

# Battery-Operated Scope Warmers

## A Significant Source of Hospital Waste

The following estimates highlight the potential environmental impact of battery-operated scope warmers.

### Assumptions

- The number of laparoscopic procedures performed in the US every year is projected to reach approximately **8,000,000** by 2028.<sup>1</sup>
- Assume **4,000,000** procedures use single-use, battery-operated scope warmers.
- Average weight of batteries in commonly used single-use scope warmers is approximately **0.125 lbs** per warmer.<sup>2</sup>

### Estimated Scope Warmer Battery Disposal in the US Annually

**10,000,000+ batteries disposed**<sup>3</sup>  
 OR  
**500,000 lbs / 250 tons of hospital waste**<sup>4</sup>

### Environmental Impact of 250 Tons of Battery Disposal

250 tons of batteries disposed of every year is the equivalent in weight to approximately:

**6.6 empty Boeing 737-400 planes**

OR

**~1,900 hospital beds**

OR

**1,333,300 iPhones**<sup>5</sup>



### Further Battery Environmental Considerations

**Soil Contamination:** As batteries break down in landfills, chemicals can leach into the soil, disrupting plant growth and harming local wildlife.

**Air Pollution:** Incinerating batteries potentially releases toxic fumes into the air, contributing to pollution and respiratory issues.

**Manufacturing:** The manufacturing process for batteries, involving raw materials and energy, has significant environmental impact.

**Water Pollution:** Toxins from improperly disposed batteries may seep into the groundwater or run off into nearby water bodies, affecting aquatic life and potentially entering the drinking water supply.

**Decomposition:** Batteries can take up to 100 years to decompose in a landfill.

<sup>1</sup> Based on iData Research.

<sup>2</sup> Assumes 3 commonly used single-use scope warmers have equal market distribution:

#1 uses 3 AA batteries at 0.05 lbs per battery.

#2 uses 2 CR123A batteries at 0.0375 lbs per battery.

#3 uses 3 AA batteries at 0.05 lbs per battery.

Average battery weight per scope warmer:

$((3 \times 0.05) + (2 \times 0.0375) + (3 \times 0.05)) / 3 = 0.125$  lbs.

<sup>3</sup> Battery Quantity:  $(3+2+3) / 3 \times 4,000,000 = 10,000,000+$  assuming equal market distribution.

<sup>4</sup>  $4,000,000$  procedures  $\times$   $0.125$  lbs per scope warmer =  $500,000$  lbs.

<sup>5</sup> Based on weight of iPhone 16.

<sup>6</sup> PLASMAShield® Base has a single rechargeable battery pack which can be used for up to 10,000 procedures, after which the batteries can be recycled.

PLASMAShield®  
**NO Disposable Batteries**<sup>6</sup>  
**FEWER Scope Removals**  
**CLEARER Vision**

