

Selco: Inventing Green

Areca Lighting System

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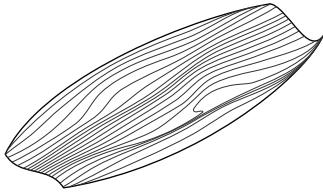
Introduction

Areca wood is widely used in Karnataka by entrepreneurs as a natural material for organic bio-degradable disposable plates, table wear, trays and packaging. Areca palm leaves are gathered, dried, then cleaned and soaked in water. Heated molds with very simple chucks are used to stamp the leaves into bowls and plates. SELCO has a specific, small but successful areca factory owner standing by to experiment with other industrial / design uses for this bio-degradable material. KVA has produced prototypes of home and portable lighting fixtures which would be produced from areca within the forementioned context.

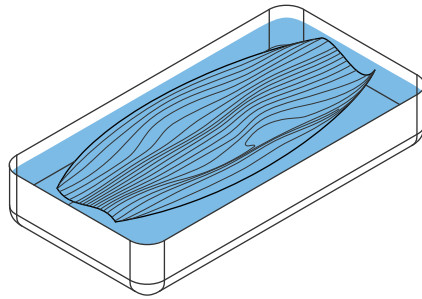
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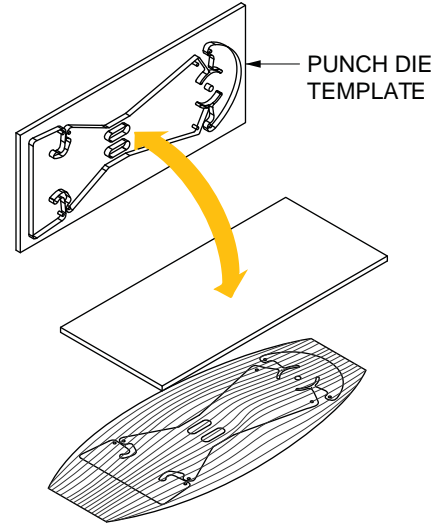
Fabrication Process



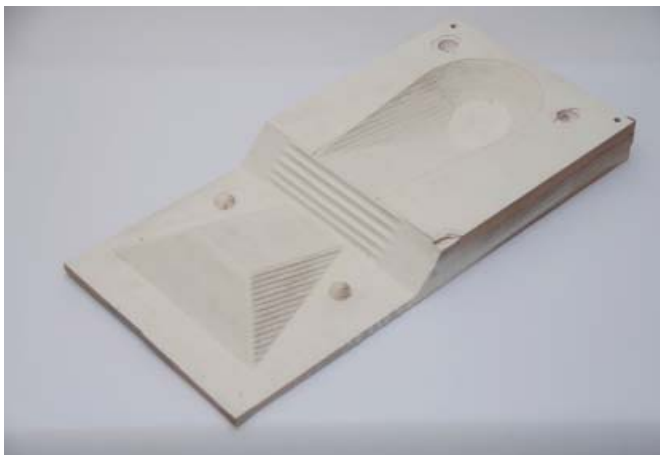
1. Raw, dry areca leaf



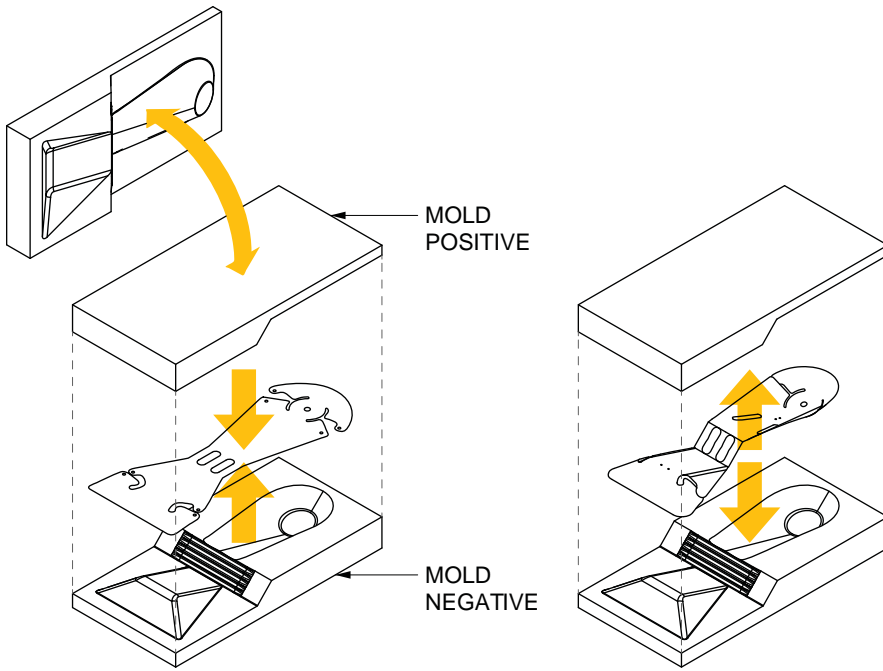
2. The areca leaf is soaked in water to improve workability.



3. The Leaf is trimmed to shape.

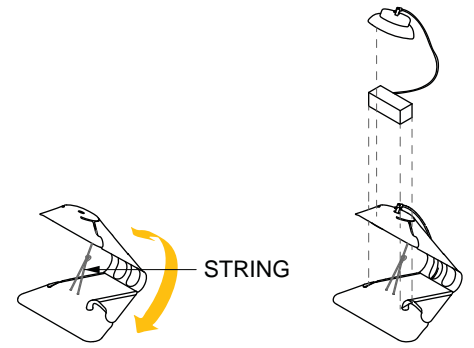


Two-sided areca mold



4. The trimmed leaf is set into a two-sided mold; pressure is applied to shape the area.

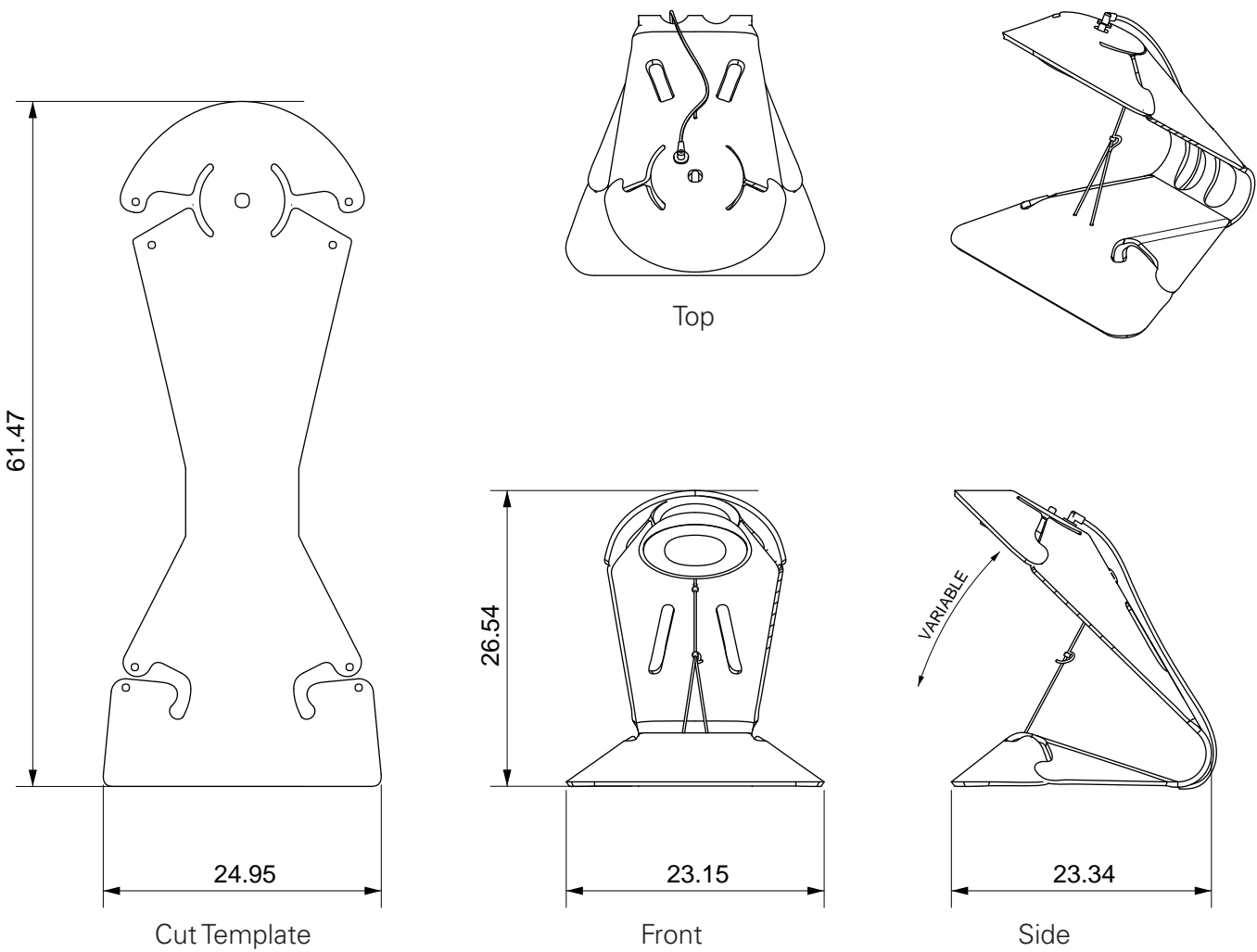
5. The formed area is removed from the mold.



6. Living hinges are set, and electronics are installed.

Task Light

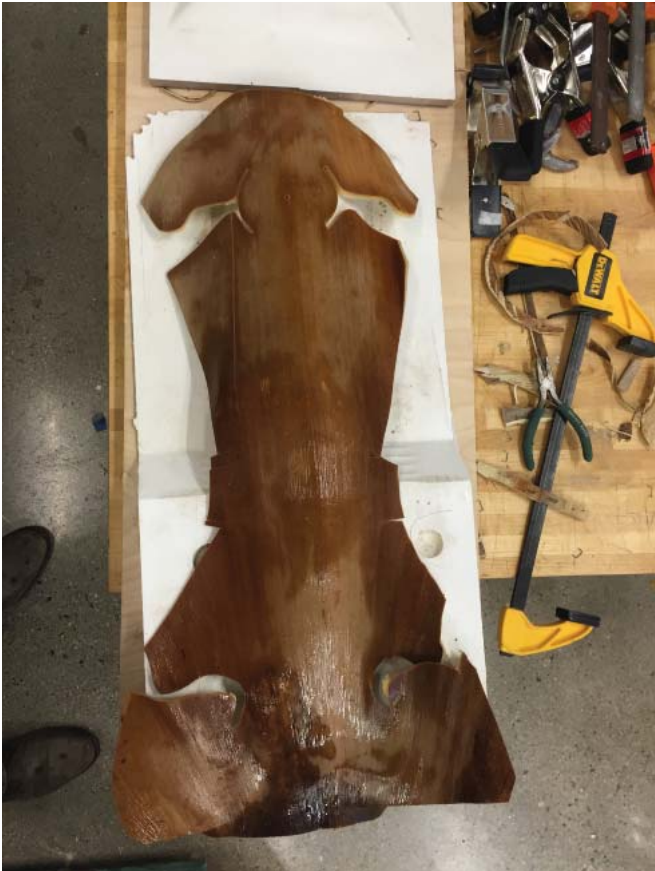
The task light transforms a single leaf of areca into a functional, inexpensive, and locally-sourced fixture for Selco's BPL system. The design takes advantage of areca's flexibility, and introduces functional adjust-ability via a living hinge.



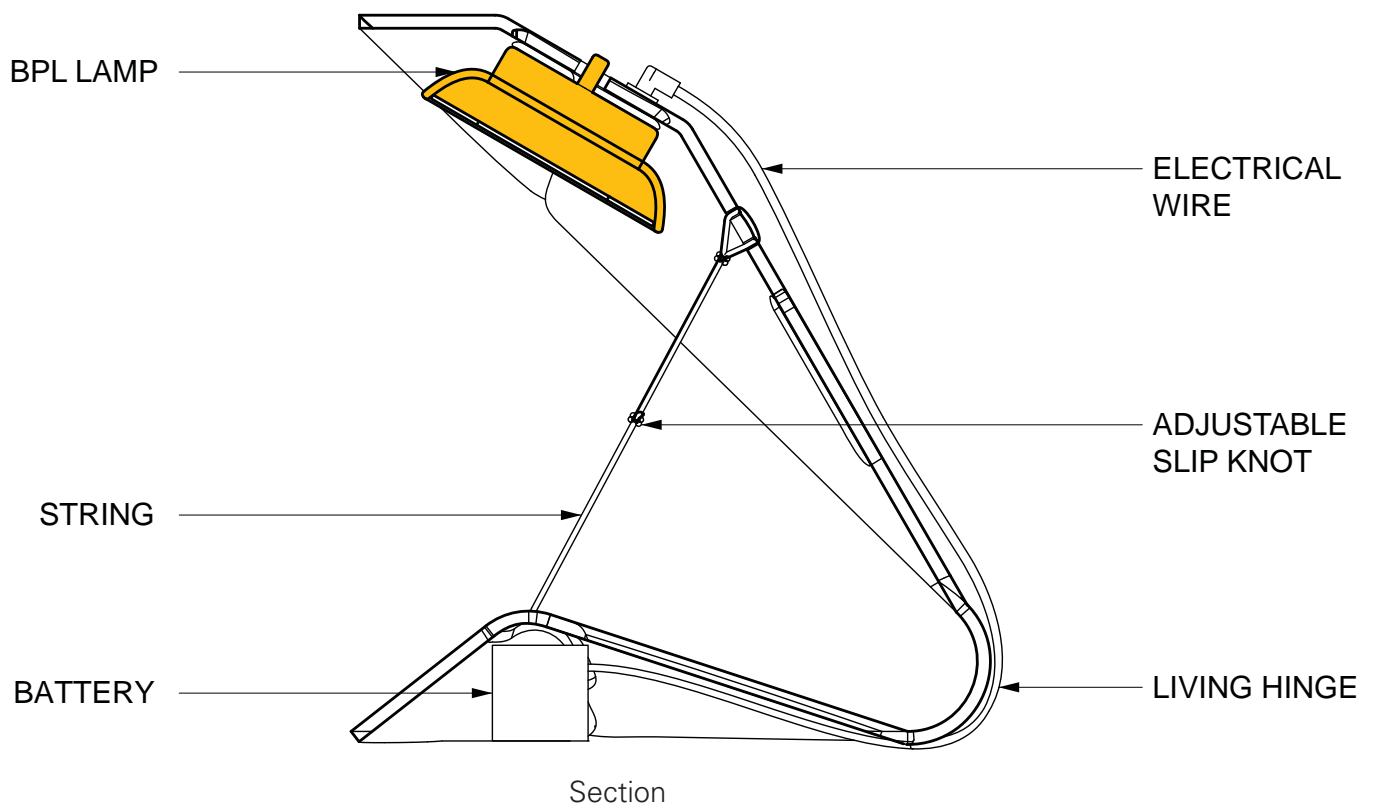




Prototype

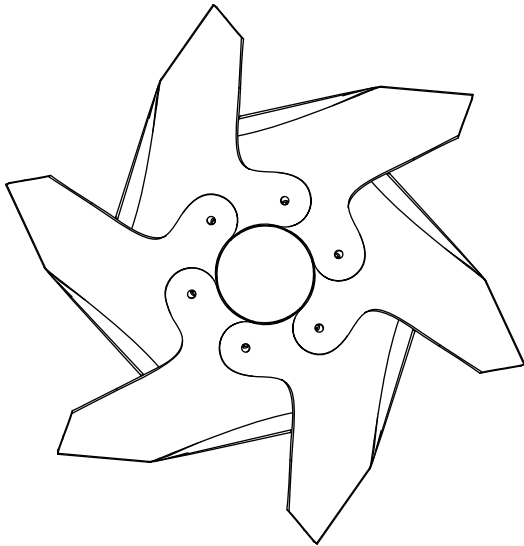


Molding Process

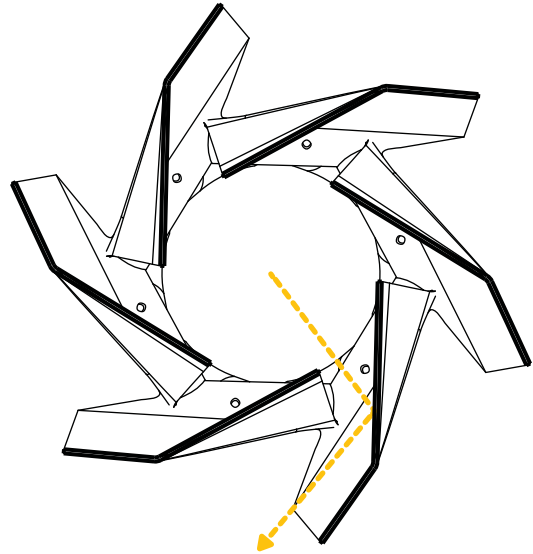


Pendant

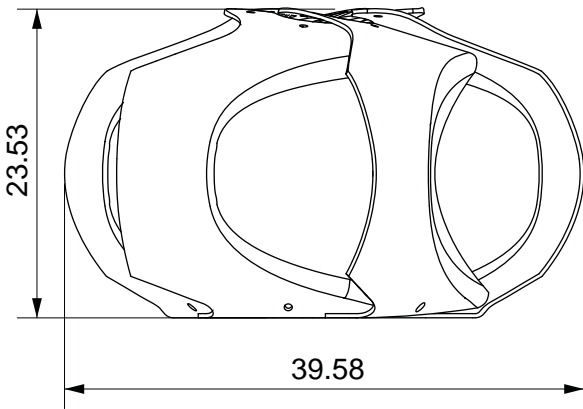
Aggregated areca reflectors were investigated as a means of improving the effects of the dual home light, in order to create more even, dispersed light. Six molded areca reflectors are arranged as baffles so as to eliminate direct glare and evenly shed diffused light, while a large aperture at the bottom allows more intense light to illuminate an area directly below.



Top

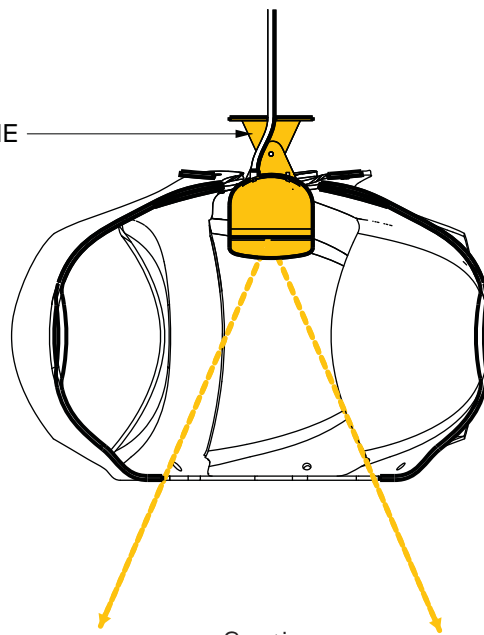


Section



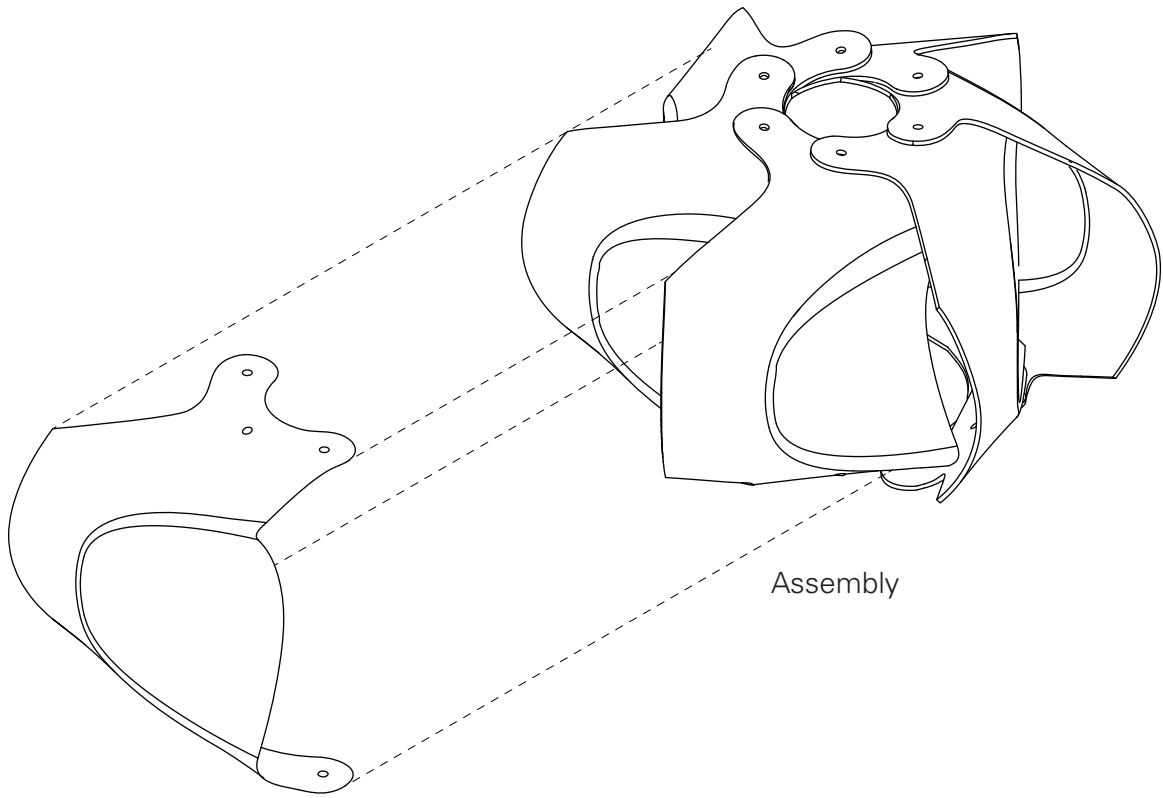
Side

SINGLE HOME LIGHT



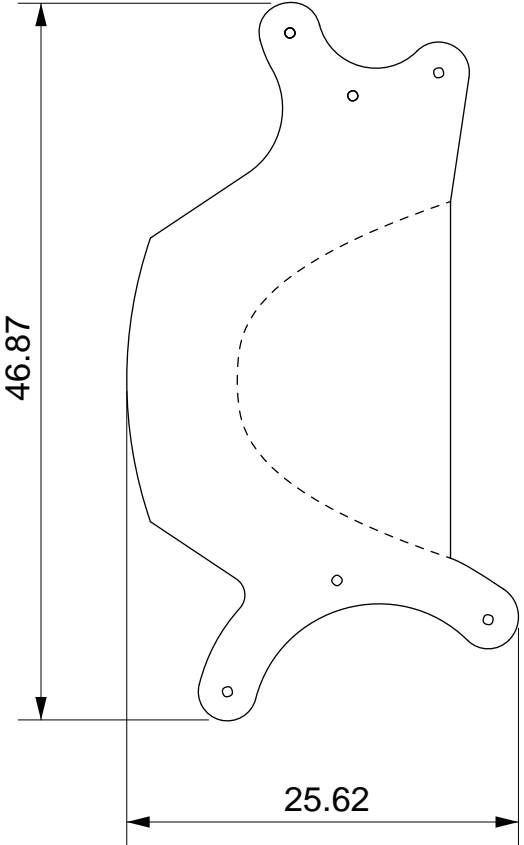
Section





Assembly

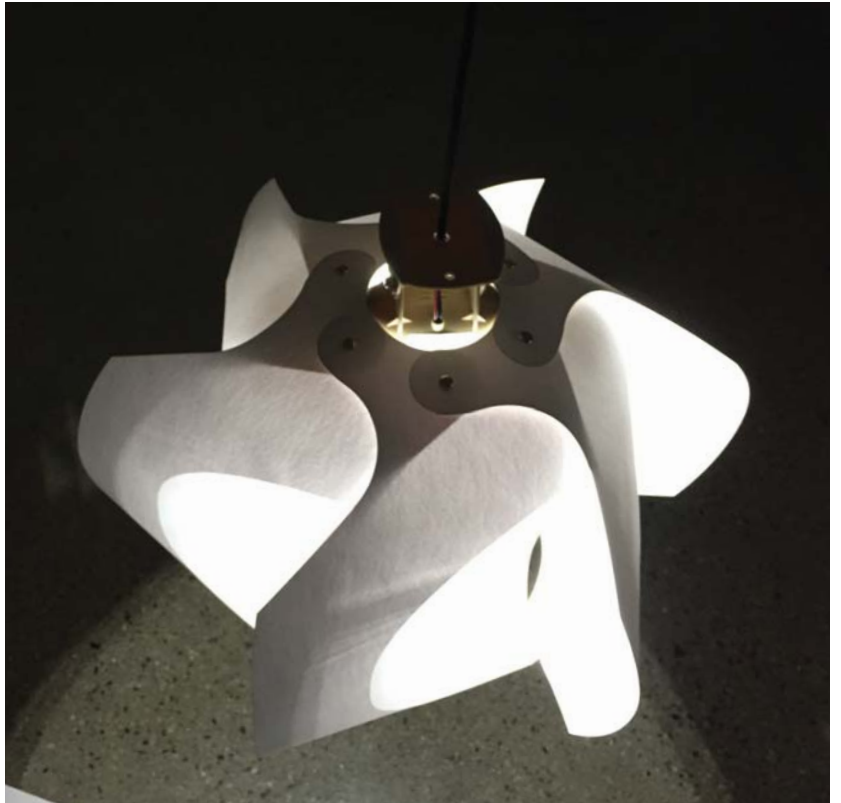
(x6)



46.87

25.62

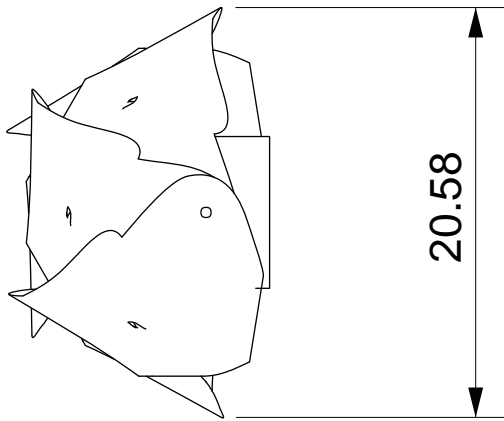
Template



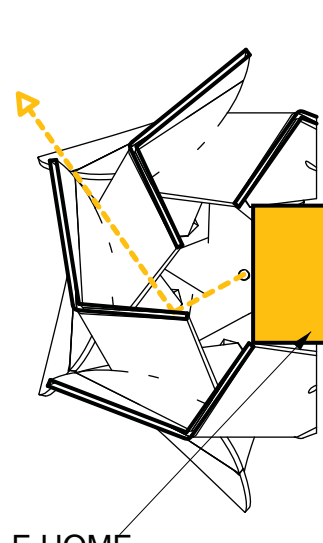
Paper mock-up Prototypes

Wall Sconce

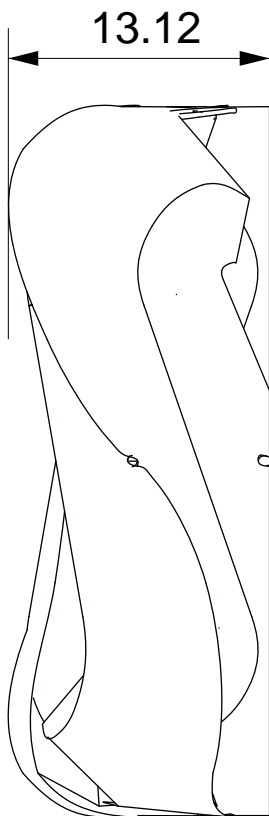
Similar to the pendant, the wall sconce employs aggregated area reflectors in order to provide a space with diffused light. The sconce reflects light from the dual home lighting system evenly thanks to a set of recurved baffles which cast light in opposite directions.



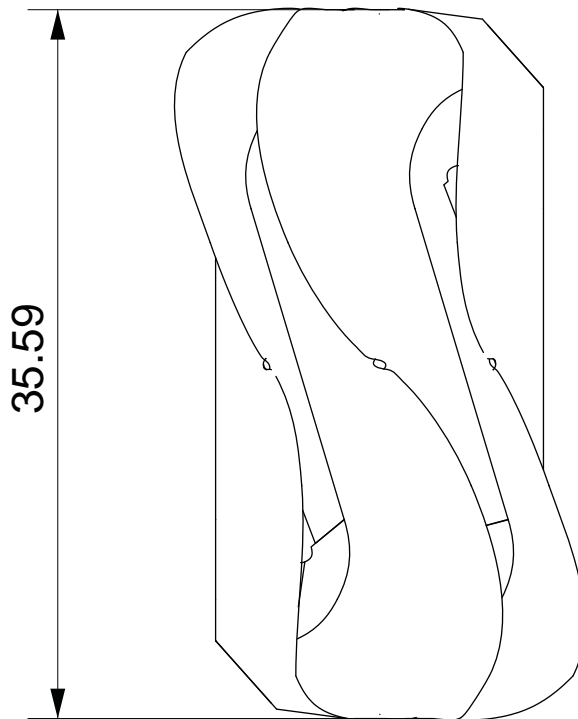
Top



SINGLE HOME LIGHT

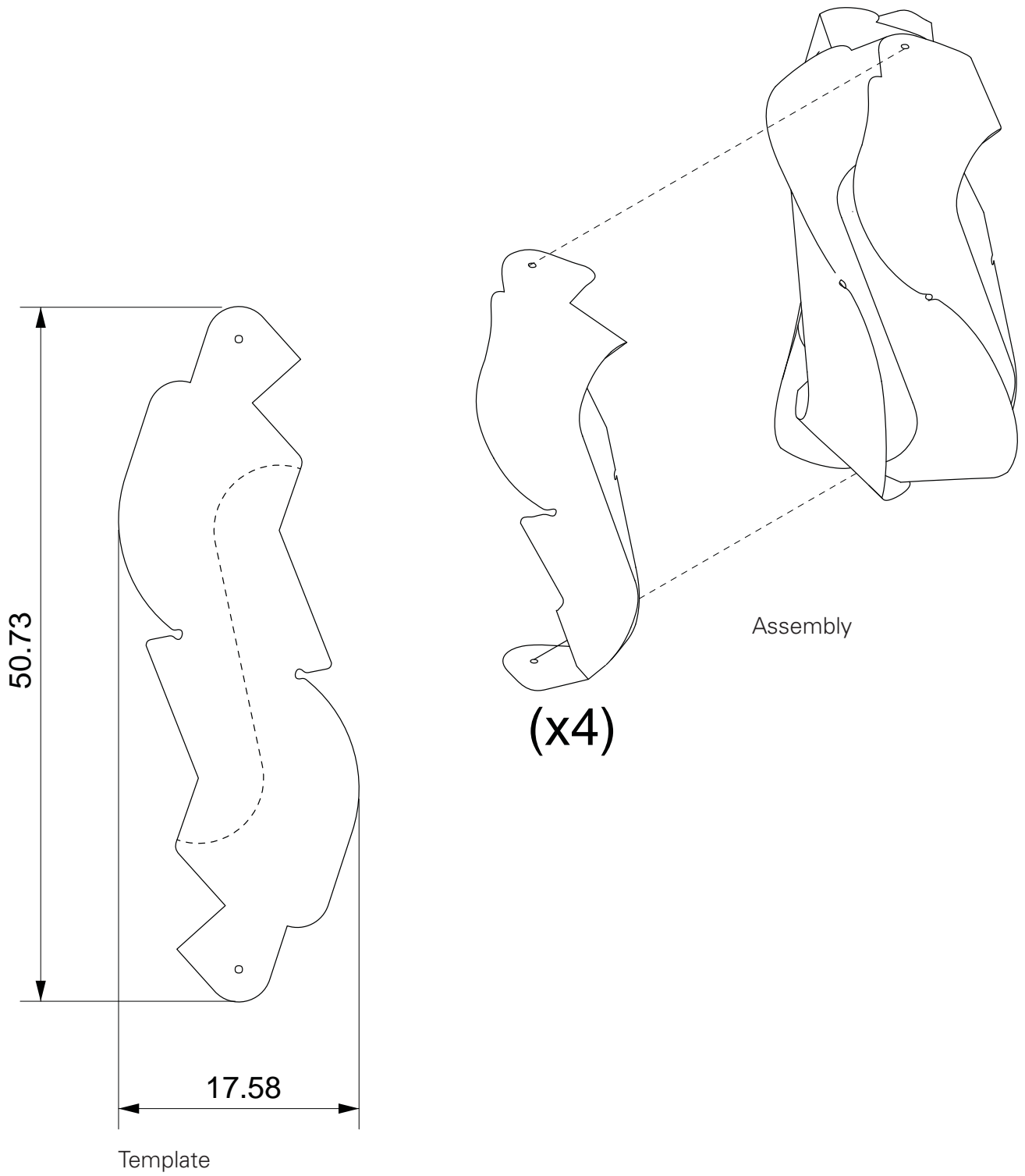


Side



Front







Paper mock-up Prototypes