# **ActivCooling™**

Wearable AC with Helmet



### **Concept**

ActivCooling™ is a Wearable Air Cooling and Heating system fitted into a certified hard hat/helmet. The cooling technology is proprietary making the product the World's first air-conditioned headgear. The patented cooling system is designed to provide portable ventilation in areas where the ambient temperature lies between 40°C and 60°C. It's an effective alternative to provide cooling in areas where installation of traditional solutions like Split ACs or Wall Mounted Fans is not practical. Additionally, the helmet can provide cooling and heating capabilities powered by a rechargeable Li-ion battery.

ActivCooling™ is designed to improve the lives of users working in locations with low ventilation and high temperature, particularly during harsh summer and winter when extreme weather conditions coupled with extreme working environments play havoc with both the psychological and physical condition of the user, affecting productivity.

### **Helmet Features**

The scope of ISO 3873:1977 standard specifies the requirement for occupational protective helmets to protect employees' heads from falling objects in building and construction, quarrying, shipbuilding, forestry, and other occupations with similar hazards.

These requirements specify the construction and materials of the helmet shell and head harness, the mechanical strength of the shell, and the finish of the helmet.

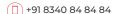
# Variants of ActivCooling™ Helmet



|   | Helmet Colour | White (Hat) & Grey (AC)   |
|---|---------------|---------------------------|
| L |               | Yellow (Hat) & Red (AC)   |
|   | Visors        | Tinted                    |
|   |               | Clear                     |
|   | Battery       | External (8 Hrs Run time) |
|   |               | Internal (2 Hrs Run time) |

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### Wearable AC with Helmet

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# **Technical Specifications** Helmet

| Description                                  | Result                                | Standard (IS-2925)                          |
|--|---------------------------------------|---|
| Material – Clause 3                          |                                       | -   |
|  | HDPE (Conforms)                       | Non-Metallic Material                       |
| Harness                                      | Conforms                              | Headband is anti-concussion tape etc,       |
|  |                                       | shall be sweat resistance, non-irritant     |
|  |                                       |   |
| Size - Clause 4                              | 540 – 590 mm, Size adjustments marked | 520 –600 with size adjustments marked       |
|  | on helmet (Conforms)                  | on helmet                                   |
| Construction - Clause 5                      |                                       |   |
| Shell - Length of brim                       | 8.8 mm (Conforms)                     | Not less than 6 mm                          |
| Length of peak                               | 42.8 mm (Conforms)                    | Not more than 50 mm                         |
| Ventilation holes                            | Not applicable                        | Not less than 6 mm                          |
| Harness - 5.2                                |                                       |   |
| Aleald Band                                  | 30.6 mm (Conforms)                    | Width 30 mm minimum                         |
| Distance of Headband from shell              | 6.1 mm (Conforms)                     | 5 mm minimum                                |
| Cradle – 5.2.2                               |                                       |   |
| Head band anchoring points                   | 4 No.s (Conforms)                     | Minimum of 4 No.s                           |
| Width of strap                               | 19.6 mm (Conforms)                    | Minimum 5 mm                                |
| Clearance between top of wearers head        | 31.2 mm (Conforms)                    | Not less than 30 mm                         |
| and top of helmet crown at the smallest size | ze                                    |   |
| Depth to fit                                 | 99.2 mm (Conforms)                    | Minimum 80 mm                               |
| Chin Strap or nape strap – 5.3               | •                                     |   |
| Chin strap – attached to shell               | 19.1 mm (Conforms)                    | Minimum of 19 mm                            |
| Fastening device to adjust & maintain        | Conforms                              | Should have fastening device                |
| tension                                      |                                       |   |
| Nape strap – 5.3.2                           |                                       |   |
| Depth as per 5.3.2.1                         | 123.5 mm (Conforms)                   | Minimum 115 mm                              |
| Lamp bracket – 5.4                           | Not Applicable                        |   |
| Cable clip – 5.5                             | Conforms                              | Shall be made of plastic/ suitable material |
|  |                                       | & fixed to shell                            |
| Mass - 7                                     |                                       |   |
| Shell – 7.1                                  | 198 (Conforms)                        | Not more than 400 gms, without              |
|  |                                       | attachment                                  |
| Performance - 8                              | •                                     |   |
| Shock absorption resistance – 8.1            | Conforms                              |   |
| Penetration resistance – 8.2                 | Conforms                              | 7   |
| Flammability resistance – 8.3                | Conforms                              | IS – 2925 Test report is attached           |
| Electrical resistance – 8.4                  | Conforms                              |   |
| Water absorption – 8.5                       | Conforms                              | 7   |
| Heat resistance – 8.6                        | Conforms                              | $\dashv$                                    |

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# **ActivCooling™ Unit**

| Air Flow           | 4 CFM or 114 Litres/Minute     |
|--------------------|--------------------------------|
| Technology         | Solid State Cooling            |
| Material           | Bismuth-Tellerium Bi-Metallic  |
|                    | Semiconductor                  |
| Cooling Capacity   | "22 W High Mode 15 W Low Mode" |
| Heating Capacity   | 22 W Heating                   |
| Operating Voltage  | 12V DC                         |
| Interface Material | Al1060/Al6063 Anodized         |

# **Battery**

| Capacity            | 2600 mAh for internal battery |
|---------------------|-------------------------------|
| Nominal Voltage     | 11.1V                         |
| Full Charge Voltage | 12.6V                         |
| Cut off Voltage     | 9V                            |
| BMS                 | Included                      |
| Cell Type           | 18650 Li-ion                  |

# Charger

| Charger Output | 12.6V 5A CC/CV    |
|----------------|-------------------|
| Charger Input  | 90V-240V AC ~50Hz |

## **Visor**

| Size          | 8 x 15.5 inch (S/M/L) |
|---------------|-----------------------|
| Thickness     | 1.5 mm                |
| UV Protection | 0.9999                |
| Color         | Transparent/Tinted    |
| Material      | Poly Urethane (PU)    |

# Weights

| Category                   | Weight(gms) |
|----------------------------|-------------|
| Helmet (Shell + Harness)   | 326         |
| Helmet with Cooling System | 614         |
| Power System               | 107         |
| Auxiliary                  | 12          |
| Total Weight               | 733         |

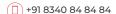
# Weights

| Accessories                 | Weight(gms) |
|-----------------------------|-------------|
| Visor Clear or Tinted       | 56          |
| Internal Battery * Helmet   | 156         |
| Mounted with 2-hour runtime |             |

# Regulations

| ISO                 | 9001:2015                              |
|---------------------|--|
| Standards           | IS- 2925, EN 397                       |
| Warranty            | 01 (One) Years                         |
| After Sales Support | After the 01 (One) year warranty       |
|                     | aperiod, the manufacturer will provide |
|                     | After Sales Service for 01 (One) Years |













# **ActivCooling™**

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#### What Does The Box Contain?

- 1. ActivCooling™ Helmet
- 2. Internal or External Battery
- 3. Fast Charger
- 4. Visor
- 5. User Guide

# **Maintenance / Cleaning**

The safety helmet should be kept in good condition and cleaned regularly using warm water only. No detergent or soap should be used. A brush can be used to remove stubborn marks from the shell. Before washing, the harness should be removed from the shell to facilitate cleaning. Using solvents, very hot water, or harsh abrasives is not recommended. Worn or damaged headgear parts should be replaced immediately, and damaged shells (splits, cracks, dents, or excessive abrasion, discoloration, or weathering of the shell surface) should be discarded.

### Lifetime

ActivCooling™ System has an average in-use life of up to 11,000 Hours. Excessive wear and tear can considerably reduce the lifespan of the product. Based upon industrial field tests, in general terms, an industrial safety helmet should be replaced every three years from the date of issue, and the harness should be replaced every 2 years. Harsh conditions and/or rough usage dictate that a helmet may be replaced sooner.

#### Storage

Storage is part of ongoing care and maintenance but is so often overlooked. Care should be taken to ensure that your safety helmet when not in use, is stored appropriately and not exposed to possible damage.

It can be stored and transported in their original cartons at ambient temperature (0 °C to +30 °C) in dry conditions. Any direct or indirect spillage of corrosive chemicals or water should be avoided. Do not store in direct/high heat or sunlight as this may distort the shell. Storage near inflammable substances should be avoided.

# Disposal

Most components of this assembly can be recycled. Recycle symbols are present on both the shell and harness assemblies. If the product is to be disposed of, it should be dissembled and disposed of as solid waste. Please see local authority regulations for disposal advice and locations. Some models contain a Li-ion battery and should NOT be thrown into fire or disposed of by incineration. E-waste disposal rules are to be followed as per local laws and regulations for the safe disposal of the product.

## **Test Reports**

As per EN397:2012 and IS2925:1984

# **Helmet Is Best Way To Have A Wearable AC**

The human head is the thermal centre of the body and is highly sensitive to temperature changes. While under physical or mental stress, the human head tends to overheat leading to a lack of focus, irritation, and confusion. Additionally, the use of traditional helmets also tends to overheat the head.

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