



RELEASE NOTES					
Rev.	Date	Revision History	ECN	Prepared	Approved
0.3	25/08/03	Section 4.2 modified to include full discharge / charge battery cycle. Front picture updated, plus various minor text mods.	389	LG	SD
0.2	21/12/02	NOTES ADDED FOR BUZZER OPERATION	298	LC	SD
0.1	21/08/02/	PRE-PRODUCTION DRAFT	262	MS	SD
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Infrared Test Torch		
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HELP US TO HELP YOU

Every effort has been made to ensure the accuracy in the contents of our documents, however, Micropack (Engineering) Ltd can assume no responsibility for any errors or omissions in our documents or their consequences.

Micropack (Engineering) Ltd would greatly appreciate being informed of any errors or omissions that may be found in our documents. To this end we include a form, given in Section 7, for you to photocopy, complete and return to us so that we take the appropriate action. Thank you.



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1 Safety Instructions

For the correct and effective use of this equipment, to maintain safety and avoid hazards it is essential that you read and understand these instructions and act accordingly **BEFORE** operating this equipment.



Pay particular attention to all Safety Warnings,



Cautions and Important Notices.

1.1 Warnings

- This equipment is Atex certified for, and intended for, use in potentially hazardous areas.
- For installations in North America the National Electrical Code (NEC) should be strictly observed.
- Where appropriate local or national regulations should be used.
- Do not drill holes in the enclosure, as this will invalidate the hazardous area approval.
- The enclosure lid and base should always be fully tightened and locked into position before energising the equipment.
- Do not open the enclosure in the presence of a flammable atmosphere.
- All permits and proper site procedures and practises must be followed.
- Repair of equipment should never be performed by non-trained personnel.

1.2 Cautions

- Voltage in the order of 10kV can be generated within the device, therefore all internal maintenance must be conducted by Micropack.
- Use only approved parts and accessories with this equipment.
- To maintain safety standards, regular maintenance should be performed by qualified personnel.

1.3 Important Notices

- Pay attention to the guidelines given throughout this document.
- If in any doubt ask your local sales representative or contact Micropack (Engineering) Ltd.
- Micropack (Engineering) Ltd take no responsibility for use of its equipment if this is not in accordance with the appropriate issue and/or amendment of the manual.
- Micropack (Engineering) Ltd reserve the right to change or revise the information contain herein without notice and without obligation to notify any person or organisation of such action.

2 Introduction

The **Micropack Infrared Flame Test Torch** is used to test the correct operation of Infrared Flame Detectors. The torch is based on a unique test source technology developed by Micropack. The unique source permits a highly efficient battery powered hydrocarbon flame simulation.

The torch has been designed specifically to enable long range testing of Infrared Flame Detectors. This greatly reduces the maintenance cost of Infrared Flame Detector testing by reducing the need for scaffold or ladder access.

The device has been designed for hand held use by a single operator. The device is a completely self contained, portable unit. A single charge is sufficient to test up to fifty Infrared Flame Detectors.

The device is capable of operating most of the current Flame Detectors whether single, dual or triple band. This allows a single test torch unit to be used when testing all Infrared detection used on an installation.

The torch has been designed specifically for use in the extreme marine environments experienced offshore.

2.1 FEATURES

- **Long Range** – The torch can reliably operate IR Flame Detectors at distance between 5m & 10m depending on the model and sensitivity setting.
- **Portable** – The test torch is a portable hand held unit designed for single operator operation.
- **Compatibility** – The test torch works with most IR Flame Detectors, in particular those operating around 4.4 microns.
- **Robust and Reliable** – The test torch has been designed for the extreme offshore environmental conditions.
- **Reduced Maintenance Costs** – Reduces the need for scaffold or ladder access to the detector.

2.2 Detector Enclosure

The test torch electronics are housed in an enclosure which is Atex certified for use in zone 1 hazardous areas. The enclosure comprises of the enclosure cover (and faceplate window), the enclosure base (and certification label) and fixing collar to connect the enclosure base and cover together.

The enclosure carries the certification label and serial number as shown on the device.

3 Operating Instructions

The test torch operation is extremely simple to use. It may be used up to 3m from the device being tested without the use of the alignment aid, beyond this distance the use of the alignment device is recommended. Once aligned, simply press the button maintaining alignment and wait for the detector to go into alarm. A buzzer will sound when the test torch is operating. The time taken for the device to go into alarm will vary dependant upon the detector type and the environment it is installed in. In all cases the response time should be less than 30 seconds. The switch is spring loaded and releasing the pressure from the switch will disconnect the power.

The buzzer will emit a continuous tone when the pushbutton is depressed and the test torch is healthy. If the battery requires to be recharged then an intermittent tone will sound.

The test torch has a built-in fail safe device that only allows the torch to operate for a maximum of 30 seconds in any 1 minute. The implications of this are:

- If the switch remains depressed, then the power will automatically disconnect once 30 seconds have elapsed.
- Once the switch has been depressed then released, even if only momentarily, then the torch cannot be energised until 30 seconds have elapsed.



The picture above, shows the Infrared Test Torch fitted with both the alignment device and the shoulder strap. The on/off button is shown to the underside of the test torch. The charging socket is opposite.

4 Maintenance and Testing

4.1 Routine

There is no set maintenance routine for the test torch due to the simplicity of the device. Due to the nature of the potential for high voltages within the device, all internal maintenance or repair must be conducted by Micropack.

Therefore, routine maintenance is simply limited to ensuring the faceplate is kept clean and that no damage to the integrity of the enclosure or flame paths is caused.

4.2 Battery Charging

A charging unit is supplied with the torch. Simply remove the brass blanking plug (opposite the pushbutton) to reveal the charging socket, and conduct the following:

- Connect plug to Test Torch.
- Connect Charger unit to mains socket (adaptors supplied for various world locations).
- Switch on mains supply.
- Wait until red LED (on charger unit) stops flashing.
- Press yellow button on charger unit.
- Wait until charger LED is green.

The yellow button causes the charger unit to completely discharge the battery pack prior to re-charging. Unless this is done the battery pack will retain memory charge and charging capability will be limited. Full re-charge will take between 8 and 12 hours.

A “fast” charge may be applied by simply not pressing the yellow button – however, as indicated above, battery memory effects will result in the battery pack not maintaining a full charge and limit the battery life. Charging in this way will take approximately 4 hours. Eventually, battery life will be so limited that a full discharge / recharge cycle will be required.

Note : Battery charging should never take place within a hazardous area.



5 Fault Finding

5.1 Diagnostics

Due to the high voltages used within the test torch, fault finding by personnel other than Micropack employees is prohibited and non-compliance of this will invalidate the warranty. If the torch fails to operate there are two simple causes :

- (a) the torch batteries need recharged (indicated by intermittent buzzer tone), or
- (b) the unit is faulty and needs to be returned to Micropack.

5.2 Replacement and Repair

The test torch contains no user serviceable parts.



6 Technical Specification

6.1 Engineering Specification

6.2 Electrical Specification

Battery Pack		Charger
9 cells	1.2 V each	100-240V
Peak Current	4.5 A	100mA Max
Capacity	2.1 Ahr	50/60Hz
Fast charge	4 hours	
Full discharge / charge	8 – 12 hours	

6.3 Mechanical Specification

Parameter	Units	Value	Comment
Enclosure			
Overall Dimensions	mm	150H x 150W x 300L	
Shipping Weight	Kg	4.5	
Material		LM25 Alloy	
Coating	Colour	Red Epoxy Coated Finish	
Cable Entries	mm	1 x M25, 1 x M20	
Terminal Wire Size	mm	2.5	
Ingress Protection	IP	66	

6.4 Environmental Specification

Parameter	Units	Min	Max	Comment
Operating Ambient Temperature	°C	-20	+70	
Storage Ambient Temperature	°C	-20	+80	
Relative Humidity	% RH	5	95	Non Condensing

