



27-inch LED Cinema Display

Environmental Report



Model MC007 (27-inch)

Date introduced

July 27, 2010

Environmental Status Report



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

- Arsenic-free display glass
- Mercury-free LED-backlit display
- Brominated flame retardant-free
- PVC-free¹

Meets ENERGY STAR® Version 5.0 requirements



27-inch LED Cinema Display achieved a Gold rating from EPEAT²



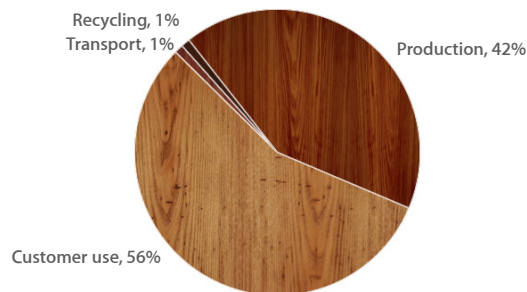
Apple and the Environment

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 27-inch 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 27-inch LED Cinema Display over its life cycle.

Greenhouse Gas Emissions for 27-inch LED Cinema Display



Total greenhouse gas emissions: 1230 kg CO₂e

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. The 27-inch LED Cinema Display incorporates automatic brightness control, which allows the display backlight to automatically adjust to brightness levels based on the level of ambient light. This significantly reduces power consumption when used in low ambient light conditions.

The LED Cinema Display outperforms the stringent requirements of ENERGY STAR Program Requirements for Displays Version 5.0. The following table details the power consumed in different use modes.

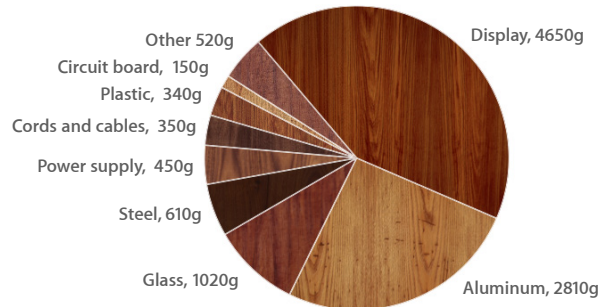
Power Consumption for 27-inch LED Cinema Display

Mode	100V	115V	230V
Off	0.70W	0.70W	0.70W
Sleep	0.70W	0.70W	0.70W
On	105W	104W	103W
Power supply efficiency	89%	89%	90%

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 and material waste generated at end of life. The chart below details the materials used in the LED Cinema Display.

Material Use for 27-inch LED Cinema Display



Packaging

Packaging for the 27-inch LED Cinema Display uses corrugated cardboard made from a minimum of 35 percent post-consumer recycled content. The following table details the materials used in its packaging.

Packaging Breakdown for 27-inch LED Cinema Display

Material	Retail box	Retail and shipping box
Paper (corrugate, paperboard)	2360g	3890g
Expanded polystyrene	660g	660g
Polypropylene (film, fabric)	65g	65g
Other plastics	16g	16g

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 the brominated flame retardants (BFRs) PBB and PBDE. LED Cinema Display goes even further than the RoHS Directive by incorporating the following more aggressive restrictions:

- Arsenic-free display glass
- BFR-free
- Internal and external DC cables free of polyvinyl chloride (PVC)
- PVC-free AC power cord for United States, Canada, Mexico, Colombia, El Salvador, Guatemala, Panama, Peru, Puerto Rico, U.S. Virgin Islands, and Venezuela
- Mercury-free LED-backlit display



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 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/recycling/.

Definitions

Greenhouse gas emissions: Estimated emissions are calculated in accordance with guidelines and requirements as specified by ISO14040 and ISO14044. Calculation includes emissions from the following life-cycle phases contributing to Global Warming Potential (GWP 100 years) in CO₂ equivalency factors (CO₂e):

- **Production:** Includes the extraction, production, and transportation of raw materials, as well as the manufacture, transport, and assembly of all parts and product packaging.
- **Transport:** Includes air and sea transportation of the finished product and its associated packaging from manufacturing site to continental distribution hubs. Transport of products from distribution hubs to 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 efficiency values in this report are based on the ENERGY STAR Program Requirements for Displays Version 5.0. For more information, visit www.energystar.gov.

- **Off:** Lowest power mode of the display 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 through other functions. This mode is characterized by a blank screen.
- **On at full brightness:** The display is connected to a power source and a host computer and produces an image at its maximum brightness.
- **Power supply efficiency:** Average of the power supply's measured efficiency when tested at 100 percent, 50 percent, and 20 percent of the power supply's rated output current.

Restricted substances: Apple defines a material as BFR-free and PVC-free if it contains less than 900 parts per million (ppm) of bromine and chlorine.

1. PVC-free AC power cord available in the United States, Canada, Mexico, Colombia, El Salvador, Guatemala, Panama, Peru, Puerto Rico, U.S. Virgin Islands, and Venezuela.

2. 27-inch LED Cinema Display achieved a Gold rating from EPEAT in the United States, Canada, France, Germany, and the UK.