

Technical Description of the Maglite Brand

Maglite RL 1019 Flashlight

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Table of Contents

Abstract- 3
Introduction- 4
List of Parts- 5
Conclusion- 10
References- 11

Abstract-

The purpose of this technical description is to describe the parts of a Maglite RL 1019 flashlight, as well as give a brief history of the flashlight. I will go over the name of each part, as well as its function.

Introduction

Flashlights are used in order to provide a controllable and portable source of light. The first flashlight was built in 1899 by inventor David Misell. (Misell, 1899) Early flashlights were very limited by their batteries, as they couldn't produce a continuous beam, only pulses. As advancements in batteries came, so did advancements in flashlights. (Flashlight History, 2020) Rather than relying on single-use batteries like other flashlights, the Maglite RL 1019 uses on a rechargeable battery. This provides for a more efficient source of power, as rechargeable batteries are cheaper over time and eco-friendlier. The Maglite RL 1019 comes in a variety of colors, with black being the standard. It weighs about 28 oz with batteries equipped. It is 12.8125 inches in length, 1.5 inches in diameter across the barrel and 2.25 inches in diameter across the lens. The flashlight's simple one-button design can be attributed to its various parts and how they function together. This technical description will focus on the various parts of the Maglite RL 1019 and their purpose.

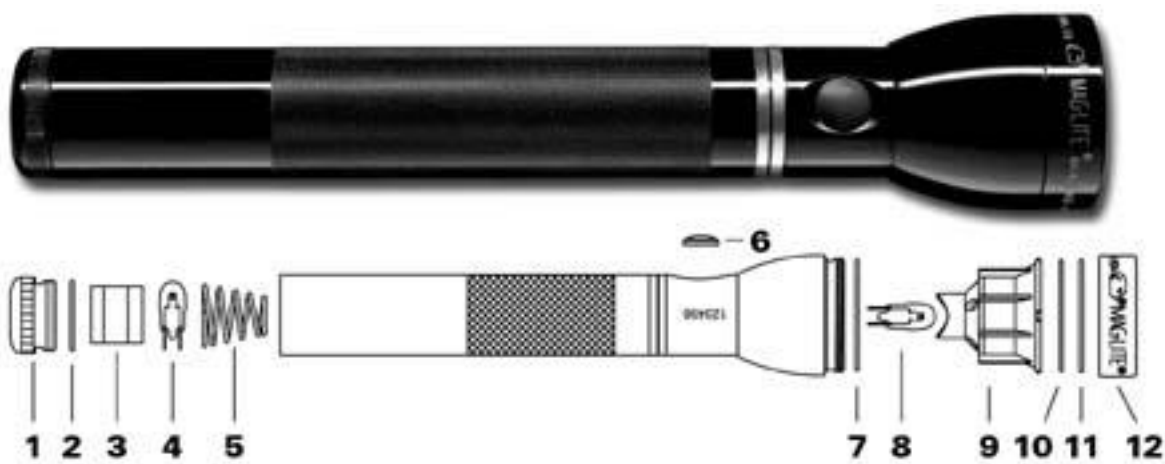


Figure 1: Maglite RL 1019 Flashlight reprinted from Flashlightsales.com

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|---------------------|-------------------|---------------|
| 1- Tail cap | 5- Battery Spring | 9- Reflector |
| 2- O-Ring, tail cap | 6- Switch seal | 10- Lens |
| 3- Lamp protector | 7- O-Ring, head | 11- Lens seal |
| 4- Spare halogen | 8- Halogen Lamp | 12- Face cap |

Maglite RL 1019 Parts & Function-

Tail Cap-

The tail cap is located at the bottom of the flashlight and is made of metal. The purpose of the tail cap is to keep the batteries from falling out and to protect the inside of the flashlight. The tail cap is a circular piece of metal, that is threaded in order to be screwed in. It also has vertical marks to help with grip.



Figure 2: Tail Cap retrieved from Opticsplanet.com

O-Ring(s)-

The Maglite RL 1019 has two O-Rings, one on the tail cap and one on the head. The purpose of the O-Ring is to create a seal to prevent water and debris from entering the flashlight. The O-Ring is squeezed in where there is a groove, such as the tail cap. The O-Ring takes up the available space and creates a seal. The O-Ring is a thin circular ring made of rubber.

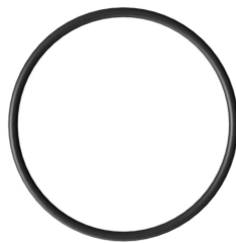


Figure 3: O-Ring retrieved from Amazon.com

Lamp Protector-

The lamp protector's purpose is to protect the halogen lamp to ensure that the lamp doesn't break in case of the flashlight sustaining damage. The lamp protector is cylindrical piece of plastic which can be fitted over the halogen lamp.



Figure 4: Lamp Protector retrieved from Campsaver.com

Halogen Lamp(s)-

The Maglite RL 1019 comes with two halogen lamps, one already inside the flashlight, and a spare one. The halogen lamp is the source of light. The halogen lamp is a clear light bulb, with two metallic prongs sticking out at the bottom.



Figure 5: Halogen Lamp recieved from Amazon.com

Battery Spring-

The battery spring helps keep the batteries in place, as well as brings the electrical currents from the batteries to the desired circuit. It allows electricity to travel throughout the flashlight, which allows for the flashlight to be turned on. The battery spring is a thin piece of metallic wire coiled into a spring shape.



Figure 6: Battery Spring received from Led-Resource.com

Switch Seal-

The switch seal is a cover that is put over the on/off button. The switch seal prevents water and debris from entering the on/off button. Since the on/off button is pressed so often, the switch seal also prevents the button from being worn down too quickly. The switch seal is a grey circular button made of rubber.



Figure 7: Switch seal received from Amazon.com

Reflector-

The reflector is made up of a reflective material. When the flashlight is turned on, the halogen lamp projects a light and the reflector reflects it. The reflection of the light is what intensifies the beam of light, as well as gives us a concentrated beam of light. The reflector has a short cylindrical neck, and the body flares out to form a cone.



Figure 8: Reflector received from Zbattery.com

Lens-

The lens is a piece of glass that is fitted over the reflector. The lens protects the reflector and the lamp, as well as prevents both from getting dirty or damaged. The lens is a thin circular piece of glass.

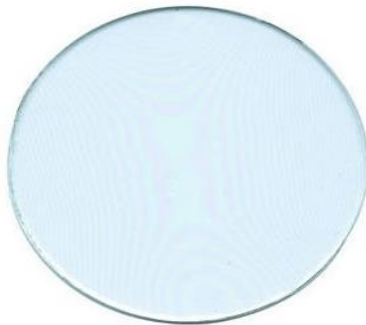


Figure 9: Lens received from Brightguy.com

Lens Seal-

The lens seal is put between the lens and the face cap. It is a buffer between the delicate glass of the lens and the hard aluminum of the face cap. The lens seal is a thin circular ring made of rubber.



Figure 10: Lens seal received from Cheaperthandirt.com

Face Cap-

The face cap is fitted over the lens seal and the lens to prevent it from moving. Similar to the tail cap, the lens cap is screwed on and also helps protect the flashlight. It is a thick black ring with the words “MAGLITE AA” written on it. It is also threaded in order to be screwed.



Figure 11: Face cap received from Opticsplanet.com

Conclusion:

Flashlights are extremely useful and invaluable tools. They can be used in the workforce, as well in our personal homes. The sturdy construction of the Maglite RL 1019 makes it suitable for both.

While many modern phones offer a flashlight option, the beams of light are often not strong enough or concentrated enough. Having a dedicated tool as a source of light can prove to be worth it in case of a power outage, and of course flashlights are irreplaceable in the workforce.

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