

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)
	Yellow (Hat) & Red (AC)
Visors	Tinted
	Clear
Battery	External (8 Hrs Run time)
	Internal (2 Hrs Run time)





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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 on helmet (Conforms)	520 –600 with size adjustments marked 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		
Head 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 and top of helmet crown at the smallest size	31.2 mm (Conforms)	Not less than 30 mm
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 tension	Conforms	Should have fastening device
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	IS – 2925 Test report is attached
Penetration resistance – 8.2	Conforms	
Flammability resistance – 8.3	Conforms	
Electrical resistance – 8.4	Conforms	
Water absorption – 8.5	Conforms	
Heat resistance – 8.6	Conforms	





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ActivCooling™ Unit

Air Flow	4 CFM or 114 Litres/Minute
Technology	Solid State Cooling
Material	Bismuth-Tellurium 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	10,400 mAh for external 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
External Battery * Waist Mounted with 8-hour runtime	900

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





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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 disassembled 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.

