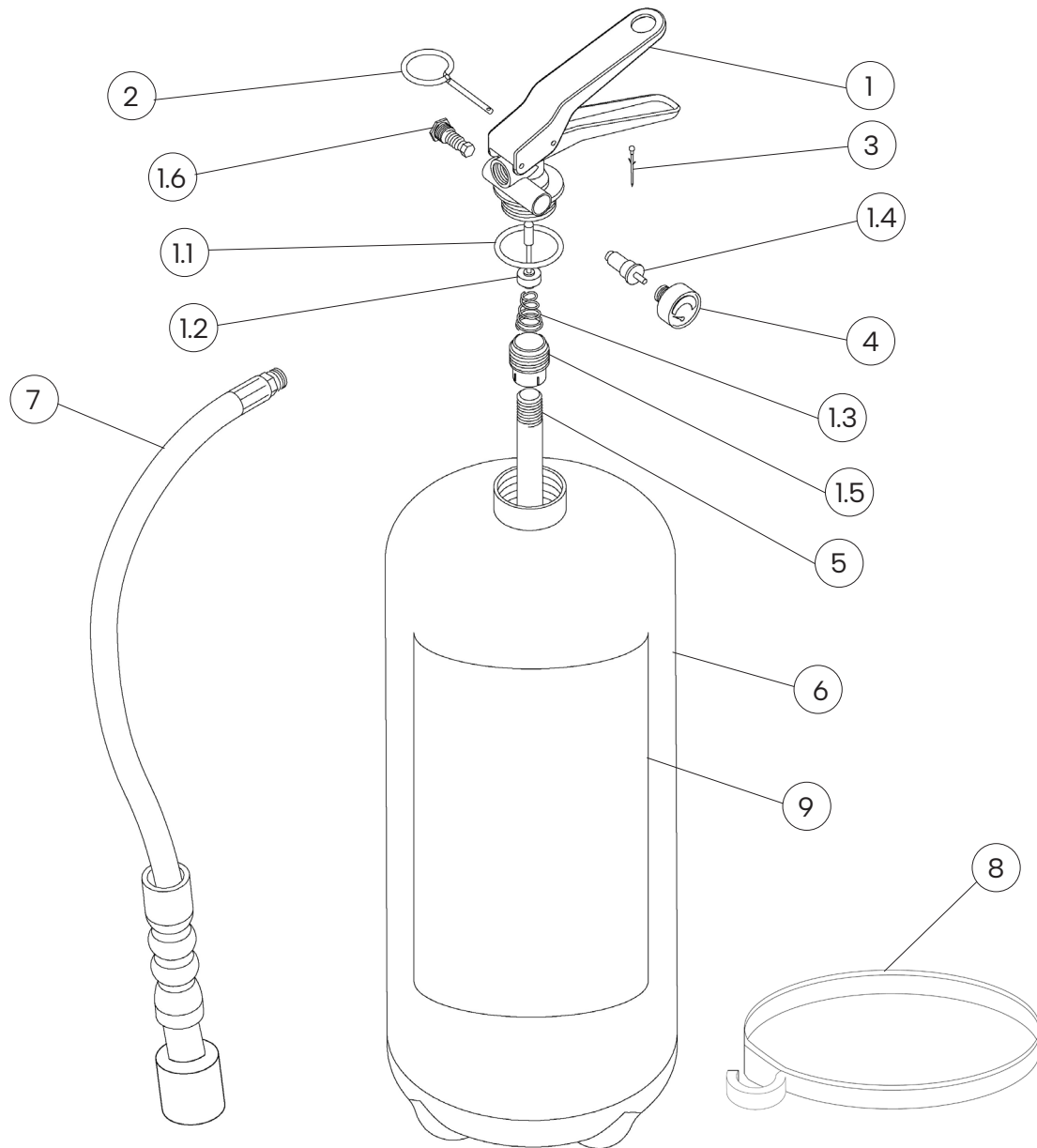
## TRANSPORT DISPOSAL

Land transport : Exemption for the purposes of ADR disposal 594  
Ship Transport : IMDG Code - UN 1044 class 2.2 Fire Extinguishers

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## COMPONENTS AND SPARE PARTS LIST



NUM.	DESCRIPTION	CODE
1	Valve M. 30x1.5	0212CS
1.1	O-ring valve	0201C
1.2	Valve stem	0242C
1.3	Internal spring of the valve	0251C
1.4	Test valve for pressure gauge	1163C
1.5	Dip tube holder	0253C
1.6	Safety device	0261C
2	Safety pin	0282-1
3	Safety pin seal	0285
4	Pressure gauge	1576

NUM.	DESCRIPTION	CODE
5	PVC dip tube	0154
6	Cylinder	1849
7	Hose with dispensing nozzle	0293-2
8	Stop hose ring	0301
9	Label	0083-35
OPTIONAL	Iron marine bracket red painting	0316
OPTIONAL	Stainless steel marine bracket	1464
	Foam refill (6 L. bottle, ready to use)	2054-1L

The spare part at number 1 includes already all others components indicated from 1.1 to 1.6

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## Prerequisite when using the fire extinguisher on lithium batteries

According to tests executed with this fire extinguisher, it's possible to stop the combustion of a lithium-ion battery with a water based fire extinguisher with foam additives. It has been verified that the use of the fire extinguisher allows to lower the temperature and control any re-ignitions of the cells present inside the battery (generated by the chain reaction of the same and due to their shape inside the battery pack).

The battery tested has a voltage of 36 V with a capacity of 20.1 Ah and an energy value of 750 Wh.

The fire extinguisher tested is therefore effective in containing the flames emanated from a battery with same or inferior characteristics compared to the one tested.

*\*NOTE: the test was executed on a new battery and so at full efficiency.*

### SAFETY WARNING



*The combustion of lithium-ion batteries releases very harmful gases and fumes.*

*Direct exposure to high concentrations of gases emanating from the combustion of lithium-ion batteries can cause serious damage to health. Lithium-ion batteries can have unpredictable phenomena during fire, such as explosive reactions caused by the pressure of the cells inside the battery pack. It's advisable to use appropriate safety devices.*

*The use of fire extinguisher is recommended for professional and expert staff.*

*The use of fire extinguisher by uninformed people can lead to lower results and cause damage to involved people.*

### DISCLAIMER

The result of the tests performed refers exclusively to the fire extinguisher model used during the tests themselves. The fast development of lithium-ion batteries and portable fire extinguishers means that the performance achieved during the test phase is not guaranteed when using lithium-ion batteries or shutdown techniques other than those tested. It is not possible to understand where and to what extent these fire extinguishers can be installed due to the outer casing of the lithium-ion battery pack.

The fire extinguishers tested are intended to help contain the principle of fire resulting from the triggering of a lithium-ion battery.

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