

TABLE OF CONTENT

1. Introduction
2. LED Bulb assembly Process
 - 2.1. LED bulb components
 - 2.2. Assembly Process
3. LED Lights: Other Products
 - 3.1. Assembly process
4. Testing and Quality Certifications
 - 4.1. CE Certification
 - 4.2. Testing Equipment
 - 4.3. Process for BIS Certification
 - 4.3.1. Fee and charges for BIS Certification
5. Printed Circuit Board Manufacturing Process
 - 5.1. LED Driver Assembly Process
 - 5.1.1. Why are Drivers Required in LEDs
 - 5.1.2. Assembly process
6. Procurement of LED Components
 - 6.1. Importing v/s Procuring Domestically
 - 6.1.1. Importing from CHINA "Pros and Cons"
 - 6.1.1.1. Comments
 - 6.2. LED Chip Sourcing
 - 6.3. LED Drivers: In-House Assembling v/s Importing v/s Procuring Domestically
 - 6.4. PCB: In-House Assembling or Outsourcing
 - 6.5. Procuring Heat Sink and Bulb Housing
7. LED Market
 - 7.1. LED Market Trends
 - 7.2. LED Market Segments
 - 7.2.1. Categories of LED Market in India
 - 7.2.2. Attractive Segments for Small Business
 - 7.3. Manufacturing and Selling Under New Brand
 - 7.3.1. Retrofit Segment - Products for Existing Homes and Offices
 - 7.3.2. Products for New Homes and Buildings
 - 7.4. Vendor Agreement with LED Lights Manufacturer
 - 7.5. Distributorship/Franchise of LED Components
 - 7.6. LED House hold Bulbs Market Size and Opportunity
 - 7.6.1. Requirements for Participating in Government Tender Business
 - 7.6.1.1. Wattage
 - 7.6.1.2. BIS Standards
 - 7.6.1.3. Technical Warranty
 - 7.6.1.4. Technical Specifications
 - 7.6.1.5. Other Requirements
 - 7.6.1.6. List of Documents to be attached to the Application
8. Capital Requirement: CAPEX, Break-even and Profitability
9. Annexure
 - 9.1. Documents Required for the Quality Certifications

LIST OF TABLES

1. Specifications of LED Bulb
2. Required tools
3. Various Applications and Respective Products
4. Technical Parameters and Applicable Standards
5. Machinery for LED Lights
6. Ideal Cost Structure
7. LED Diodes - Imported v/s Purchased Domestically
8. Comparison on LED Drivers - Imported v/s Domestically v/s In-House Assembly
9. Local and National Drivers Manufacturers
10. PCB Fabrication Viability Report
11. Local PCB Suppliers
12. Key Players in the Market
13. Market Segmentation - Application Wise
14. LED Bulb Market Size - INDIA
15. ICL v/s LED
16. Capital Requirement
17. Profitability

***NOTE:** Please Look at next page for the summary of the procurement and the cost structure.

LED bulb cost structure and component procurement

In LED assembly most of the components are outsourced and hence it is imperative to choose the suppliers with utmost care. Following are some of the points one should take care of:

- Order lead time and transportation cost- The order quantity may be optimum to suit the overall cost efficiency.
- Warranty and quality of each and every component to suit the overall warranty and quality of the final product. Component suppliers provide MTBF (mean time before failure) for their products and free replacement if the product fails before MTBF

In terms of components LED driver and Chip account for over 50% of the cost of an LED bulb as can be seen from the table below.

| Ideal cost structure (5-7 watt) | | | |
|---------------------------------|---------------|---------------------|-------------------------|
| Description | Amount (INR) | Share of total cost | Source of the component |
| LED chips | 16 | 21% | China |
| Labour & Assembly | 8 | 10% | India |
| Heat sink | 3.5 | 4% | China/India |
| LED Driver board | 35 | 43% | India |
| Housings | 13.8 | 17% | China |
| PCB | 5 | 6% | India |
| Total | 82.175 | 100% | |

LED chips are typically not made in India and hence have to be sourced from China. However, LED drivers are readily available in India and are more economical vis a vis Chinese products. Further, the driver costs can be cut significantly (by more than 10-15%), if once can assemble them in house. The plastic parts, are cheaper if purchased from China, unless one already has an injection moulding machine, which is used for other products as well. PCBs can also be sourced from a PCB supplier who has the automated assembling machines. Our analysis reveals that it is not optimal to manufacture PCB in house unless the requirement exceeds 4-5 lakh board per annum.

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