



**DAV UNIVERSITY**

+91 - 181- 270 8844

Telephone

[naac@davuniversity.org](mailto:naac@davuniversity.org)

E-mail

[www.davuniversity.org](http://www.davuniversity.org)

Website

## 7.1.2 The Institution has facilities for alternate sources of energy and energy conservation measures

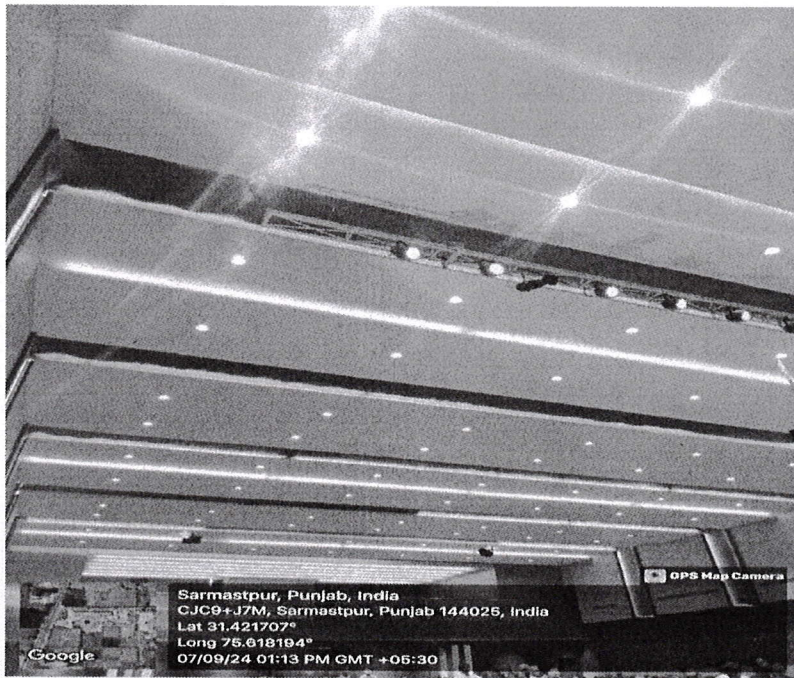
### Geotagged Photographs of the Facilities- LED Bulbs/Power Efficient Equipment

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## 7.1.2 Alternative Sources of Energy & Energy Conservation Measures

### Use of LED bulbs/ power efficient equipment



Around 3500 Nos. of LEDs of Different Wattage including Flood Lighting

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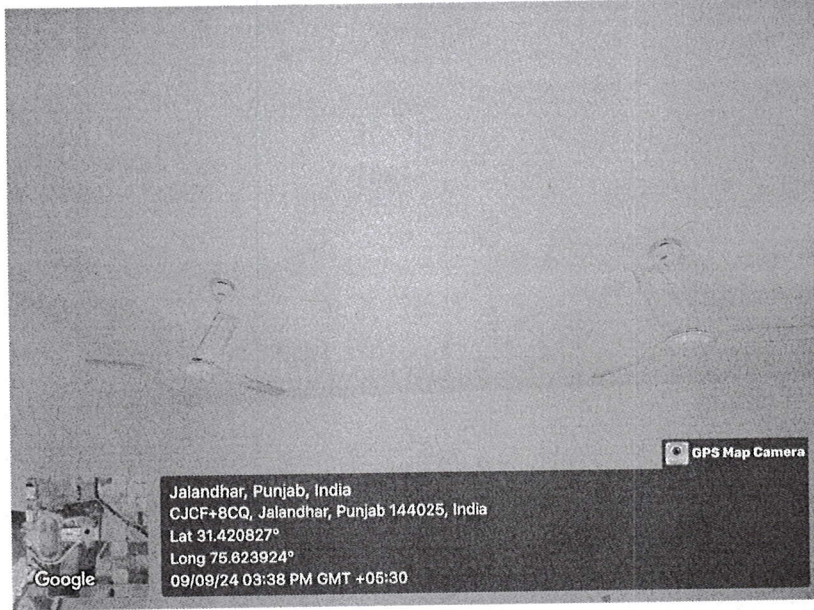
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5 Star Rated by BEE 48"  
Ceiling Fans 700Nos.

Jalandhar, Punjab, India  
CJCF+8CQ, Jalandhar, Punjab 144025, India  
Lat 31.420827°  
Long 75.623924°  
09/09/24 03:38 PM GMT +05:30

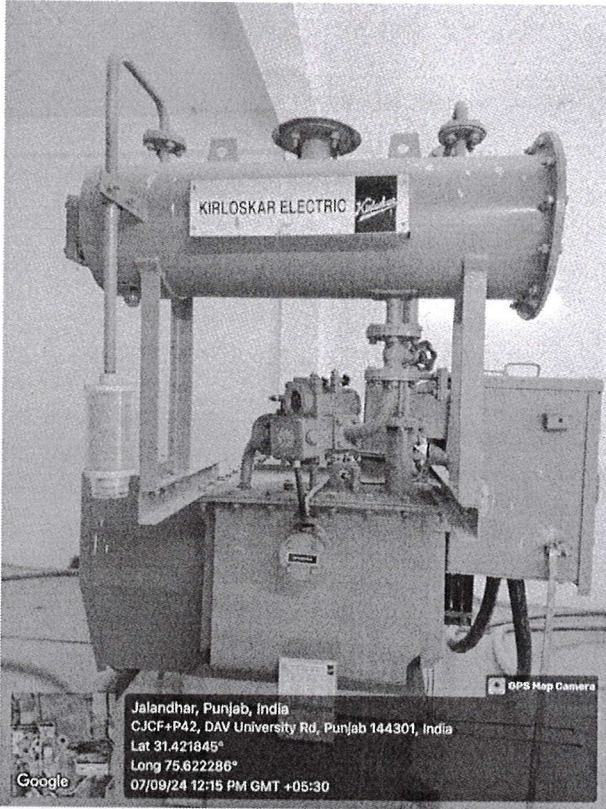
GPS Map Camera

Google

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An energy-efficient Level 2 500KVA transformer is designed to minimize energy losses and reduce environmental impact. Key features include:

1. **High-Efficiency Core Materials:** Using materials like amorphous metal or nanocrystalline alloys to reduce core losses.
2. **Low-Loss Windings:** Optimized winding designs and materials to minimize electrical losses.
3. **Compact Design:** Reduced size and weight to lower material usage and environmental impact.
4. **Smart Sensors and Monitoring:** Integrated sensors and monitoring systems to track performance and optimize energy efficiency.
5. **Energy-Efficient Cooling:** Natural or forced-air cooling systems to reduce energy consumption and environmental impact.
6. **High-Efficiency Ratings:** Meets or exceeds efficiency standards like IEEE C57.12.00 or IEC 60076-11.
7. **Sustainable Materials:** Using recyclable and biodegradable materials in construction.

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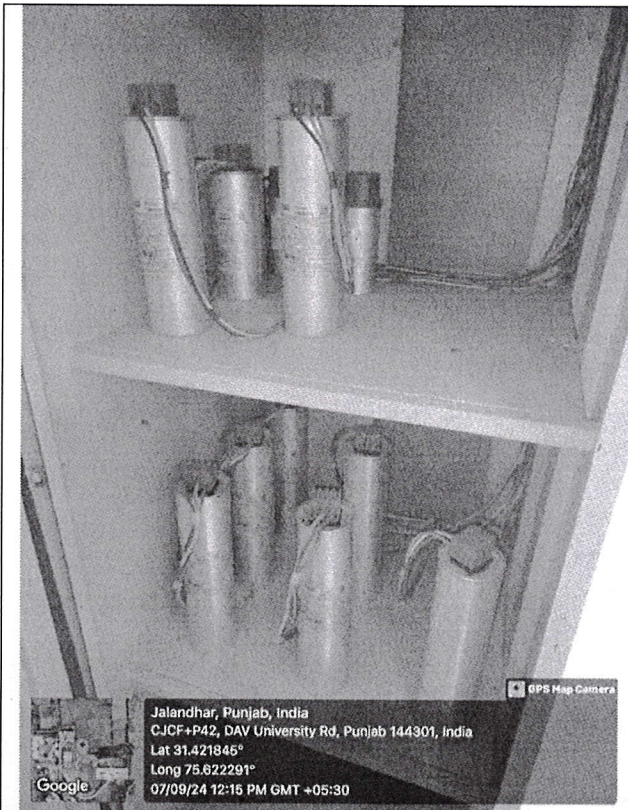
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	<p>8. Low No-Load Losses: Designed to minimize energy consumption when not in use.</p> <p>9. Harmonic Mitigation: Built-in harmonic mitigation techniques to reduce energy losses and electromagnetic interference.</p> <p>10. Compliance with Energy Standards: Meets or exceeds local and international energy efficiency regulations.</p> <p>By incorporating these features, energy-efficient Level 2 transformers reduce energy waste, lower operating costs, and contribute to a more sustainable future</p>
<p style="text-align: center;"><b>ATTESTED</b></p> <p style="text-align: center;"> <b>Registrar</b> DAV University, Jalandhar</p>	<p>APFC 200KVAR Capacitor Bank for Power Factor Improvement</p> <p>An Automatic Power Factor Panel (APFP) is a type of electrical panel that automatically regulates and controls the power factor of a power supply to ensure it remains within a specified range. Here's how it works:</p> <p>Monitors Power Factor: The APFP continuously monitors</p>



the power factor of the power supply.

**Automatic Correction:** When the power factor falls below a set threshold, the APFP automatically switches in capacitors to correct the power factor.

**Optimization:** The APFP optimizes the power factor by selecting the appropriate capacitor combination.

**Protection:** The APFP protects the electrical system from power factor-related issues, such as:

- + Low power factor penalties
- + Overheating
- + Voltage drops
- + Equipment damage

**Benefits of Automatic Power Factor Panels:**

- \*Improved Power Quality
- \*Reduced Energy Losses
- \*Lower Electricity Bills
- \*Increased System Efficiency
- \*Compliance with Power Factor Regulation

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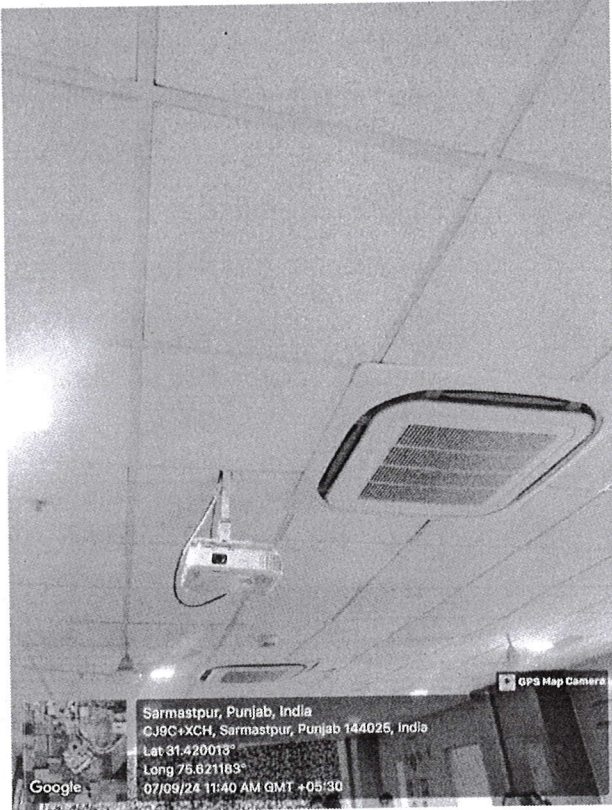


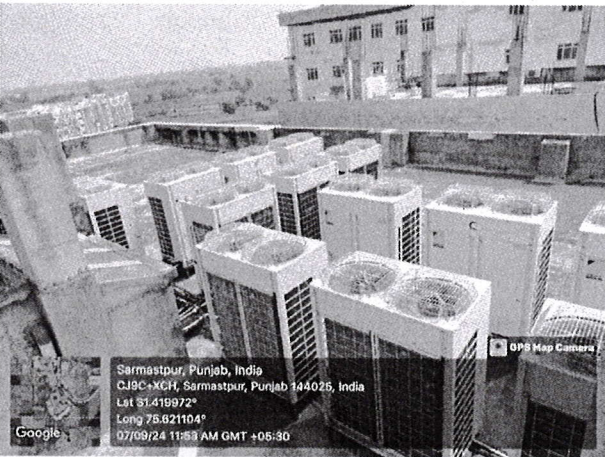
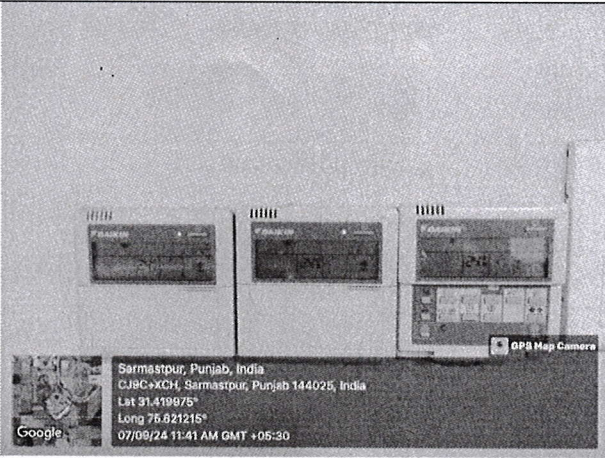
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	<p>By automatically regulating the power factor, APFPs help ensure efficient, reliable, and cost-effective electrical power distribution.</p>
 <p><b>ATTESTED</b> <i>Registrar</i> <b>DAV University, Jalandhar</b></p>	<p>Indoor Cassette for highly efficient 436HP DAIKIN VRV System</p> <p>Daikin's VRV (Variable Refrigerant Volume) systems are designed to be energy efficient in several ways:</p> <ol style="list-style-type: none"><li>1. Inverter Technology: Daikin's VRV systems use inverter-driven compressors, which modulate their speed to match the cooling or heating demand, reducing energy waste.</li><li>2. Variable Refrigerant Flow: The system adjusts refrigerant flow to each indoor unit based on its individual needs, optimizing energy use.</li><li>3. High-Performance Compressors: Daikin's compressors are designed for</li></ol>



high efficiency and low energy consumption.

4. **Advanced Heat Exchangers:** Daikin's heat exchangers are designed for maximum heat transfer efficiency, reducing energy losses.

5. **Smart Sensors and Controls:** Daikin's VRV systems come with advanced sensors and controls that optimize performance, detect issues, and adjust operation for maximum efficiency.

6. **Part-Load Efficiency:** Daikin's VRV systems maintain high efficiency even at part-load conditions, which is typical in most applications.

7. **Refrigerant Efficiency:** Daikin's VRV systems use environmentally friendly refrigerants with low global warming potential.

8. **System Optimization:** Daikin's VRV systems can be optimized for specific applications and building conditions, ensuring maximum

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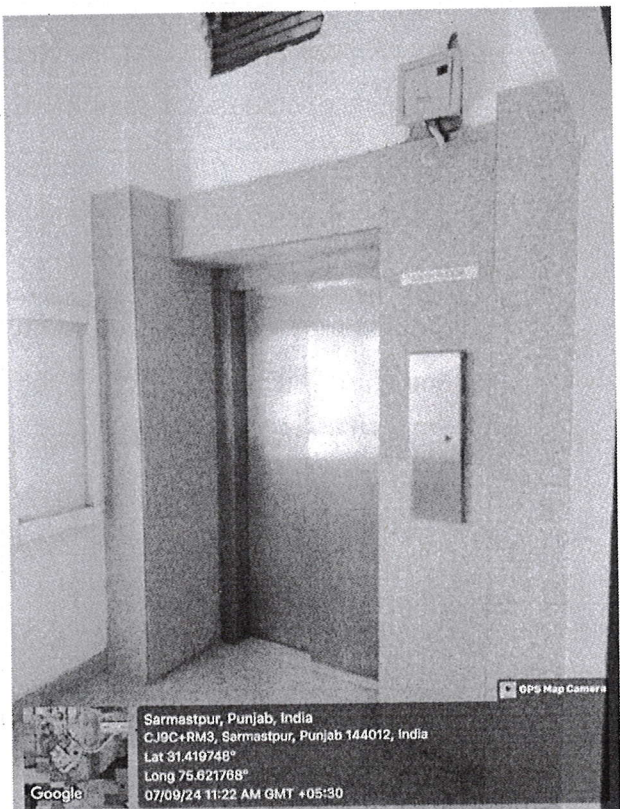
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	<p>energy efficiency.</p> <p>By combining these technologies, Daikin's VRV systems can achieve significant energy savings, often up to 30-50% compared to traditional HVAC systems.</p>
 <p style="text-align: center;"><b>ATTESTED</b></p> <p style="text-align: center;"><i>Registrar</i> <b>DAV University, Jalandhar</b></p>	<p>10 Nos. of Johnson Passenger Elevators</p> <p>Johnson Lifts, a leading elevator manufacturer, offers energy-efficient lifts that incorporate various technologies to reduce energy consumption. Some features of their energy-efficient lifts include:</p> <ol style="list-style-type: none"><li>1. Machine Room-Less (MRL) Design: Eliminates the need for a dedicated machine room, reducing energy consumption and space requirements.</li><li>2. Gearless Machines: High-efficiency gearless machines reduce energy losses and provide smooth operation.</li><li>3. Regenerative Drive: Captures energy generated by</li></ol>



the lift during descent and feeds it back into the building's electrical grid.

4. LED Lighting: Energy-efficient LED lighting reduces power consumption.

5. Energy-Efficient Motors: High-efficiency motors minimize energy losses.

6. Smart Controls: Optimized control systems reduce energy consumption by:

- Matching lift speed to passenger demand
- Reducing start/stop cycles
- Optimizing door opening/closing times

7. Low-Power Sleep Mode: Lifts enter a low-power state during periods of inactivity.

Johnson Lifts' energy-efficient solutions can help reduce energy consumption by up to 50% compared to traditional lifts.

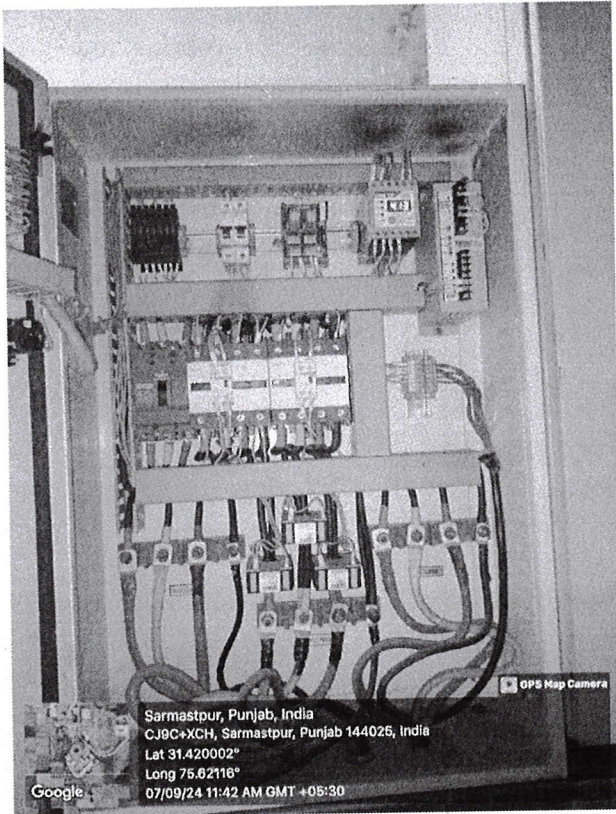


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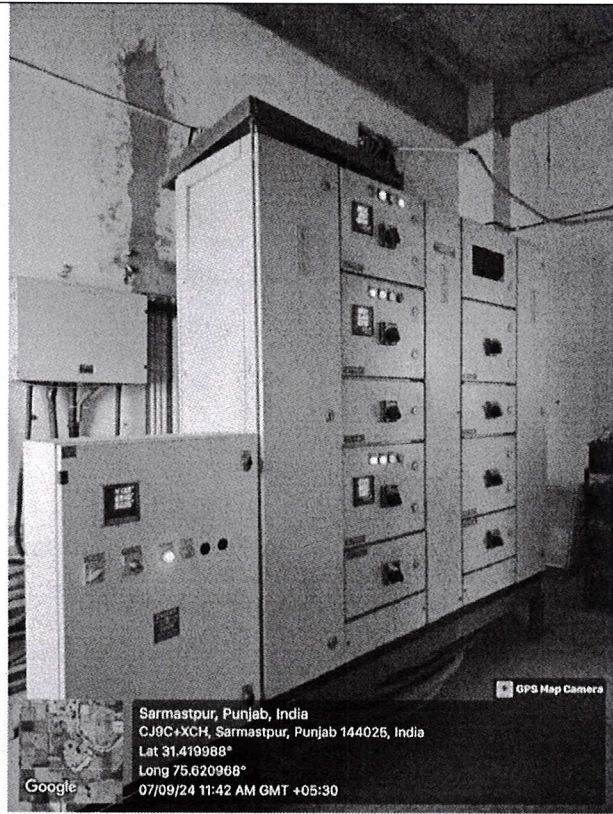
3 Nos . of AMF Panels

An Automatic Mains Failure (AMF) panel can contribute to energy conservation in several ways:

1. Ensures Efficient Switching: AMF panels automatically switch to a backup power source (like a generator) during mains failure, reducing the energy wasted during manual switching.
2. Minimizes Transition Losses: AMF panels optimize the transition process, minimizing energy losses and reducing the stress on electrical equipment.
3. Reduces Standby Power Consumption: Some AMF panels can be configured to shut down or put into standby mode non-essential loads during mains failure, reducing standby power consumption.
4. Optimizes Generator Performance: AMF panels can be integrated with generators to optimize their performance,

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reducing fuel consumption and associated emissions.

5. Real-time Monitoring: Advanced AMF panels offer real-time monitoring, enabling energy managers to track energy usage and identify areas for further optimization.

6. Automated Load Shedding: AMF panels can be configured to automatically shed non-essential loads during mains failure, reducing the risk of overloading and associated energy waste.

7. Compliance with Energy Standards: AMF panels help organizations comply with energy efficiency standards and regulations, avoiding potential penalties and fines.

By incorporating energy-efficient features and optimizing power management, AMF panels can contribute to overall energy conservation and reduced environmental impact.

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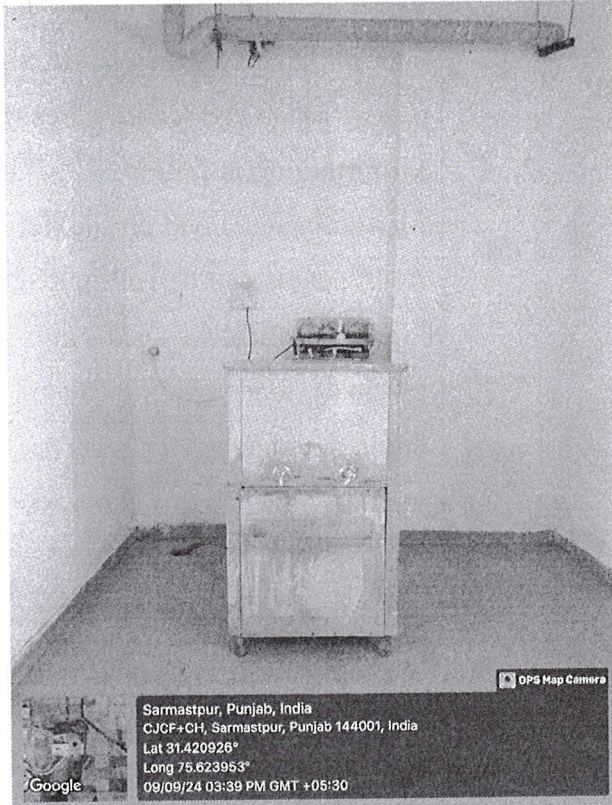


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## 30 Nos. USHA Water Cooler

Usha water coolers are designed to be energy efficient. Here are some features that make them sensor based energy efficient:

### 1. Low Power Consumption:

Usha water coolers have a low power consumption range of 120-200 watts, which is significantly lower than traditional air conditioners.

### 2. High Cooling Efficiency:

Usha water coolers use advanced cooling technologies like evaporative cooling, which is more energy efficient than traditional vapor compression cooling.

### 3. Auto-Shutoff:

Many Usha water cooler models come with an auto-shutoff feature that turns off the cooler when not in use, saving energy.

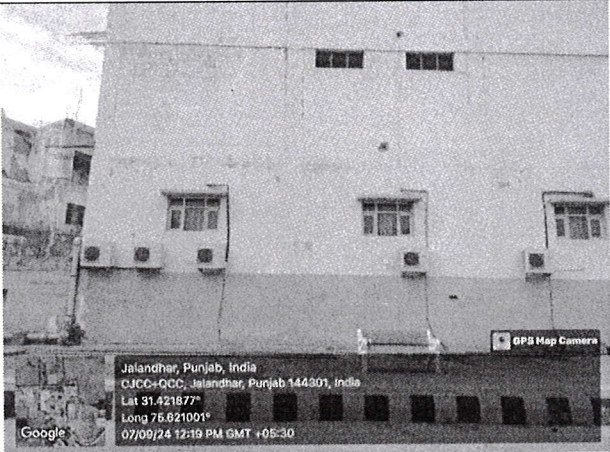
### 4. Energy-Efficient Motors:

Usha water coolers are equipped with energy-efficient motors that reduce energy

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	<p>losses.</p> <p>5. Eco-Friendly: Usha water coolers are an eco-friendly alternative to air conditioners, using water to cool the air instead of harmful refrigerants</p>
	<p>Around 98 Nos. sensor-based split AC is a type of air conditioning system that uses sensors to detect and respond to changes in the room's temperature and humidity.</p> <ol style="list-style-type: none"><li>1. Temperature sensors: Detect the room's temperature and adjust the AC's cooling or heating output accordingly.</li><li>2. Humidity sensors: Monitor the room's humidity levels and adjust the AC's dehumidification or humidification output.</li></ol>

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