Instruction manual

LASER OP 3.0

To scare birds with a laser beam

Im- en Export Frijters Rijsbergen B.V
Translated Instruction Manual
Version 2.1 / 2017

Summary

1 INTRODUCTION

Thank you very much for choosing this laser operated scarecrow from it's manufacturer Im- en Export Frijters Rijsbergen B.V. On the Internet, Im- en Export Frijters Rijsbergen B.V. uses the name **www.ketrop.com**

This Instruction Manual describes the LaserOp "3.0", hereafter called "LaserOp", and contains the necessary instructions to operate, clean and service the device. Only this way safe operation, proper functioning, and extended device life can be guaranteed.

This Instruction Manual has been compiled with great care. However, should you find any ambiguities, please contact your supplier before starting the operation of the LaserOp.

The images in this Instruction Manual are intended as instructive material only and cannot serve any other purpose.

Please read this Instruction Manual carefully before operating the device. Always keep this Instruction Manual near the LaserOp as a reference, in order to have the opportunity to consult the Operating and Safety Instructions it contains at any time.

Operating the LaserOp is ONLY allowed if this Instruction Manual is thoroughly known and understood!
The operator should respect all Usage Requirements and enforce these within his company.

1.1 WARRANTY

For this point, the General Terms & Conditions of Im- en Export Frijters Rijsbergen B.V. are applicable. Im- en Export Frijters Rijsbergen B.V. cannot be held liable for any injuries or damages that may occur, if the LaserOp is used in any other way than those described in the Intended Use, the Operating Instructions and the Usage Requirements, and/or if the LaserOp had been modified in any way.

This is a translated copy of the original Instruction Manual, written in the Dutch language.

2 LASEROP

2.1 INTENDED USE IN PROFESSIONAL ENVIRONMENTS

Your LaserOp has been specially designed as a professional tool, to be used by a trained, qualified, and specifically designated specialist (preferably certified/authorised internally at the operator's organisation).

The LaserOp is intended to be used outdoors only.

The LaserOp is appropriate to scare birds away, from a close range up to a distance of 2 km (~1 mile), depending on the environmental conditions. The LaserOp's efficiency is at its best on darker days (e.g. during winter) or at sunrise/sunset, when the birds are most active.

The LaserOp is powered through batteries.

The LaserOp has proven to be successful in many different situations, scaring away all kinds of nuisance causing birds. It is efficient on farm fields, horticulture plots, cereal storing facilities, cattle stables, country estates, landfills and industrial properties.

A frequent usage of the LaserOp will cause the birds to return less quickly after they were scared away.

The laser is to be operated with the smallest possible beam.

2.2 SYMBOLS WITHIN THIS INSTRUCTION MANUAL AND ON THE LASEROP

SYMBOL	MEANING	SYMBOL	MEANING
	Take care! Important instruction within the Instruction Manual		Reading the Instruction Manual is mandatory
	Class 3b laser beam		
	Label on the LaserOp: Laser beam window "Never look into the laser beam and never point the beam towards persons"		Label on the LaserOp: Laser beam "Never look into the laser beam and never point the beam towards persons" "Class 3B Laser Device"

2.3 LASEROP CASE AND CONTENTS

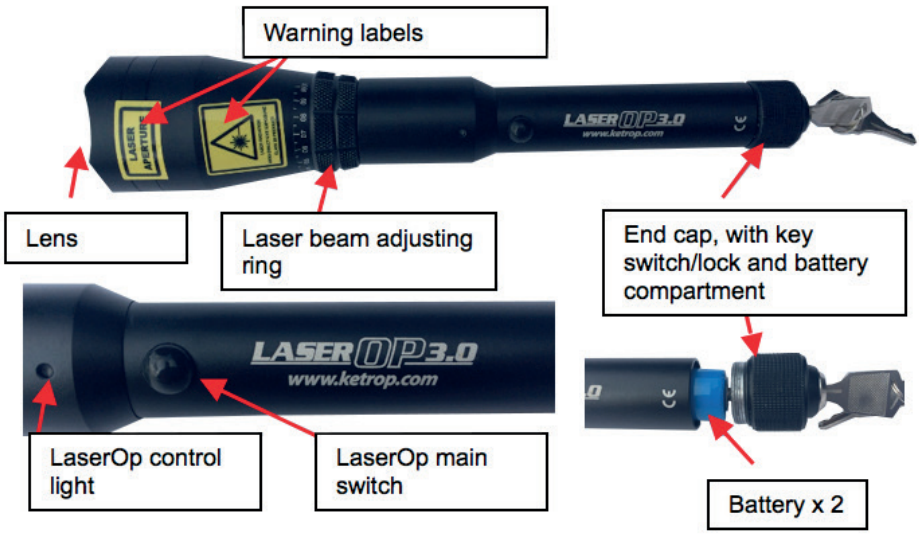
Instruction Manual

LaserOp

Battery charger

Battery x 2

2.4 LASEROP DEVICE DESCRIPTION



3 SAFETY

Before operating the LaserOp, make sure to carefully read the Safety Instructions.

3.1 SAFETY REQUIREMENTS FOR USE BY A TRAINED & QUALIFIED OPERATOR/USER

Before powering and/or operating the LaserOp, you should hold the LaserOp in your hand, as if it were a flashlight. The LaserOp should fit comfortably in your hand, as to avoid the risk of uncontrolled movements.

> NEVER look into the laser beam when you are at less than 1,016 metres (0.65 miles) from the device as this would cause serious eye damage. If you accidentally do look into the beam, seek immediate medical attention in order to check possible eye damage.

> NEVER point the beam towards another person.
The applicable legal requirements for the operator have to be applied and obeyed by the operator. The operator must obey the laws and rules that are applicable at the time of use.

> The commissioning, setup, operating, cleaning and servicing of the LaserOp can only be performed by specially trained personnel. A guaranteed “internal certification/authorisation” at the operator’s organisation is necessary in order to avoid that the LaserOp could be improperly used and be turned into a hazard for the operator and possibly exposed persons. By “internal certification/authorisation”, we mean certified log-keeping and justification of all usage.

> Ensure no other people are close to the working area. Ensure that only trained & certified/authorised personnel will be allowed to operate the LaserOp.

> NEVER hand out a LaserOp device to any “non certified/authorised” person. NEVER allow that children might touch the LaserOp device. ALWAYS store the device in a locked enclosure.

> Using the device near residences, roads and any other obstacles is not allowed. The operation of the device can only be allowed after a properly executed risk assessment / risk inventory evaluation, and after all necessary measures for risk reduction have been taken.

> If necessary, place warning signs up to a distance of 1,016 metres (0.65 miles) for any possibly exposed persons, even if such persons would be trespassing on “forbidden premises”.

> NEVER point the laser beam towards airplanes, boats, moving vehicles, or any other object for which the light might be hazardous.

3.2 INFORMATION AND SAFETY REQUIREMENTS FOR CLASS 3B LASER DEVICES

The laser classification and this Instruction Manual have been compiled in accordance with the harmonized European Standard EN IEC 60825-1:2014.

The output power of this laser device is 100 mW at a laser beam wave length of 532 nm with a fully opened lens.
The power definition is in conformity with the European Standard EN 60825-1:2014 and amounts to 21 mW over 7 mm at a distance of 100 mm from the lens.

The following table shows the power values for given distances, in accordance with EN 60825-1:2014 (NOHD).

Power mW	Distance in metres	Power mW	Distance in metres
12.2	0.5	7.8	100
11.9	5	4.7	250
11.7	10	2.4	500
9.7	50	1	1016

In the Netherlands, the operator should comply with the requirements listed in sections 6.12, 6.26, and 6.27 of the ARBO-resolution. In Belgium, the user should consider the public health laws.

3.3 RESIDUAL RISKS

The residual risk of the LaserOp device is that eye damage may occur after looking straight into the laser beam, with or without optical devices.
The operator should ensure that neither himself or any exposed persons could look straight into the laser beam, which could lead to eye damage or even blindness.

NEVER look into the laser beam when you are at less than 1,016 metres (0.65 miles) from the device as this would cause serious eye damage. If you accidentally do look into the beam, seek immediate medical attention in order to check possible eye damage.

4 USE AND OPERATION

Only trained and “internally certified/authorised” operators are allowed to use this device in a professional environment.

NEVER allow yourself to be distracted when you are operating the device.

Ensure the light source of the LaserOp is clean at all time.

ALWAYS remove the batteries BEFORE cleaning the lens. Ensure to NEVER look straight into the light source of an active laser, as this might lead to irreversible eye damage!

Do not operate the LaserOp if people are or could be within the reach of the laser beam.

4.1 INSERTING THE BATTERIES

Getting started: Ensure the batteries are fully loaded at 3.7 volts, as supplied.

1. Turn the end cap to the left and remove it.
2. Insert or replace the batteries with the positive (+) side pointing outwards in the battery compartment.
3. Screw the end cap back onto the LaserOp; the device is now ready for use.

4.2 POWERING UP THE LASEROP

1. Power up the LaserOp with the ON/OFF key switch located in the middle of the end cap.
2. Next, push the main switch, the control light turns on.
3. As soon as the main switch is released, the device turns off.
   > The LaserOp may need to warm up from 10 to 30 seconds before delivering the brightest beam.
4. The adjustment knob at the front of the lens allows you to narrow down the beam or to widen it instead.

4.3 CHANGING THE BATTERIES

1. Turn the key switch on the end cap to the Off position.
2. Follow the instructions as indicated in section 4.1 - Inserting the batteries.

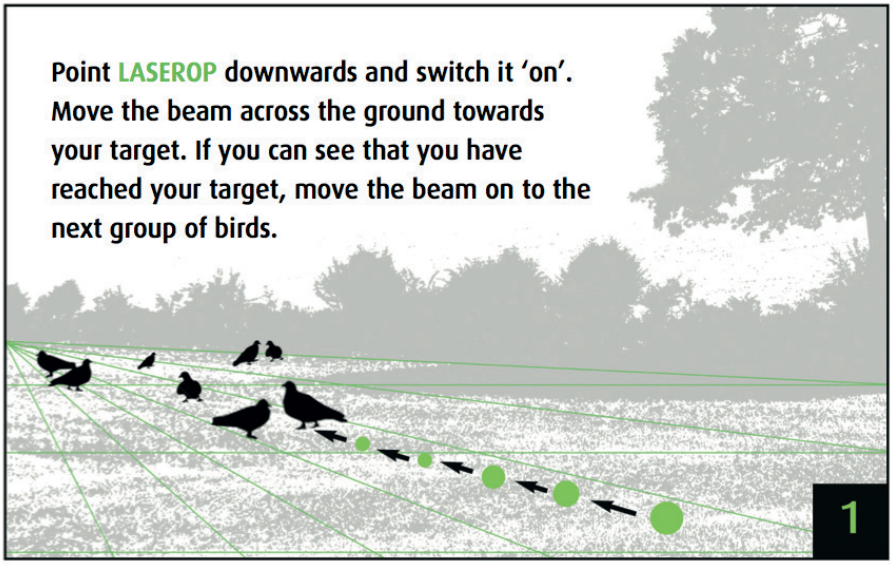
4.4 USING THE LASEROP IN THE FIELD

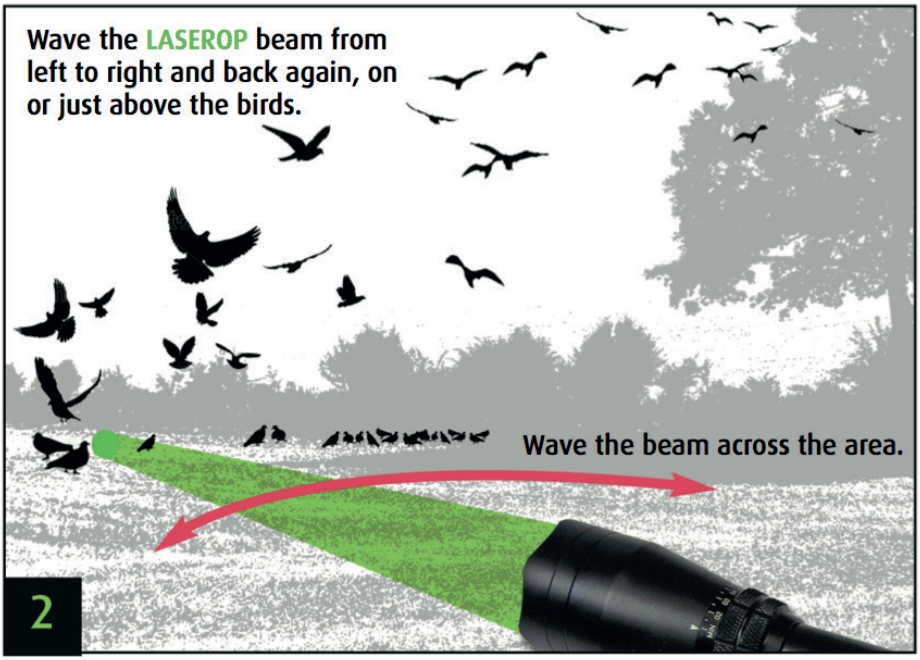
ALWAYS point the laser beam downward when you switch ON the LaserOp. Then slowly sweep the beam across the lot towards your objective – the birds – in order to scare them away. Aim directly towards the birds or just above them.

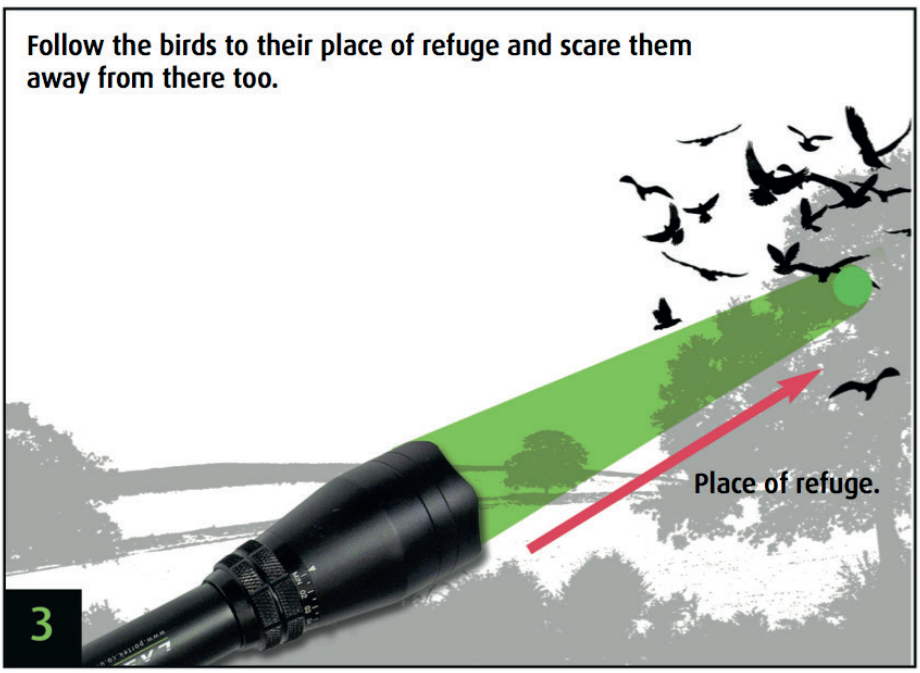
Normally, the birds will immediately flee to a nearby hiding place; follow them with the beam to scare them away from their hiding place. If this is regularly done, the birds will soon regard that hiding place as a “no go area” (unsafe).

If the LaserOp is regularly pointed at their roosting places at sunset and/or sunrise, they will soon look for another roosting place.

The LaserOp is intended to be used at times when daylight is less intense at the premises, e.g. during winter. The beam will not be seen in bright sunlight and will therefore not be efficient.




Wave the LASEROP beam from left to right and back again, on or just above the birds.
Wave the beam across the area.
2


Follow the birds to their place of refuge and scare them away from there too.
Place of refuge.
3

4.5 CLEANING BY THE USER

Getting started: The LaserOp has the IP 52 protection class. The number 5 indicates a high degree of protection against dust and the number 2 means tightness against water droplets. NEVER clean the LaserOp with water or rinse it below the water tap. NEVER leave the LaserOp outside. If the LaserOp gets wet, immediately sweep it dry.

> The user is allowed to clean the lens of the LaserOp.

Remove all power from the LaserOp by removing the batteries en follow the instructions in the instruction manual before cleaning the LaserOp. Contact your supplier for more information if required.

> The lens of the device may only be cleaned with a soft, dry cloth or with special camera lens cleaning tissues. Avoid scratches!

> The external surfaces of the device may be cleaned with a soft, dry cloth.

With the exception of the battery compartment, the LaserOp may never be opened by the user.

4.6 STORING OF THE DEVICE BY THE USER

The device should be stored in a dry and dust free area, at constant ambient temperature.

4.7 SERVICE AND REPAIRS

Service and repairs should only be performed by the manufacturer:

Im- en Export Frijters Rijsbergen B.V.
Smokstraat 2, 4891 ZK Rijsbergen (NL)
The Netherlands
Phone: 0031 (0)6-51 35 34 47
E-mail: info@ketrop.com

or by the supplier of your LaserOp.

5 TECHNICAL SPECIFICATIONS

Weight in grams	300
Dimensions Diameter x Length in mm	50 x 225
Batteries	1 x 18650 or 2 x CR123
Laser class	3B
Wavelength laser beam in nanometres	532
Service life of the batteries in “continuous operation”	1 hour
Voltage	3.7 - 9
Battery loading time in hours	8
Laser diode life in hours	5,000
Output power in milliwatts	100
Reach in darkness (smallest beam) in metres	>2000
Reach in darkness (biggest beam) in metres	~ 800
Minimum beam divergence in milliradians	0.05
Maximum beam divergence in degrees	1.8
Min. operating temperature in degrees Celsius	5
Max. operating temperature in degrees Celsius	45
Storage temperature in degrees Celsius	-20 up to +65
IP class	52

Im- en Export Frijters Rijsbergen B.V. reserves the right to change the above mentioned technical data, as a result of the ongoing innovative development of the LaserOp, without prior notification.
Furthermore, the technical data may be different from one country to another.

6 FAULTS OVERVIEW

FAULT	POSSIBLE CAUSE	REMEDY
LaserOp doesn't start.	• Batteries low or empty	1. Check the voltage of the new batteries, type 18650 — 3.7 V. 2. Replace the batteries by fully charges ones.
	• Key switch not unlocked	Put the switch into the "on" position.
LaserOp doesn't stop.		Put the key switch into the "off" position and contact the manufacturer or your supplier.

7 EC-DECLARATION OF CONFORMITY

EC-Declaration of Conformity

(Directive 2014/30/EU)

Im- en Export Frijters Rijsbergen B.V., Smokstraat 2, 4891 ZK Rijsbergen (NL), The Netherlands, hereby declares that the device, hereafter called LaserOp, meets the requirements of the Directives and Standards mentioned hereafter amongst others.

Type: LASEROP 03 Serial number: LaserOp Year Built: 2017

Applied EC directive:

- EMC-Directive 2014/30/EU

Applied Standards:

- EN IEC 60529:1992/A1:2000 (Degrees of protection provided by enclosures (IP Code))
- EN IEC 60825-1:2014 (Safety of laser products. Equipment classification and requirements)
- EN 61000-6-2: 2005 (Electro Magnetic Compatibility (EMC) - Chapter 6-2: Generic Standards – Immunity for Industrial Environments)
- EN 61000-6-4:2006+A1:2011 (Electro Magnetic Compatibility (EMC) – Chapter 6-4: Generic Standards – Emission Standard for Industrial Environments)

Rijsbergen, August 20, 2017

A. Frijters, CEO

8 CONTACT DETAILS OF MANUFACTURER

Im- en Export Frijters Rijsbergen B.V.
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The Netherlands

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E-mail: info@ketrop.com