

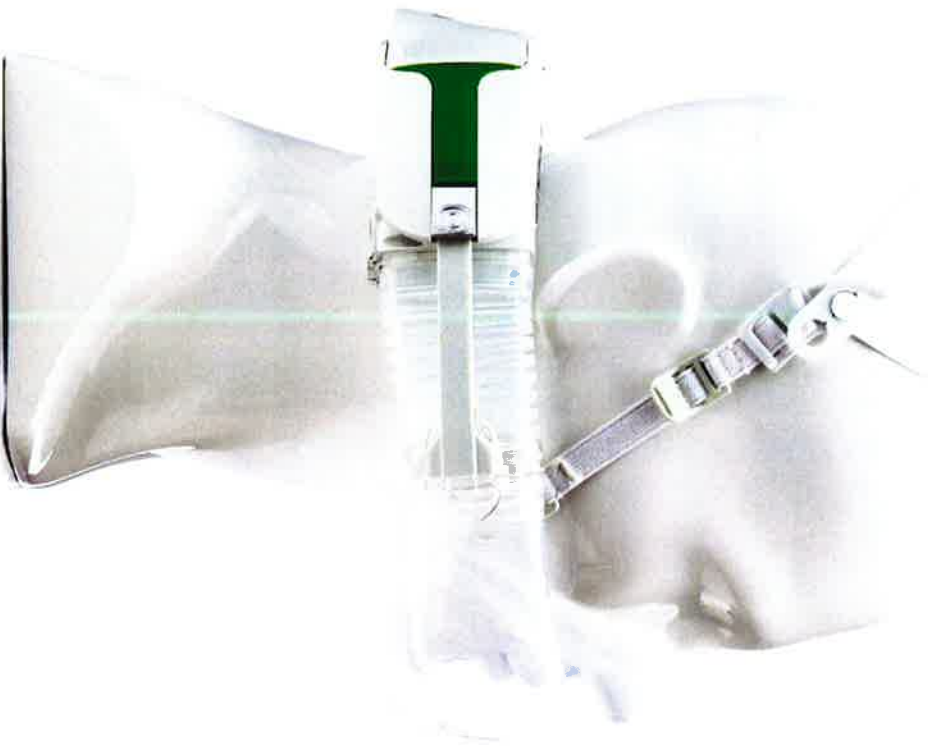
Cleanspace®

Revolutionary Respiratory Protection

Respirators designed by biomedical engineers.

INNOVATION IN HEALTHCARE

2018 | CLEANSPACE HALO



CLEANSPACE TECHNOLOGY

Cleanspace[®]
HEALTH & SAFETY

CLEANSPACE[®] IS A BREAKTHROUGH TECHNOLOGY FOR PERSONAL PROTECTION

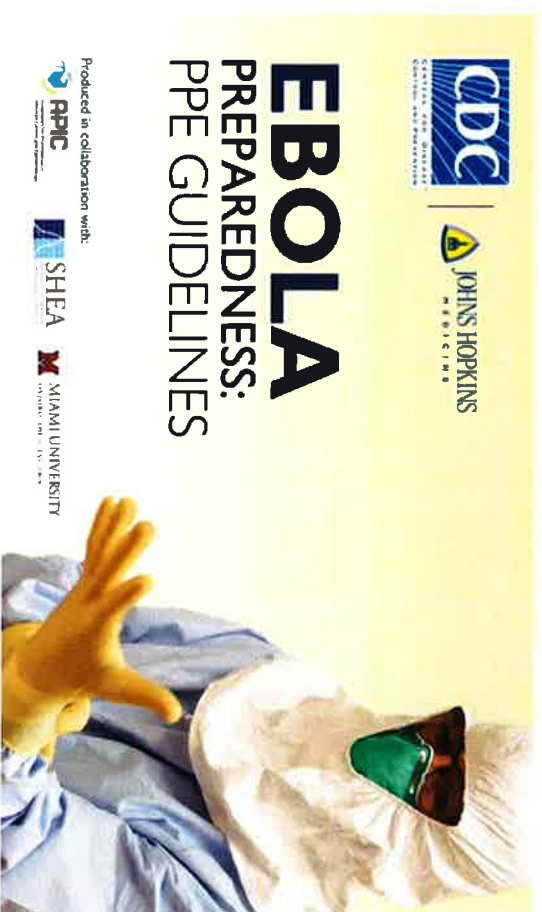
- Founded (2009) by a team of biomedical engineers from ResMed (M/Cap US13B. Leader in medical CPAP devices)
- Patented technology. Compact, lightweight and easy to use. Significantly improves protection
- Motor Design. Flow & pressure control specialists.
- International approvals including NIOSH, CE Mark, IECEX/ATEX/ETL (intrinsically safe), IP Rated..
- Manufacturing ISO9001 in Sydney Australia and exporting to 30 countries



DELIVERING BETTER PROTECTION TO HEALTHCARE

SIGNIFICANT ISSUES WITH TRADITIONAL RESPIRATORY PROTECTION

- Ebola, SARs, MERS epidemics highlighted major issues
 - **Protection:** Fit, complexity & training
 - **Productivity:** Discomfort & heat
 - **Cost:** Stockpiling & shortages
- In 2015 CDC & WHO led the call for better RPE and innovation.
- Heightened risks from Bioterrorism and chemical warfare
- Approach to respiratory protection in healthcare hasn't changed in 20 years



- In US
- 18 million HCW in 5,500 hospitals
- Estimated in a pandemic 8 billion N95 masks
- Currently 60 million N95 stockpiled

HEALTHCARE SECTORS

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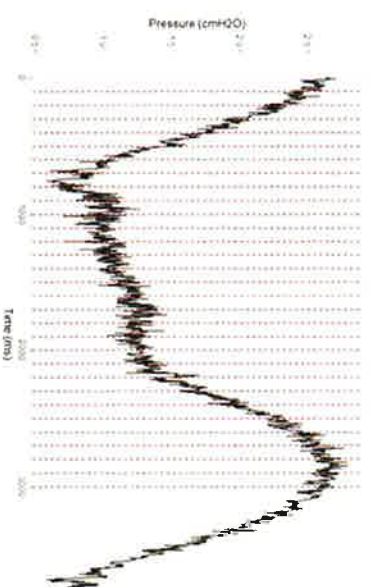
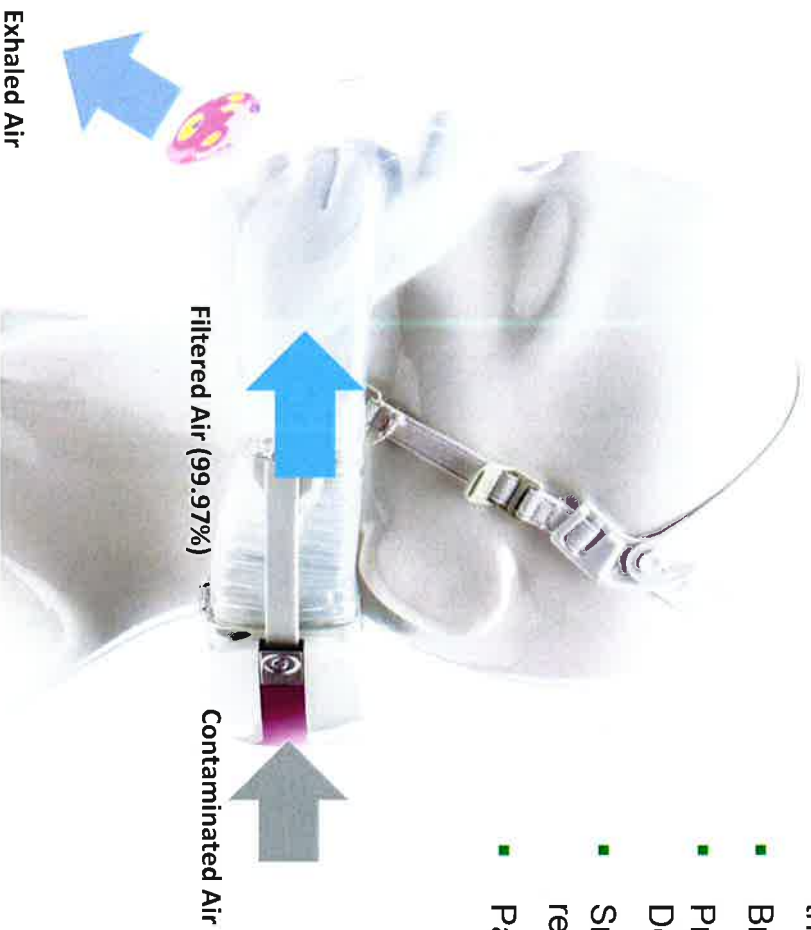
PROTECTION AGAINST FOR BIOHAZARDS

- Hospitals
- Laboratories
- Pharmaceutical manufacturing
- Bio-material handling
- First responders & Law enforcement



CE

- Power Unit 350g (11b) (lightest PAPR)
- Pressure sensors and algorithm continuously pressurise the mask
- Breath responsive. Sampling/adapting 100 times per sec
- Proprietary micro-turbine toroidal motor: (quiet, efficient). Delivers high pressures and flows
- Smart lithium polymer battery: small, 8hrs run time and fast re-charge.
- Patented modern design: Compact, light, ergonomic



COMPETITIVE ADVANTAGE

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PROTECTION | COMFORT | DEPLOYABILITY



CLEANSPACE

- HIGH PROTECTION APF 50
- LIGHT, T, SMALL & EASY TO USE
- REDUCES HEAT STRESS
- MOBILE & PORTABLE
- LOWER COST OF OWNERSHIP
- REUSEALBE

Traditional Respirator Offerings



- **Light & simple**
- Low protection APF 10
- Low compliance
- High disposable costs
- Moisture/CO2/heat
- Breathing resistance
- Stockpile constraints

80%
market



- **High Protection APF 25**
- Airflow
- Reuseable
- Heavy, bulky & complex
- High costs
- Large inventory required
- Poor equip compatibility

20%
market

PRODUCT COMPARISON

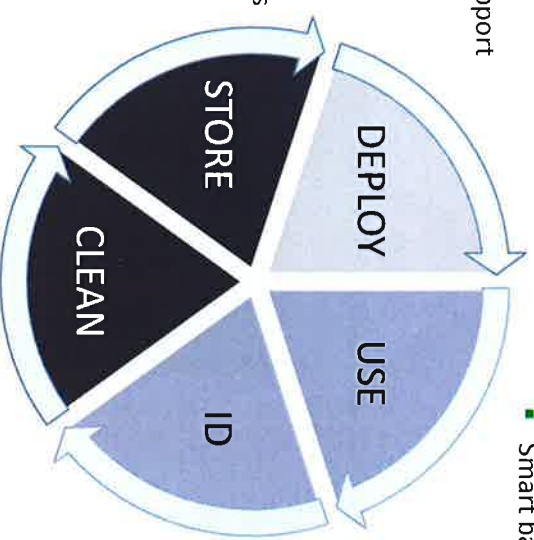
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	Cleanspace PAPR	PAPR Belt (Loose fitted)	APR Elastomeric Half	APR Disposable N95
APF (OSHA)	APF 50 (half) & 1000 (full)	APF 25	APF 10	APF 10
Re-useable / Disposable	Re-useable	Re-useable	Re-useable	Disposable
Weight (unit inc battery, hoses)	350g	1.5kg	200g	20g
Communication	Good. Transparent mask	Good. Transparent visor	Very poor - Intimidating	Poor – mouth covered
Equipment Parts (exc filter)	Parts (2): Face piece & Power Unit	Parts (4): Head top, hood, Belt, hose, battery pack	Parts (2): face piece & heard harness	Single part
Comfort & breathability	Fresh air. Cooling. No resistance / Light.	Fresh air. Cooling. No resistance / Heavy & bulky	Hot. Breathing resistance. Fogging. Tight. Hides face	Light / Hot. Breathing resistance. Fogging
Battery/charge	Up to 9 hrs / 2hrs	8 hrs / 4 hrs	NA	NA
Alarms	Yes	Yes	No	No
Cleaning Time	10min	20min	15min	NA
Don/Doif	Simple/fast	Complex	Simple/fast	Simple/fast

FULL SYSTEM APPROACH

- High protection .99.97% filter efficiency, APF 100 (Half) & 500 (Full) (OSHA)
 - Minimum Protection Factor 1000 (10 times N95 disposable)
 - Certified CE Mark EN12942; AS/NZS1715; IP Rated 66
 - AirSensit™ monitors mask pressure 100 times/sec
 - Portable & transportable: Lithium polymer battery
 - Reliable, Shock proof and 3Yr Warranty
 - Assured and fast fit testing (Avg FF 3,000)
 - Training materials and product specialists support
- Good adoption & compliance:
 - Light (350g), comfortable and easy to use
 - No hoses, cables or belts mounted battery packs
 - Fresh air: no fogging or heat
 - Latex free: Silicone masks. Compatible with stethoscopes
 - Communication; Quiet motor and transparent mask
 - Smart battery: 9 hrs run time. Recharging < 2 hrs. Top up charges



- Low inventory and small space requirements
 - 'Ready to go' Storage Station holds charged units
 - Reusable and suitable for pandemic readiness
 - Modular and scalable for high volume use
 - Annual service available
 - Short recharge and Equip Test Protocol for commissioning and re-deployment
- Good fit with recommended PPE ie gowns, hoods, visors
 - IP Rated 66 for decontamination showers
 - Minimal contamination: worn away from the work field
 - Small surface area for fast and reliable disinfection wipe down
 - Few parts & compact for local or centralised cleaning options
 - Medical grade materials suitable for standard disinfection protocols
- Power Unit Colour Panels: mark zone use or individual systems in 9 colours – Blue, Green, Yellow, Orange, Pink (light), Pink (Dark), Purple, Silver
 - Mask ID Badges: used to quickly ID mask sizes or personal equipment (3 colours – Blue, Green, Yellow)
 - Mask 'decals': improve patient interactions

FULL SYSTEM PRODUCTS

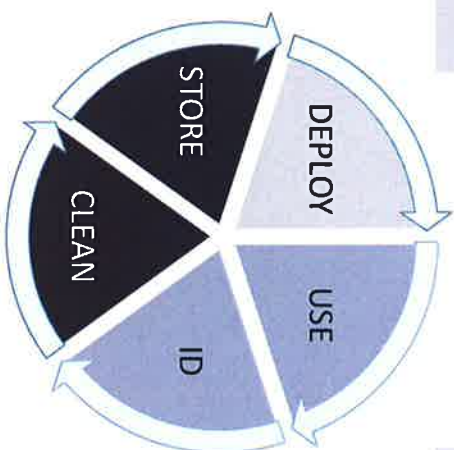
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Certifications	On request
Data Sheets	Website
Training Aids: Videos, Quick Start, Posters	Website & on request
CleanSpace Product Specialists	Book training today
Portacount Half Mask Fit Test adaptor	PAF-0025



CleanSpace Halo Power Unit	CS3000 (exc mask)
CleanSpace Half Masks	CS3003(s) CS3004(m) CS3005(L)
CleanSpace Full Face Mask	CS3006(s) CS3007(M/L)
CleanSpace P3 HEPA Filter 3pk	CS3002
Head Gear Cushion	CS3012

Storage & Charging Station	CS3014
Cleaning & Storage Plug	CS3021
Annual Service Check	On request



Power Unit ID Panels (Pk 6) – B, G, Y, O, P, Pp, S	CS3013
Mask ID Badges (Pk 10) – B, G, Y	CS3015
Mask 'Teddy Bear' Decal (Pk 2)	CS3016



Cleaning & Storage plug	CS3011
Pre-filter & cover (disposable)	PAF-0058
Hood with visor	PAF-0097
Non-alcoholic wipes (bx 500)	PAF-0025

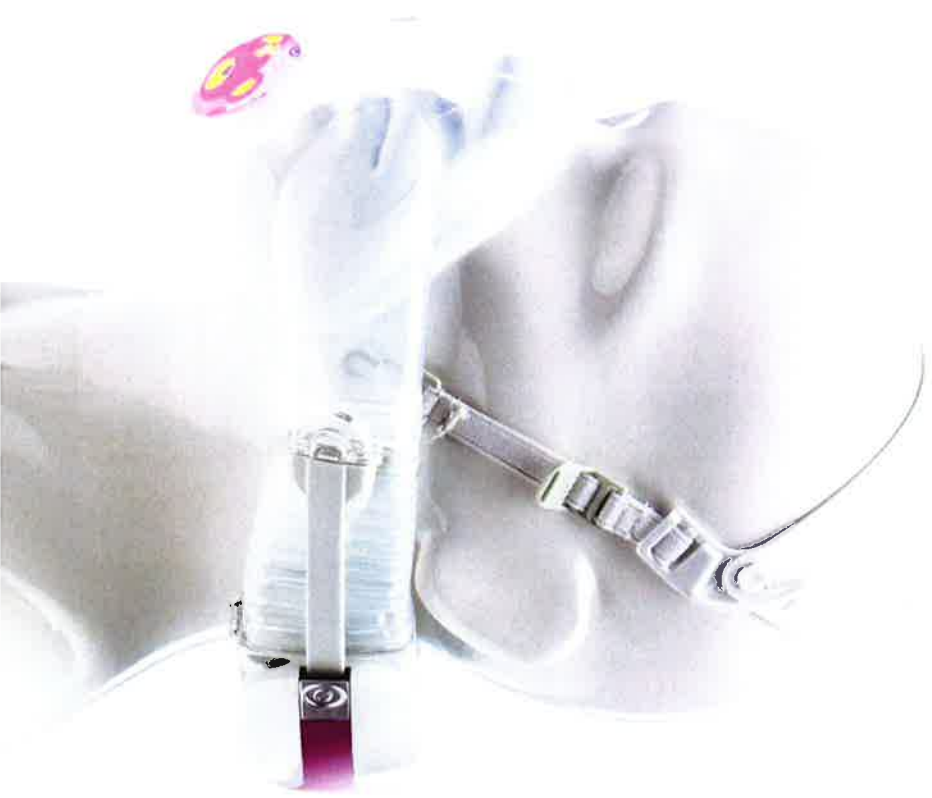


IDENTIFIIFIABLE. PERSONAL

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ACCESSORIES TO IMPROVE MASK USE

- Improves patient/carer interactions
- Personalise the devices for wearer adoption
- Code the mask for fast size selection
- Code the unit for use in restricted or dedicated areas



CASE STUDY: GENERAL HOSPITAL

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- General Hospital (1,400 beds)
- Previously using 3M Versaflo and N95
- General (influenza, TB) and pandemic readiness

PROTECTION & DEPLOYMENT

- On the ward. Part of the pandemic readiness plan
- Emergency, community care, isolation, theatres
- Staff trained and fit tested in 7 days
- 100% passed. Min APF 1000 (10 times > N95)
Avg APF 5,000
- Integrated with existing PPE & cleaning protocols

HEALTHCARE STAFF FEEDBACK

- Light and easy to use. Modern design
- Comfortable (fresh air) and no fogging
- No belts. Not heavy or cumbersome
- Fit with existing PPE (hoods, gowns and visors)
- Liked the mask personalization



THE FUTURE OF RESPIRATORY PROTECTION

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