LED Cinema Display

Environmental Report

Model MB382 (24-inch)

Date introduced

October 14, 2008

Environmental Status Report

LED Cinema Display is designed with the following features to reduce environmental impact:

- Mercury-free LED backlit display
- Arsenic-free display glass
- Brominated flame retardant –free
- PVC-free internal cables
- Highly recyclable aluminum and glass enclosure

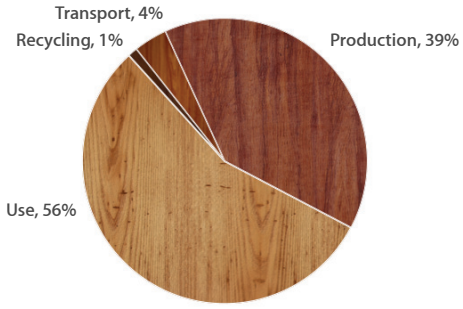
Apple and the Environment

Apple believes that improving the environmental performance of our business starts with our products. The careful environmental management of our products throughout their life cycles includes controlling the quantity and type of materials used in their manufacture, improving their energy efficiency, and designing them for better recyclability. The information below details the environmental performance of the LED Cinema Display as it relates to climate change, energy efficiency, restricted substances, and material efficiency.

Climate Change

Greenhouse gas emissions have an impact on the planet's balance of land, ocean, and air temperatures. Most of Apple's corporate greenhouse gas emissions come from the production, transport, use, and recycling of its products. Apple seeks to minimize greenhouse gas emissions by setting stringent design-related goals for material and energy efficiency. The chart below provides the estimated greenhouse gas emissions for the 24-inch LED Cinema Display over its life cycle.

Greenhouse Gas Emissions for LED Cinema Display



Total greenhouse gas emissions: 980 kg CO_2e

Energy Efficiency

Because the largest portion of product-related greenhouse gas emissions results from its use, energy efficiency is a key part of each product's design. Apple products use power-efficient components and software that can intelligently power them down during periods of inactivity. The result is that the LED Cinema Display is energy efficient right out of the box.

The following table details the power consumed in different use modes:

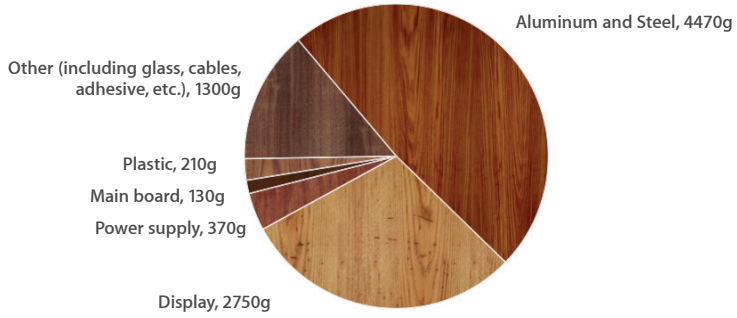
Power Consumption for LED Cinema Display

Mode	100V	115V	230V
Off	0.58W	0.59W	0.85W
Sleep	0.58W	0.59W	0.85W
On at 175 Cd/m^2	54.6W	56.2W	57.0W
On at full brightness	78.4W	79.6W	81.2W

Material Efficiency

Apple's ultracompact product and packaging designs lead the industry in material efficiency. Reducing the material footprint of a product helps maximize shipping efficiency. It also helps reduce energy consumed during production as well as material waste generated at the end of the product's life. The enclosure of the LED Cinema Display is made of aluminum, a material highly desired by recyclers. The chart below details the materials used in this model.

Material Use for LED Cinema Display



Packaging

The packaging for the LED Cinema Display is almost entirely recyclable and its retail box is made with a minimum of 25 percent post-consumer recycled content. In addition, its packaging is extremely material efficient, allowing more units to ship per pallet. The following table details the materials used in its packaging.

Packaging Breakdown for LED Cinema Display

Material	Retail box	Retail and shipping box
Paper (corrugate, fiberboard)	1190g	2230g
Expanded polystyrene	420g	420g
Polypropylene	30g	30g
Other plastics	25g	25g

Restricted Substances

Apple has long taken the lead in restricting harmful substances from its products and packaging. As part of this strategy, all Apple products comply with the strict European Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, also known as the RoHS Directive. Examples of materials restricted by RoHS include lead, mercury, cadmium, hexavalent chromium, and PBB and PBDE brominated flame retardants (BFRs). LED Cinema Display goes even further than the requirements of the RoHS Directive by incorporating the following more aggressive restrictions:

- Mercury-free LED backlit display
- Arsenic-free display glass
- Brominated flame retardant (BFR)-free
- All internal cables free of polyvinyl chloride (PVC)

Recycling

Through ultra-efficient design and the use of highly recyclable materials, Apple has minimized material waste at the product's end of life. In addition, Apple offers and participates in various product take-back and recycling programs in 95 percent of the regions where the Apple products are sold. All products are processed in the country or region in which they are collected. For more information on how to take advantage of these programs, visit www.apple.com/environment/recycling/.

Definitions

Greenhouse gas emissions: Estimated emissions are calculated in accordance with guidelines and requirements as specified by ISO 14040 and ISO 14044. Calculation includes emissions from the following life cycle phases contributing to Global Warming Potential (GWP 100 years) in CO_2 equivalency factors (CO_2e):

- **Production:** Includes the extraction, production, and transport of raw materials as well as the manufacture of the product and product packaging.
- **Transport:** Includes air and sea transportation of finished product and its associated packaging from the manufacturing site to continental distribution hubs. Transport of products from distribution hubs to the end customer is not included.
- **Use:** User power consumption assumes a four-year period. Consumption patterns are modeled according to European Commission and U.S. Environmental Protection Agency computer eco-design studies. Geographic differences in the power grid mix have been accounted for at a continental level.
- **Recycling:** Includes transportation from collection hubs to recycling centers, and the energy used in mechanical separation and shredding of parts.

Energy efficiency terms: The energy values in this report are based on the ENERGY STAR Program Requirements for Computer Monitors Version 4.1.

- **Off:** Lowest power mode of the system when it is shut down. Also referred to as Standby.
- **Sleep:** Low power state that is entered after the monitor receives instructions from a computer or via other functions. This mode is characterized by a blank screen.
- **On at 175 Cd/m²:** The product is connected to a power source and produces an image. The brightness of the monitor is set to 175 candelas per square meter, which is the luminance setting for ENERGY STAR for Computer Monitors 4.1 testing.
- **On at full brightness:** The display is connected to a power source and produces an image at its maximum brightness.