

1. Product Overview

1.1 Product Identifier

Product Name: Ballesta® Leaf Ceiling

Product Code: Ballesta-LC (Leaf Ceiling)

Description: The Ballesta Leaf Ceiling is a nature-inspired decorative ceiling system featuring organic leaf-shaped metal panels. Each leaf is precision laser-cut and press-formed from AA3003/AA1100 aluminum alloy into elegant botanical shapes. Leaves can be arranged in clusters of six with a central light source to create a stunning starry night sky effect, or in flowing organic arrangements for a biophilic atmosphere. Available with powder coating, anodizing, PVDF, metallic, or wood grain finishes to complement any interior design scheme. Ideal for feature ceilings, retail spaces, hospitality venues, and art installations requiring a distinctive natural aesthetic.

2. Technical Specifications

Item	Specification	Test Standard
Base Material / Alloy	AA3003 / AA1100 Aluminum Alloy	GB/T3190-2020, ASTM B209
Panel / Leaf Thickness	0.8mm - 2.0mm (± 0.05 mm)	ASTM B209
Leaf Size Range	200mm - 1200mm (customizable per project)	ISO 128
Fabrication Process	Laser cutting, press forming, CNC bending, edge finishing	Engineering spec
Leaf Shape Options	Botanical leaf shapes — single, clustered, vine-style	Custom per design
Pattern / Arrangement	Single leaf, six-leaf cluster (with center light), flowing arrangements	Per project layout
Surface Finish Options	Powder coating (RAL),	AAMA 2604, AAMA 2603

	anodizing, PVDF, metallic, wood grain	
Coating Thickness	Powder: $\geq 60\mu\text{m}$; Anodizing: $\geq 10\mu\text{m}$	ASTM D7091
Installation Method	Suspended wire system or fixed track system	Engineering specification
Fire Resistance Rating	Grade A (non-combustible)	EN 13501-1, ASTM E84
Flatness Tolerance	$\leq 2\text{mm/m}$ (individual leaf)	YS/T429.1
Coating Adhesion	Cross-cut: Grade 1	ASTM D3359
Corrosion Resistance	Salt spray: $\geq 500\text{h}$	ASTM B117
Tensile Strength	145-180 MPa (AA3003)	ASTM E8, GB/T3880
Density	2.70 g/cm ³	ASTM D792
Warranty & Customization	15-year warranty; shape/size/finish/arrangement fully customizable	Company standard / Per project

3. Manufacturing Process

3.1 Laser Cutting of Leaf Shapes

Precision CNC laser cutting of AA3003/AA1100 aluminum sheets into individual leaf shapes per the approved pattern design. Cutting tolerance maintained at $\pm 0.2\text{mm}$ with smooth, burr-free edges. Leaves are cut in various sizes (200mm - 1200mm) as specified by the project design.

3.2 Press Forming & 3D Shaping

Laser-cut leaf blanks are press-formed using dedicated dies to create three-dimensional organic curvature. Each leaf receives consistent forming pressure to ensure uniform shape and profile. Complex multi-curve leaves may undergo progressive forming in multiple press stages.

3.3 Edge Finishing & Deburring

Formed leaves undergo mechanical deburring, edge smoothing, and surface polishing. Sharp edges are removed and leaf contours are refined. Surface is prepared for the specified finish treatment with consistent surface quality across all leaves.

3.4 Surface Treatment & Coloring

Leaves are cleaned, pretreated, and coated with the selected finish: powder coating (any RAL color), anodizing (natural or colored), PVDF fluorocarbon, metallic paint, or wood grain transfer printing. Coating thickness and color consistency are verified. Custom gradient or multi-tone finishes available for realistic botanical effects.

3.5 Assembly Configuration

Finished leaves are grouped into pre-arranged clusters per the approved layout. Cluster assemblies (e.g., six-leaf clusters with center light provisions) are pre-configured with suspension hardware. Single leaves for flowing/vine arrangements are individually packaged with color-coded installation reference tags.

3.6 Packaging & Labeling

Leaves are packed in layered cartons or wooden crates with foam dividers between layers to prevent surface contact and scratching. Each cluster or individual leaf is labeled with position reference matching the installation layout drawing. Suspension cables and mounting hardware are included in separate labeled packaging.

4. Application Scope

The Ballesta Leaf Ceiling is designed for distinctive interior spaces, including but not limited to:

- Hotel lobbies, atriums, and restaurant feature ceilings
- Retail flagship stores, boutique showrooms, and mall common areas
- Spa and wellness centers creating biophilic relaxation environments
- Museum exhibition spaces, art galleries, and cultural venues
- Corporate reception areas, executive offices, and creative workspaces

- Residential luxury interiors, villa feature ceilings, and covered outdoor terraces

- **ASTM B209:** Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- **GB/T3190-2020:** Chemical Composition of Wrought Aluminum and Aluminum Alloys
- **GB/T3880:** Aluminium and Aluminium Alloy Plates and Sheets for General Industrial Use
- **EN 13501-1:** Fire Classification of Construction Products (Class A1/A2)
- **ASTM E84:** Standard Test Method for Surface Burning Characteristics of Building Materials
- **ASTM D3359:** Standard Test Methods for Measuring Adhesion by Tape Test
- **AAMA 2604:** Voluntary Specification for High Performance Organic Coatings on Aluminum Extrusions and Panels
- **ASTM B117:** Standard Practice for Operating Salt Spray (Fog) Apparatus

6. Packaging & Storage

Packaging: Each leaf panel is interleaved with protective foam or tissue paper and packed in corrugated cartons or custom wooden crates. Cluster assemblies are pre-rigged with suspension hardware and packed as complete units. All mounting

accessories are included in separate labeled hardware packages.

Storage: · **Store in a dry, ventilated and rainproof warehouse, avoid direct sunlight, high temperature ($>70^{\circ}\text{C}$) and high humidity ($\text{RH}>95\%$) environment.**

- Avoid contact with sharp objects, chemicals and corrosive substances to prevent surface damage and substrate corrosion.
- Stacking height of leaf cartons shall not exceed 5 layers to prevent deformation of formed leaf shapes.
- The storage site shall be far away from fire sources to meet the fire safety requirements of Grade A fire-resistant materials.

7. Quality Assurance

All leaf ceiling panels undergo strict multi-item quality inspection before delivery, including dimensional tolerance, edge finish quality, forming accuracy, surface coating thickness, color consistency, flatness, and fire resistance. Cluster assemblies are trial-fitted to verify pattern alignment and suspension balance.

We provide a warranty period of not less than 15 years for the product (under normal use conditions and compliance with installation and storage requirements). Within the warranty period, the surface coating shall have no obvious fading, peeling, or cracking; the aluminum substrate shall have no corrosion or deformation defects; and suspension hardware shall remain structurally sound.
