

# An introduction

executive summary





The Air<sup>3</sup> acoustic pods are designed

# to provide private space wherever you need it

In open plan workspaces. In comparison to built-in, Custom, or partitioned office solutions, Air³ is much faster, cleaner and simpler to commission.

They can be assembled, dis-assembled and readily re-located to be used again. As the pods are completely flexible the potential cost savings of relocating against other solutions are substantial. In virtually all partitioned cases, part or all of the structure would be scrapped.

- No need to move your Air Conditioning positions
- No need to move or add to your Sprinkler System
- · No need to change Lighting or Electrics
- No Buildings Work / Wet Trades / M&E Contractors
- 95% Cost savings in one move of a Pod's life







# A combination of high quality glass and soft acoustic panelling

# Modular System

Each Air³ pod is created from a series of flat packed components. These components can be transported to site in standard commercial vehicles, which means that in most cases they can be delivered right to the customer's doorstep.

Installation is then simply a case of moving the components on to the exact location within the building, where they are then assembled together. This process causes minimal disruption and requires no M&E or 'wet trades' such as electrical, decorating or construction services.

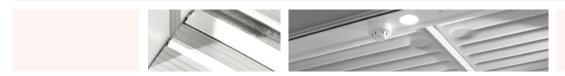
# Various Room Configurations

The Air<sup>3</sup> system solution provides a wide variety of room sizes with different shape options. This provides customers with choice regardless of the space available. The various sizes are also to cater for a variety of work situations such as small meeting room, large presentation rooms, video-conferencing or drop-in private workspace.

# Flexible Space

Air³ pods can be positioned anywhere within a building as long as there is a power/data connection point, as they are NOT a part of the structure of the building. They can be re-located when the business needs change or even re-configured if a different size room is required.

# Air<sup>3</sup> Design Features



Air<sup>3</sup> pods have been designed to remove the complexity that comes with commissioning fixed offices.

Not only can they be installed quickly, but the whole project management processes are much more straightforward. Choose the version you require, decide where you want it and Orangebox will deliver and assemble it for you.

# Integrated Services: "Plug & Play"

Each Air³ pod comes with lighting, power sockets and an air circulation fan (if specified) fully integrated. When assembled, it only needs to be connected to a mains power source using a standard 13A plug (or country equivalent). These integrated services have been specifically designed to optimise comfort and convenience for the user. The LED lighting system and fan automatically activate when a person enters the pod, and also automatically turn off after the pod is vacated.

# **Roof Options**

Air³ offers both fixed roof and unique opening/closing roof options. The opening roof provides an effective solution for sprinklered buildings and has the added benefit of releasing warm air and CO2 from the room, allowing fresh air to enter. The roof is also controlled automatically through the PIR sensor.

# **User Control**

A control panel provides manual control for the different lighting levels and for fan speed. Those pods with an opening roof have manual control to fully open 90° / partially 10° / fully close.

# **Acoustic Control**

The primary function of an Air³ pod is to provide the user with acoustic privacy. A combination of sound absorption, insulation and a clever "sealed gap" construction creates the perfect balance for a flexible acoustic meeting and workspace. Effective sound privacy is achieved whilst maintaining natural sound for conversation inside the pod.

# Accessories & Finishes

Air<sup>3</sup> can be furnished with a variety of seating and tabling products to suit various workspace requirements. Whiteboards and monitor brackets can also be directly integrated into the Air<sup>3</sup> structure. Air<sup>3</sup> pods can be customised with a range of fabric choices on upholstered panels and manifestations on the glass panels.

# Process



# Specification

The Orangebox sales and technical support teams can work with you to help choose the Air³ pod that best meets your needs. A Configuration Sheet, supplied by your Orangebox sales representative, will need to be completed and sent to customer services with your order.

# Delivery & Installation (UK)

Orangebox will then arrange for its specialist installation teams to deliver and install the Air<sup>3</sup> pods at a time that is convenient - whether in or out of working hours. There are a number of processes that we have put in place to ensure that your Air<sup>3</sup> products are delivered on time and installed safely.

### Install Questionnaire

This document, completed before install, identifies key aspects of the building, such as site contact, access, lifts, stairs, installation time etc.

### Installation

Specialist Install teams ensure Air³ pod(s) components are brought onto site safely and then professionally assembled. There is a 'position confirmation' document to ensure the correct positioning of an Air³ pod at point of assembly within the office/workspace.

# **Customer Sign-Off**

Once the pods are built, the installation engineer will complete a checklist with the customer to ensure a satisfactory finished installation. He/she will also give basic operating instructions to ensure the customer understands the controls.

# Global Delivery & Installation

Sea shipping containers and glass crates have been specially designed to house the Air<sup>3</sup> components for transporting abroad. Depending on location, we have local specialist installation teams to ensure the same high quality experience when a pod is installed overseas.



Specification [how to specify your pod]



# **Configuration sheets**

# Required information before pods are installed

### 1. Fabric Spec - Pod Exterior

Choose your fabric from the standard ranges and colour choice for each of the 5 Fabric Panel Layers.

### 2. Fabric Spec - Pod Interior

Choose your fabric from the standard ranges and colour choice for each of the 5 Fabric Panel Layers.

### Table Specification

Choose from Media tables or work tables, specify leg and table top finishes along with integrated power options.

### / Manifestations

Choose your glass finish and specify manifestation requirements.

### 5. Power Accessories

Relating to power / data spec, internal whiteboards, monitor brackets.

### 6. Special Requirements

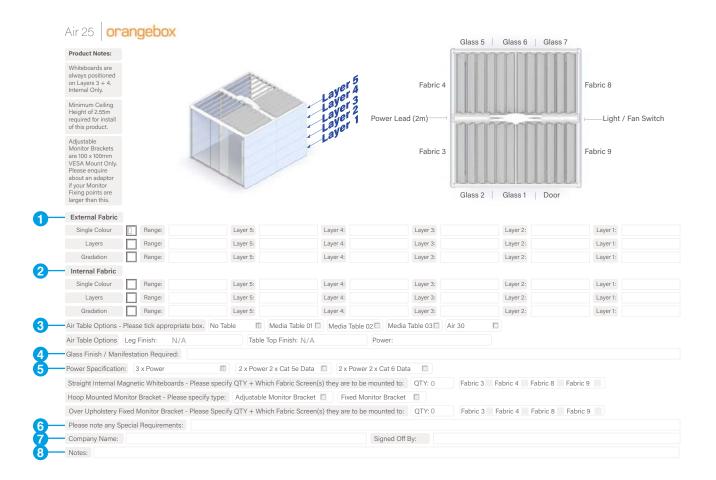
Please note any additional requirements. Please note that this will have to be checked with our order team prior to processing.

# 7. Your Company Name

### 8. Additional Information

Any other additional information about your order.

If there are options or non standard features being requested please discuss with the technical support team, they will be able to advise on the feasibility of the request and impact on cost an delivery.



# Recommendations

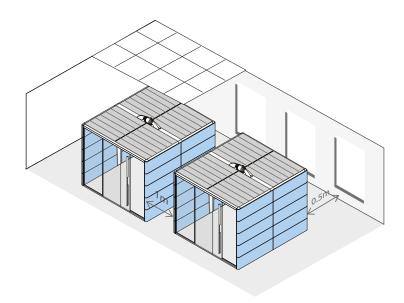
# Air<sup>3</sup> does all the hard work for you

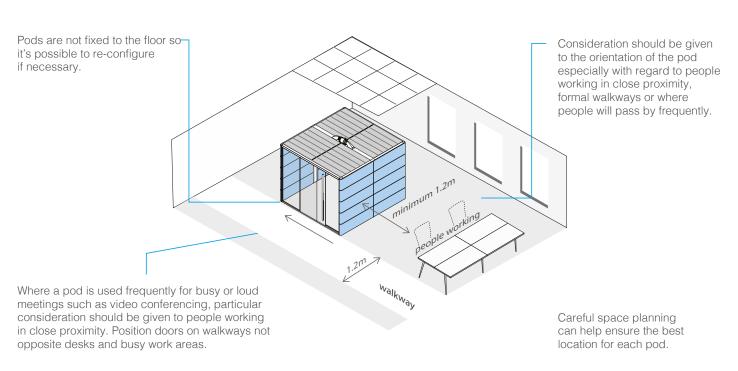
For High Acoustic Separation - Minimum of 1m Gap Between Pods, this is recommended when pods are being used for: Video Conferencing Sessions, Teleconferencing & Confidential Meetings.

Pods are generally designed to work as individual flexible room solutions. Where more than one pod is being used in a workplace, it is generally recommended that they are spaced apart a minimum of 1m - to allow access to the outside fabric or glass panels for cleaning, and to minimise soundtransference between pods.

Where pods are positioned glass to glass it is recommended that frosted manifestations are applied to the relevant glass panels to provide visual privacy between pods. See examples on PG 2.5.

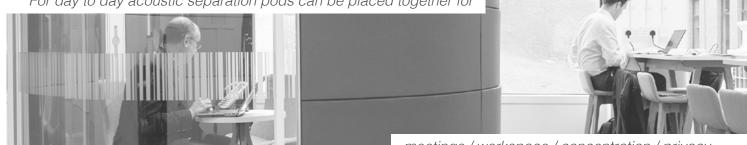
Please note that the fabric and glass positions are specifically set to optimise acoustic performance/sound balance. The positions cannot be altered.





# **Acoustic Privacy**

For day to day acoustic separation pods can be placed together for

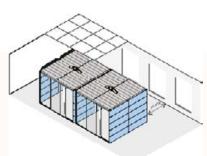


meetings / workspace / concentration / privacy

# Upholstery to Upholstery

Lowest acoustic privacy level

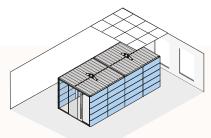
We recommend that there is a minimum of 0.5m clearing left behind the pods to allow access for assembly and cleaning.



# Glass to Glass

Medium acoustic privacy level

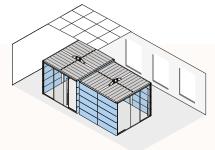
Glass will be located on the internal slots of the aluminium extrusions to facilitate install and improve acoustic performance.



# Upholstery to Glass

Medium acoustic privacy level

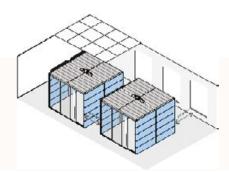
We recommend that the glass panels facing the upholstered panel are specified as full screen frosted vinyl for visual privacy.



# Pods spaced off by 3 feet 3 3/8 inch

Highest acoustic privacy level

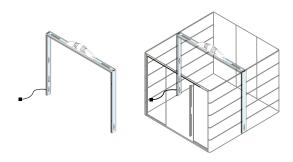
If higher acoustic privacy is critical to the client then a minimum gap of 1m is recommended. If the floor is uneven there is a high risk of gaps between pods.

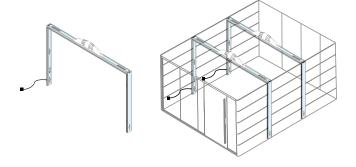


N.B The room to room acoustic separation will be affected when pods are butted up to each other. If higher acoustic privacy is critical to the client then a minimum gap of 1m is recommended. If the floor is uneven there is a high risk of gaps between pods.

# **Service Hoops**

The service hoop contains all the electrical services such as power, lighting and airflow

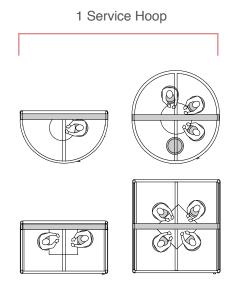


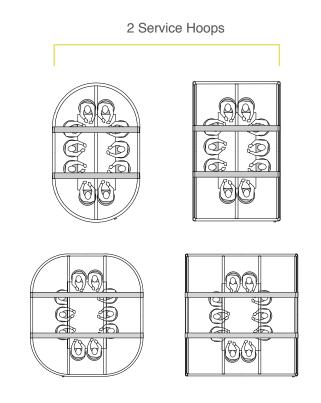


2.8m Long Service Hoop Shown with optional air circulation fan.

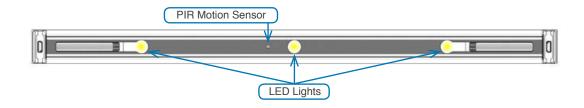
2m Max Visible Power Lead. BS 6396:2008 4.1m Long Service Hoop Shown with optional air circulation fan.

2m Max Visible Power Lead. BS 6396:2008

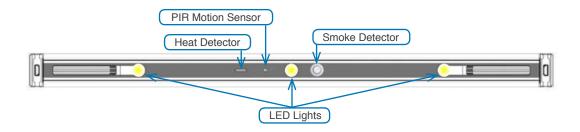




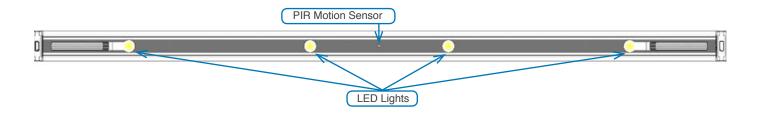
# 2.8m Service Hoop - Fixed Roof



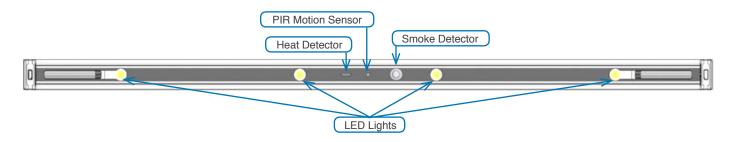
# 2.8m Service Hoop - Opening Roof



# 4.1m Service Hoop - Opening Roof

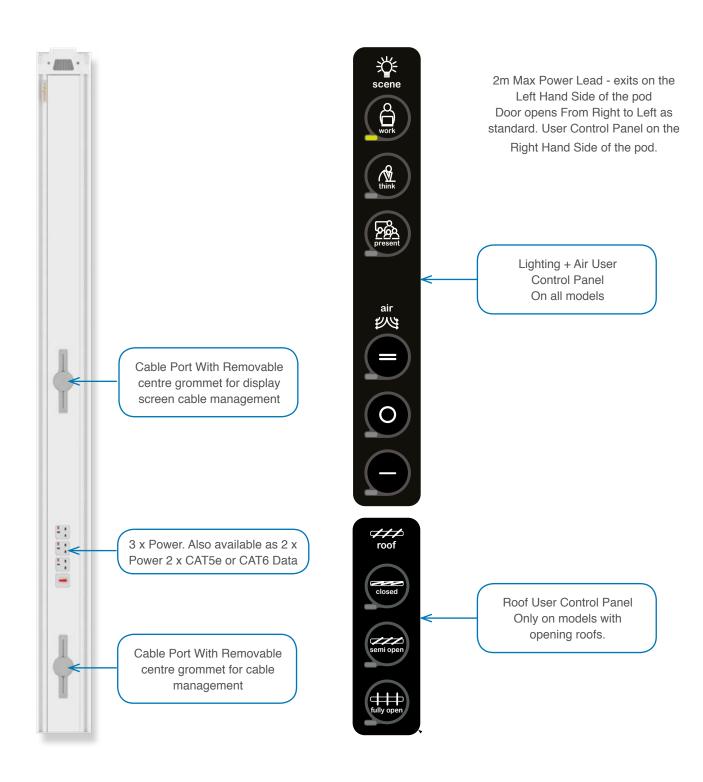


# 4.1m Service Hoop - Opening Roof

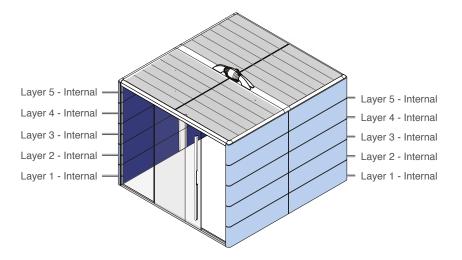


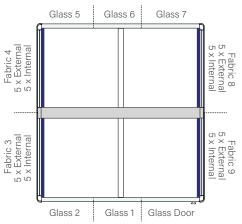
# **Panel & Port**

Control panels allow you to manage scene, air and roof settings.



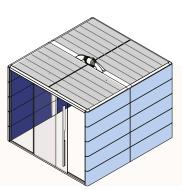
# **Example: Air 25**





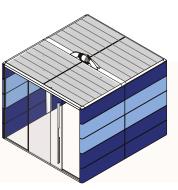
# Plain

You can specify 1 Single Colour, alternatively you can have 1 colour internal and a different colour external.



# Layers

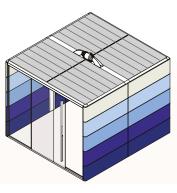
Layers 3 + 4 Shown in a different colour. Again, you can specify this differently internally to externally. Even selecting different layers.



# Gradation

Choose from Orangebox's standard gradation colours.

Available in Gabriel Europost 2+ Kvadrat Divina 3.



# **Example: Air 25**

On all pods, the door opens from right to left as standard.

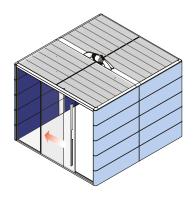
# Square Pods

Doors can be ordered to open from left to right as a special.

### **Curved Pods**

Doors can be ordered to open from left to right as a special. However new parts are required, thus creating a cost increase and a longer lead time.

Please note that when specifying the door to open from left to right, Orangebox recommend that the hoop power is switched round to the right hand side of the pod.



# **Example: Air 12**

4 Moulded Roof Panels



### 4 Opening/Closing Roof Panels



# Air Fan

An air fan is always recommended when you specify a pod. One air fan unit per service hoop = enough air changes for4 people - 10L/s Per Person



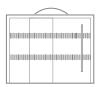
# **Integrated Accessories**

Tabling: Available with power & data options Whiteboards/Monitor Brackets: The table must be mounted the same side as the power inlet when integrating power sockets in the table.



### Manifestations

It is a site building standard / DDA requirement that all glass panels including the door have manifestations for safety visibility.



# Door Lock

A specific sourced and engineered lock solution is available on all pod doors on request. This request MUST be placed at point of order and CANNOT be retro-fitted without ordering a new door.





# Product range [standard products]



# **Dimensions**

2.02m Wide1.51m Deep2.35m Tall - Including Air Circulation Fan

# Weight

336.1 kg

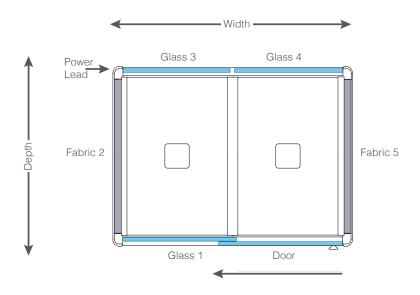
# Power Usage

Occupied - 33W

Not Including any plugged in external equipment

Unoccupied - 1W or Less Not Including any plugged in external equipment





# **Dimensions**

2.8m Wide

1.7m Deep

2.25m Tall - Excluding Air Circulation Fan & Opening roof

2.535m Tall - Including Air Circulation Fan & opening roof

# Weight

436.6 kg

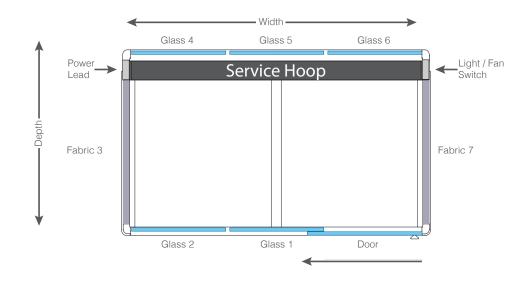
# **Power Usage**

Occupied - 100W

Not Including any plugged in external equipment

Unoccupied - 1W or Less Not Including any plugged in external equipment





# **Dimensions**

2.8m Wide

2.96m Deep

2.25m Tall - Excluding Air Circulation Fan & Opening roof

2.535m Tall - Including Air Circulation Fan & opening roof

# Weight

587.8 kg

# **Power Usage**

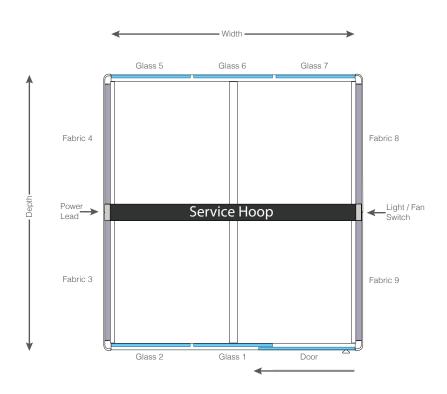
Occupied - 100W

Not Including any plugged in external equipment

Unoccupied - 1W or Less

Not Including any plugged in external equipment





# **Dimensions**

2.8m Wide

4.44m Deep

2.25m Tall - Excluding Air Circulation Fan & opening roof

2.535m Tall - Including Air Circulation Fan & opening roof

# Weight

770.2 kg

# **Power Usage**

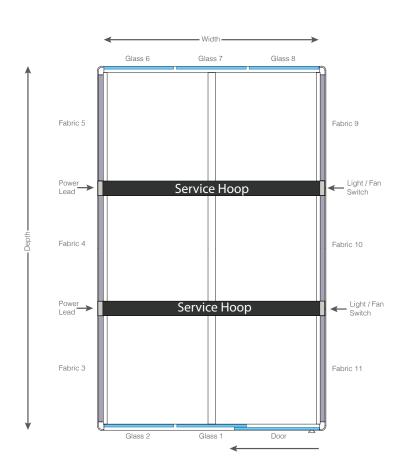
Occupied - 200W

Not Including any plugged in external equipment

Unoccupied - 2W or Less

Not Including any plugged in external equipment





# **Dimensions**

4.1m Wide

4.44m Deep

2.25m Tall - Excluding Air Circulation Fan & Opening roof 2.535m Tall - Including Air Circulation Fan & opening roof

# Weight

945.6 kg

# **Power Usage**

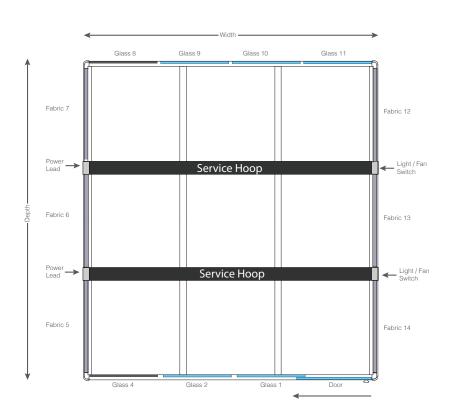
Occupied - 200W

Not Including any plugged in external equipment

Unoccupied - 2W or Less

Not Including any plugged in external equipment



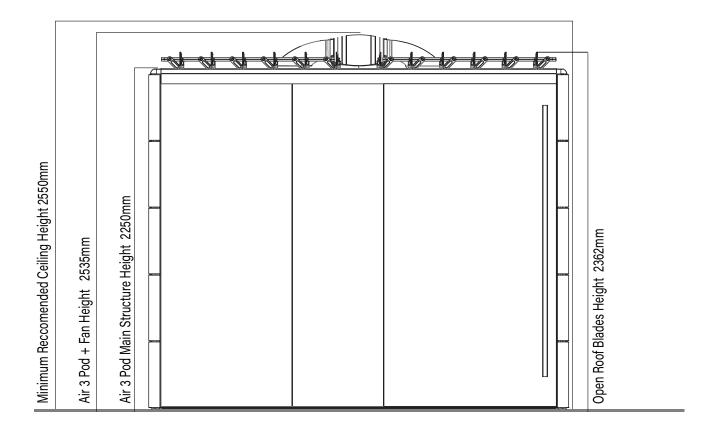


# Measurements

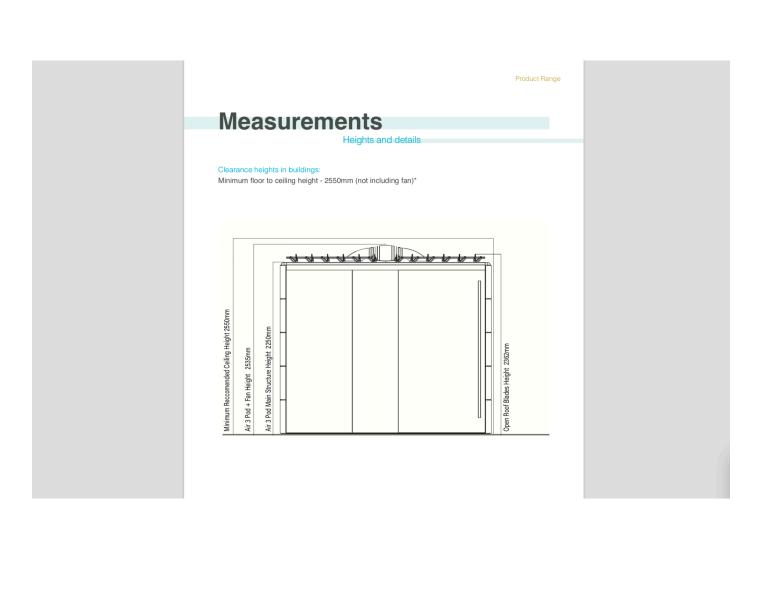
# Heights and details

# Clearance heights in buildings:

Minimum floor to ceiling height - 2550mm (not including fan)\*



<sup>\*</sup> minimum recommended ceiling height of 2550mm for installation of Orangebox pods.





# Acoustics [acoustic features]



Air<sup>3</sup> has been developed to maximize acoustic performance both in sound, suppresion and acoustic comfort, using the Pods.

# **Acoustic performance**

# Achieving clever acoustics to maximize privacy

The single figure (DnTw / STC) gives you an "out of the box" guideline to the "installed" performance of a pod with no extra site work required. This is equivalent to installing a partitioning system and taking into consideration all the weak points (connecting to the ceiling / floor / existing walls) and general losses due to poor door seals and holes created by ventilation and power sockets etc.



# IInstalled Average dB Rating:

Installed Single Figure Rating: 31dB STC / 33dB DnTw - Adjusted Figure fixed roof (opening roof / site conditions / floor type may vary the rating)

# Sound Absorption:

Reverberation time inside air3: 0:37 Sec (100Hz - 5000Hz) RT 60: 0.24 Sec (BB93 400Hz - 2500Hz) Sound Absorption Class - Inside air3: Class C (0.65aw) (NRC = 65%) Sound absorption Class - Roof Panels: Class D (0.50 aw) (NRC = 50%)

EN ISO 11654

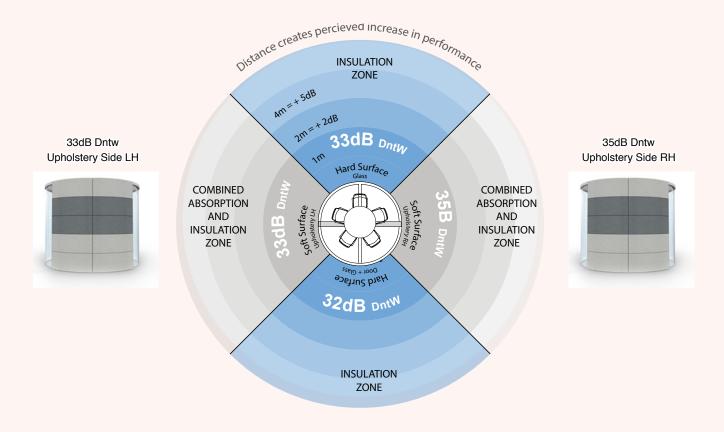
### Sound Insulation:

Glass Insulation Performance: 34dB Rw / STC. Laboratory test Upholstered Wall LH Sound Reduction: 33dB DnTw. Upholstered Wall RH Sound Reduction: 35dB DnTw. Glass Wall Rear Sound Reduction: 33dB DnTw. Glass Wall Front Sound Reduction: 32dB DnTw.

Site test scenario - 1m away

# **Acoustics**

# Balance between absorbtion & insulation



A single figure is not the whole story... the performance is actually better than that figure through the use of different materials such as glass, absorbent foams and insulating board on each side of the pod.

A single figure is an average reading taking into account any small localised weaknesses - This can be very misleading as some of these weaknesses are virtually undetectable by the human ear.

Air3 pods are NOT soundproof but are designed to maximise privacy through the use of high quality sound absorbing materials and clever acoustic engineering to fine tune frequency control and eliminate gaps between the main components.

The ceiling performance is controlled through highly engineered roof panels.

The floor will effect the performance - Use carpet to increase absorption, decrease reverberation and help control noise flanking and structure born sound.

# Sound frequencies

Achieving clever acoustics to maximize privacy

Air³ pods are a finely tuned balance between absorption (soft surfaces) and insulation (hard surfaces). Get this wrong and the pods are either too reverberant from too many hard surfaces (like a church) or too absorbent from too much softness (like a padded cell).

When a room is too reverberant (no softness), your voice will echo making speech clarity very poor and the natural reaction is to speak louder, creating a greater risk of sound loss through amplified sound.

When the space is too absorbent, it will deaden the sound so much that it is uncomfortable and even nauseous. Not enough insulation (less solid mass), means low frequency sounds (bass)will just escape.

Most common vowels = 200 - 600 Hz - Low to medium frequencies - hard to control

Consonants (k, b, d, m, f, s, p, t, sh, ch, etc.) = 1000 - 8,000 Hz. - High frequencies - easier to control / block due to their low sound energy. But can escape through the smallest gaps such as poor door seals.

"Clarity of speech requires good hearing of both consonants and vowels to comprehend a full conversation"

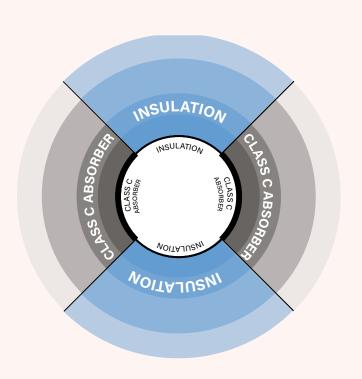
# **Acoustics**

# Balance between absorbtion & insulation

Highly engineered ceiling panels
CLASS D Absorbers internally



SIT PODS ON CARPET FOR BEST RESULTS Good quality carpet tiles & underlay = CLASS D Absorber to reduce re-verb & reduce impact on noise



Air<sup>3</sup> creates a perfect balance between reflective insulation and soft highly absorbent surfaces to control speech intelligibility...

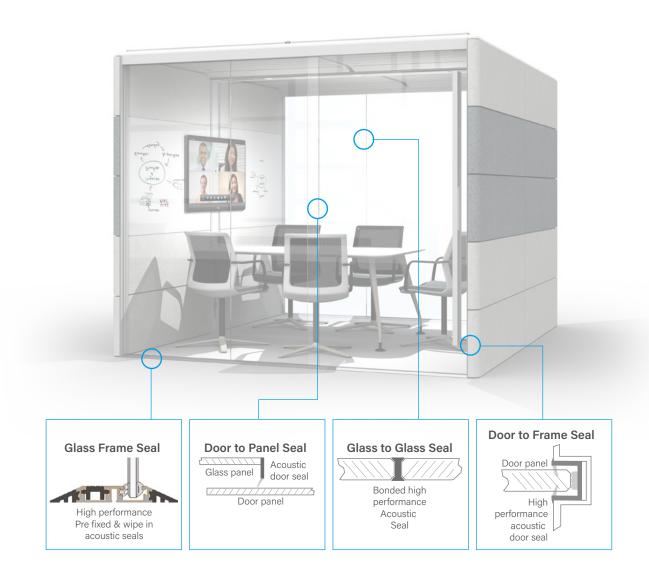
- Achieving a minimum 0.37 sec RT60 inside the pods (0.24 to BB93 school)
- Internal Class C absorbers create great speech clarity within the pods enabling you to lower your voice volume.
- Controls and blocks the consonants in human speech (1,000 8,000 Hz mid to high frequencies) Meaning you can't hear or comprehend consonants outside the pod, making it virtually impossible to understand a conversation.
- · Minimal sound loss through great levels of insulation such as the glass
- Outside Class C absorbers contribute greatly to reducing distracting noise and speech travel in the open plan office

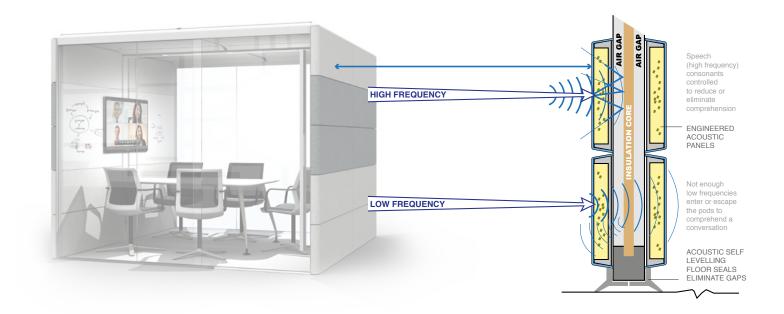
# The devil is in the detail

Highly engineered seals to close the gaps to gain greater control of the work environment.

8mm Glass provides the right balance between acoustics, quality and solidity.

Highly engineered acoustic fabric panels with acoustic foam cores are mounted both inside and outside the pod structure incorporating sound insulation. The combination of these Class C absorbers, mounted over the insulating board with an air gap enhances the acoustic performance of the pods both inside and out.





# **Acoustic Planning**

Simple Guidelines to better planning

Be mindful of where you place the pods and in what orientation Position in between work desks with a 2m gap or greater. Ideally position the absorbent upholstery sides to the work desks.

Placing the door side to the corridor not only makes sense from a functional viewpoint but also may help acoustically since any potential small sound loss from the door will be masked by corridor traffic and would not pose such a high privacy risk as its a 'transition space' rather than a 'focus space'.

### Always position pods on carpeted floors:

For best acoustic results, placing pods on carpet or carpet tiles will greatly help to reduce reverberation rates.

Placing pods on solid floors will greatly increase the reverberation and force you to talk louder inside the pod which will reduce the privacy level.

Placing pods on un-carpeted suspended floors can cause internal / external sound leak and could reduce the privacy level - (Commonly known as 'Noise flanking').

### Assess the ambient noise level:

Positioning a pod in an extremely quiet space may give a false impression of privacy level within the pods and there is a risk anyone working close by may hear parts of conversations.



A workplace that's too quiet is as bad as a workplace that's too noisy - There is a happy medium at around 50dB creating a non distracting masking effect.

Remember sharp or intermittent noises can be extremely distracting and cause loss of concentration and increased stress - Pods placed close to solid floor corridors are at risk of distracting footfall noise.

Low ceiling environments reflect sound quicker back to the workspace. Any sound loss risks being reflected back inside by installation in low ceiling offices and further treatment may be necessary on the building ceiling (where for instance there are hard concrete soffits) to minimise the reflection of sound. Such as adding acoustically absorbent suspended ceilings above the pods.

The opposite can also happen as ambient sound can be forced into the pods from low level hard building ceilings.

# Video conferencing & Teleconferencing

Be mindful of the volume and the tone speakers are set to. If necessary sit them on absorbent table mats and fine tune the base and treble settings for speech clarity within each room

Also be mindful of where TV speakers are positioned in particular on the walls - make sure they are always acing into the room and not outwards against the walls as this can reduce speech clarity, require the volume to be turned up and ultimately lead to sound escaping directly out of the walls.

# Pod positioning

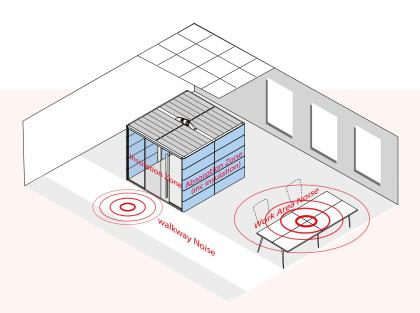
# Acoustic condiderations in the workspace

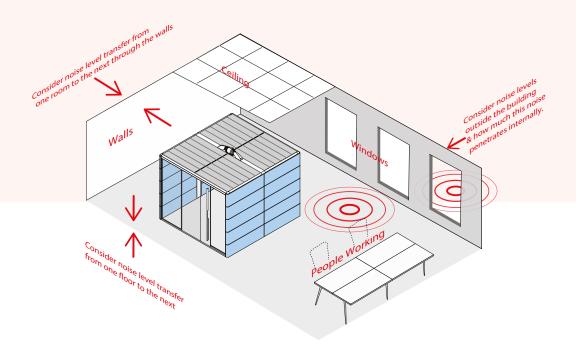
Is there a consistent Ambient sound level in the workspace? If YES - this will create continuity of speech privacy. If NO - then building integrated "sound masking" should be considered to create consistency of ambient sound levels to maintain privacy levels.

Hard floor can create distracting noise and can transfer through the flanking inside the pod.

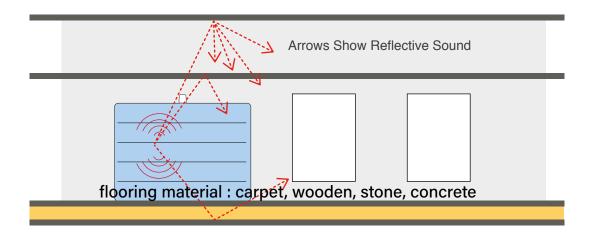
Ambient Noise level inside the building - especially around the outside of the pod need to be considered.

Too High 65dB - Poor Concentration
Too Varied 45 - 65dB - Poor Concentration
Too Low 45dB- Poor Privacy - Risk of small noise distractions





Ceiling Type
Suspended - More Absorption
Solid - More Reflection
High Ceiling - Sound Dissipating Away
Low Ceiling - Higher Risk of Sound Bouncing Back to Pod Roof



Flooring Type

Suspended - Risk of Noise Flanking - Travelling from One Space to Another.

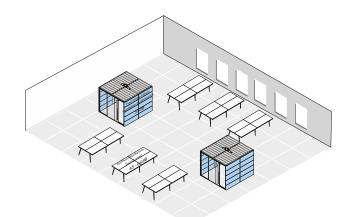
Solid - High Risk of Reflection

Carpet - Great absorption, Reduction in Footfall Noise & Better acoustic control

# **Ambient Sound Masking**

Ambient Sound creates natural sound masking & contributes to the privacy level inside the pods. Privacy Rating (BS 8233: 1999) = Single Figure of Pod + Ambient Level

```
33db + 45 dB Ambient = 78 dB
33db + 50 dB Ambient = 83 dB
33db + 55 dB Ambient = 88 dB
33db + 60 dB Ambient = 93 dB
33db + 65 dB Ambient = 98 dB
```



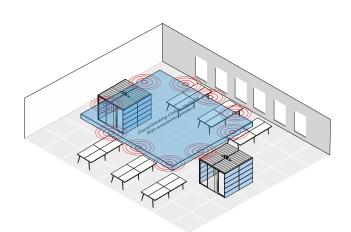
# Synthetic Sound Masking

Undetectable consistent rise in workspace ambient "Natural Ambient + 10 dB"
Rise in theoretical pod rating to 43dB.
Consistent privacy rating without distracting fluctuations.

33db + 55 dB Ambient = 88 dB

Table 4





"When selecting the performance rating of partitions, background noise levels need to be taken into account. BS 8233: 1999 encourages the principle of acoustic zoning, using the concepts of intrusive noise and privacy factors. Background sound can provide vital masking. The speech privacy potential (SPP) combines the partition sound insulation (installed Rw) with the background noise level, NR. The higher the resulting SPP, the higher the level of privacy between therooms (see table 4). Speech intelligibility defines the degree of privacy in a space. Intelligibility is affected by the background noise level and reverberant characteristics of a space."

# Exempt from FIS (formerly AIS) Acoustics guidelines

Where natural ambient sound is low or not consistent, sound-masking technologies provide an alternative consistent way of increasing acoustic control and privacy in open plan workspaces when building thick walled room constructions are neither possible or necessary.

High quality sound-masking is a finely tuned mixture of human speech frequencies (white / pink noise) which is virtually undetectable when continually running on a daily basis and can raise the acoustic rating of the pods by 10dB. Sound-masking can smooth out distracting fluctuations in office noise such as people with loud voices or equipments such as printers or phones ringing. When used with Orangebox pods, the overall result is complete continuity of acoustic privacy whilst retaining the flexibility benefits.



# Intergrated services [roof options all products except Air-20]



Air<sup>3</sup> can be specified with fixed or opening/closing roof panels (except Air-20 which only has a fixed roof).

# Simple Concept

The solution relies on a very simple concept.

"If you can open the roof, you take away the problem"

The engineering behind this concept however is complex and has taken over 3 years to develop and test when closed, the roof is designed to look beautifully anonymous, and when open the louvres create a unique and striking look to the pods.













# **International Patent Pending**

UK - 1302991.3 / 1516116.9 International - PCT/GB2013/05315 United States Australia Canada China EU Singapore Hong Kong



# In the event of a fire



# Stage 1

If a fire starts in the pod it will be detected by the heat detector.



# Stage 2

The detectors immediately cut the power to the pod releasing the spring in the actuators which drives the louvres open in just **8 seconds**.



# Stage 3

The open roof then allows the heat of the fire to release and set off the closest sprinkler heads.



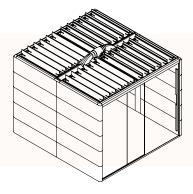
# Stage 4

The 74% open area allows enough even water ingress from the sprinklers (NO OBSTRUCTION), to control the size and spread of the fire within the pod. The roof blades have been proved (through sprinkler testing at BRE Global Fire Tesitng Facility) to greatly increase the even spread of water ingress against having no roof blades at all.

## Day to Day function

#### Static Mode

When the pod is unoccupied, the roof is "always open".



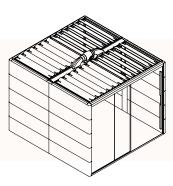
#### In Use Mode

When you walk into the pod, the Passive Inferred sensor (PIR) senses movement and closes the roof to create acoustic privacy.



#### Manual Mode

When the pod is occupied, it is possible to select either 10° or 90° open position for enhanced airflow.



#### Meeting Over Mode

When the meeting is finished and the room becomes unoccupied, the PIR turns the power off after 15 minutes and the roof automatically opens.



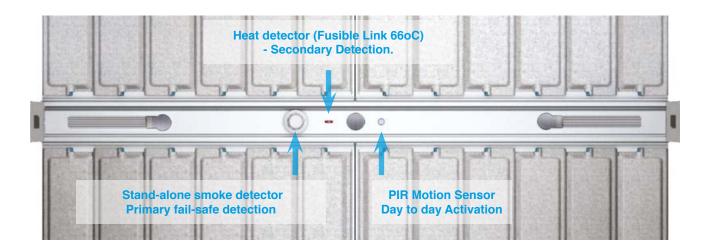
## A failsafe system

#### Explaining the mechanics of the roof solution

The opening roof solution has been specifically developed as a "6 step" fail-safe system to conform to all relevant standards and the default position of the roof is "Always open". This default is critical during night time when the building is unoccupied and at it's most vulnerable time for asset safety. (No personnel present to identify a fire and raise alarm early).

#### 6 Step Fail-Safe Modes:

- Roof opens when the PIR sensor stops sensing movement of people, i.e. when everyone has vacated the pod or when the pod is empty at night.
- Roof opens if heat is detected by the integrated heat detector, at 135°F (57°C). This is the primary "quick response" detector.
- Roof opens if heat is detected by the integrated fusible link at 150.8°F (66°C). This is the secondary standalone fail-safe detector.
- Roof Opens when a fire in the building is detected. Please note: This only applies when the pod is connected to a building fireboard. This Requires special electrical on site assistance and connection.
- Roof opens if the power is cut turning off the pod power / in the event of a power cut in the building / in the event of an electrical failure within the pod.
- Roof opens if the heat detector is removed or fails.



The default open and fail-safe modes work by cutting the power to the actuators, allowing them to open by means of an integrated spring return. This effectively means that the roofs will "always open" whatever the scenario.

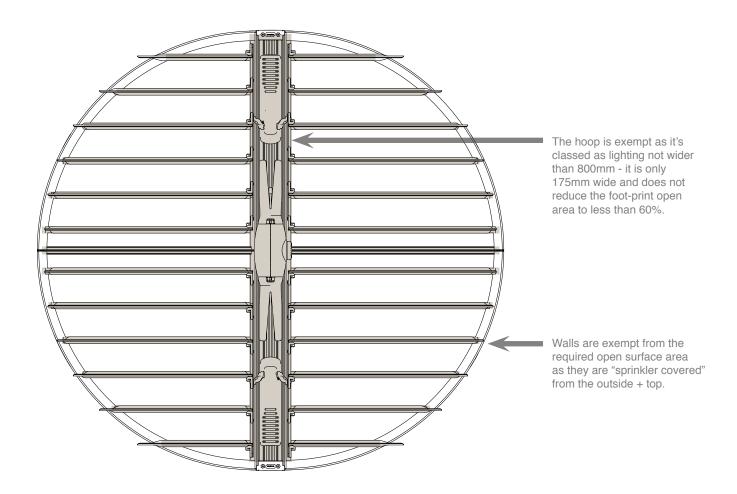
The roof opens without the need of electrical power in 8 seconds when any of the failsafes and detectors cut the power to the pod.

The roofs are by default "self testing" through their daily operation. In the event of a fault, flashing indicator lights on the membrane switch panel are indicated and the roof opens.

## **Sprinkler Positioning & Obstructions**

The opening roof has been designed to create a minimum 70% open roof area regardless of the size of pod to conform to standards for sprinklers mounted above an open grid ceiling system as specified in **NFPA 13 - Installation of sprinkler systems**. Whist this is technically a different and more onerous scenario to our opening roof due to being an obstruction in both directions, we felt it was important to meet as a minimum these requirements for open surface area to allow maximum water ingress.

#### We have actually surpassed this minimum requirement with 74% open area.



## **Testing & Performance**

#### Improved water ingress through the use of the louvred roof

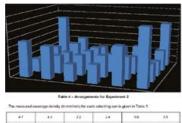
We have carried out extensive In house testing during development to obtain the best possible performance and enable fine tuning of the design. This was critical in order to commission the pre production prototyping in the exact materials for the independent testing.

#### Third party test house BRE GLOBAL.

Following the development testing, we commissioned an external independent test house, BRE Global to confirm compliance primarily with BS EN 12845 Fixed fire-fighting systems / Automatic sprinkler systems, NFPA 101 Life Safety Code & NFPA 13 Sprinkler Code by demonstrating a louvred roof is not an obstruction when placed under sprinklers.







47	43	22	34	5.0	33
1.1	2.6	27	339	20	21
10	11	20	24	2.9	19
11	34	95	17.	31	97
62	32	20	12	28	- 66

The tests confirm through official documentation and video evidence, the low to zero risk status of Air pods within sprinklered workplace environments through sufficient even water ingress.

The results also highlighted that the spread of water inside the pods was better with the louvres than with no roof at all. The improvement to the water spread in the corners was vastly improved.

The tests were carried out with the two types of sprinklers:

- Tyco TY1236 flat spray K57 (flat spray pattern) Common in the US
- Reliable F1FR pendant K80 (tapered spray pattern) Common in the UK

At two heights from sprinkler head to top of louvre blades:

- 800mm max for US
- 300mm min for UK

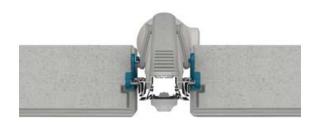
These two distances from obstructions cover the min / max parameters for the US and the UK.

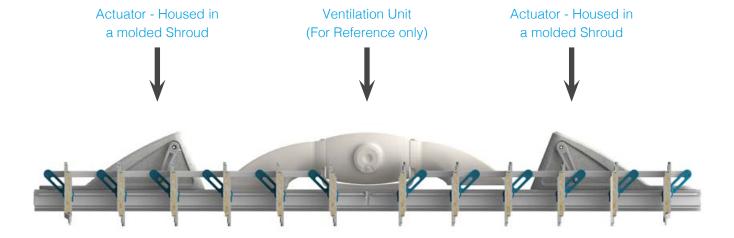
## Technical design

The design consists of uniquely engineered rotating louvre blades, driven by two actuators and collectively connected to enable all louvres to open and close simultaneously.

The blades are a highly engineered molded composite of polyester felt and high density inner core specifically designed to create a balance of acoustic absorption and sound insulation when closed and generate twice the level of absorption when at the 10° manual open position.

The actuators are shrouded by acoustic cowls to create low noise operation and a visual clean line.





## Risk engineered out

Specifying tested and approved components allows us to engineer out risk

All off the shelf component have been chosen to conform to the relevant standards in the UK & EU and for the US from the UL Yellow carded pre approved list and tested as an assembly against UL962 & UL 1286 electrical / fire standards. Equally, every specially designed component or assembly has been rigorously checked and engineered by ourselves and or suppliers for the UK & EU standards and for the US, by UL and also tested against UL962 & UL 1286.

#### **Smoke Detector**

Internationally approved standalone smoke detection.

#### Series 65A Photo-Electric Smoke Detector











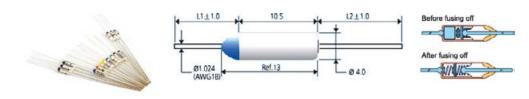




#### Fusible Link (heat detector). - 66°C rated

A simple tried and tested mechanical device.

UL approved and specifically chosen for US market and by default, usable globally.



Part No.	UL/cUL	VDE C	CC PS	E	T <sub>F</sub> (°C)	T <sub>H</sub> (°C)
DF66S	0	0	0	0	66	42

Approvals: UL & cUL: E117626 VDE: 115369, 116219 CCC: 2003010205079617 PSE: JET2926-32001-1001-1009 EK: HH05009-2004A-2019A



#### Actuators - Failsafe opening in 8 seconds from detection

The actuators chosen are specifically designed for fire / smoke ventilation units and are tried and tested to UL approval, IP54 rating and have an 'emergency spring' minimum opening life of 60,000 cycles and a 'day to day' minimum motorized operation life of 150,000 cycles (based on 25 open / close cycles per day at 90°)... that's 16 years life. They have a fail-safe "power off" spring release integrated as standard and are specified as a globally recognized quality product for smoke / ventilation louvre systems.

Spring return actuator with emergency function for adjusting air dampers in ventilation and air conditioning systems in buildings



Direction of rotation	Can be selected by mounting L / R				
Service life	Min. 60,000 emergency positions				
Protection class	Extra low voltage UL Class 2 Supply				
Degree of protection	IP54 NEMA2, UL Enclosure Type 2				
EMC	CE according to 2004/108/EC				
Certification	cULus according to UL 60730-1A and UL 60730-2-14 and CAN/CSA E60730-1:02 Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14				
Maintenance	Maintenance-free				

#### Materials

Great attention has been paid to the material selection throughout the pod. Plastics have been specially selected as low flame / low smoke and for the US are UL 94 - V0 or HB either chosen from yellow carded pre approved and tested UL materials selector or have been tested and fingerprint audited on a quarterly basis by UL. All wall & roof linings are Class C minimum to Class A where possible for individual materials and fabrics.

## **Building fire standards**

The opening roof is specifically designed to enable the Air pods to conform to fire standards below through creating "by default" sprinkler coverage to the inside of the rooms...

The Air pods have been designed so that internal wall and ceiling surfaces achieve the appropriate level of performance to UK / EU & IBC standards. This provides a robust platform by which Fire Engineers and Enforcing Authorities can satisfy themselves of compliance with functional Building Regulations requirements.

Where the Air pods are being installed in buildings that are provided with automatic fire sprinklers, the automatic pod roof system has been designed to achieve the performance parameters of BS EN 12845, BS 9999:2008 & Building regulations Approved Document B whereby the building's existing sprinkler system will be able to control a fire in the pod without it being necessary to extend the building's existing sprinkler to the pod itself.

#### **United Kingdom / EU**

BS EN 12845 Fixed firefighting systems / Automatic sprinkler systems design, installation and maintenance

BS 9999:2008 Code of practice for fire safety in the design, management and use of buildings

Building regulations 2000 Approved Document B - Buildings other than dwellinghouses

## **Standards**

#### UK / International roof standards

#### Roof panels:

BS EN13501-1:2007 - TBC

#### Textiles:

Camira - Synergy

BS EN 1021-1 Cigarette PASS
BS EN 1021-2 Match PASS
BS 7176: Low Hazard PASS
NF D 60-013 (AM 18) PASS

UNI 9175 CLASSE 1 IM ÖNORM B 3825 Burning Behaviour PASS

BS EN 13501-1 (ADHERED) Class D, s1, d0 BS EN 13501-1 (UN-ADHERED) Class E, s2, d0

**Gabriel - Europost** 

BS476 Part 7 Class 1

BS 5852 Can be treated to Crib 5 at additional cost

BS 7176 Medium Hazard

Camira - Blazer

BS EN 1021-1 Cigarette PASS
BS EN 1021-2 Match PASS
BS 7176: Low Hazard PASS
NF D 60-013 (AM 18) PASS
UNI 9175 CLASS 1IM
ÖNORM B 3825 Burning Behaviour PASS
ÖNORM A 3800-1 Smoke Emission PASS

BS EN 13501-1 (ADHERED) Class D, s1,d0

**Kvadrat - Divina3** 

BS 5852 Crib 5
BS 5867 Type B
DIN 4102-1 Class B2
BS EN 1021-1 2006 PASS
BS EN13501-1:2007 Class C,s1,d0

#### Plastic drive arm / electrical housings / upholstery mouldings:

UL 94 V0 rated

#### Plastic decorative covers:

UL 94 HB rated

#### Plastic extrusions:

UL 94 HB rated

#### Glass panels - Toughened glass:

BS EN 12150-1: 2000 Thermally toughened soda lime sillicate safety glass BS EN 12600 - Impact Class 1

#### Electrical:

BS 6396 Electrical Systems in Furniture

#### Designed where required with consideration to the following Fire & Building Codes:

NFPA 13 - Installation of sprinklers / NFAP 101 - Life safety code / IBC - International building code

NFPA 72 - National fire alarm code / NFPA 1 Uniform fire code

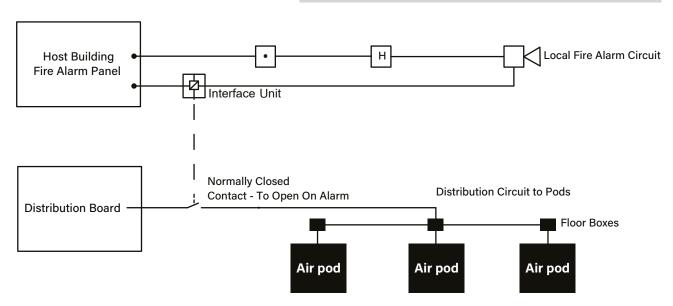
BS9999 - Code of practise for fire safety / BS EN12845 - Fixed Firefighting Systems / Approval Document B - Buildings Regulations 2000

## Connection

The beauty in this solution is maintaining freedom and flexibility of the pods from the building infrastructure, no sprinkler integration required or connection to the fireboard.

If however you prefer the fire board to open the roofs in the event of an alarm, simply connect all pods on one power circuit and create a cut-off link from the fireboard to the pod circuit "outside of the pod".

Using host building fire alarm panel to cut power in the event of a fire NB. Cutting power will shut down the pod and open the roof.



#### What about strobes?

No problem, the pods have plenty of visibility through the glass sides.

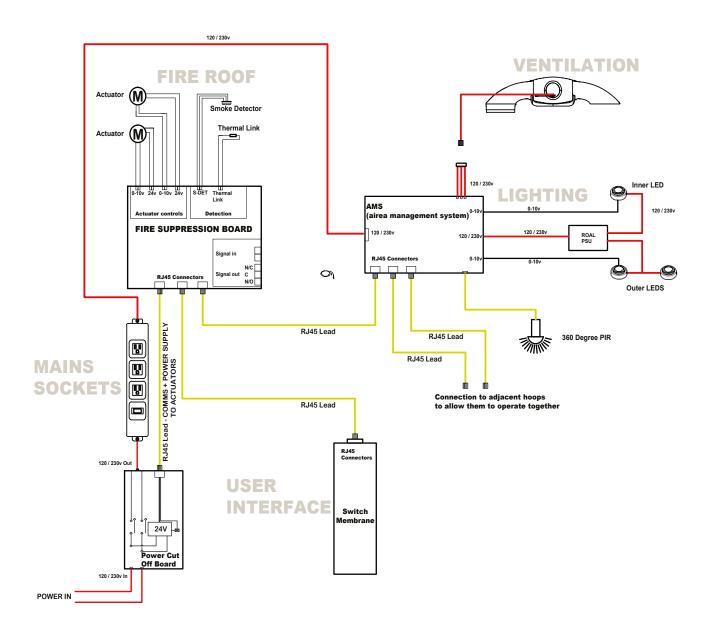
#### What about audible alarms?

No problem, the pods have an acoustic performance but are not sound proofed and therefore the fire alarm set to 80dB+ is audible inside the pod. (BS5839 - A sound level not less than 60dB in enclosures of no more than 60 m2 in area e.g. cellular offices). On site project specific testing is reccomended.

when there is a requirement to connect to the fire board, the roof will open in 8 seconds and the alarm audibility will be louder. To the fire board, the roof will open and the alarm will be instantly heard.

## **Electro-Mechanical Schematic**



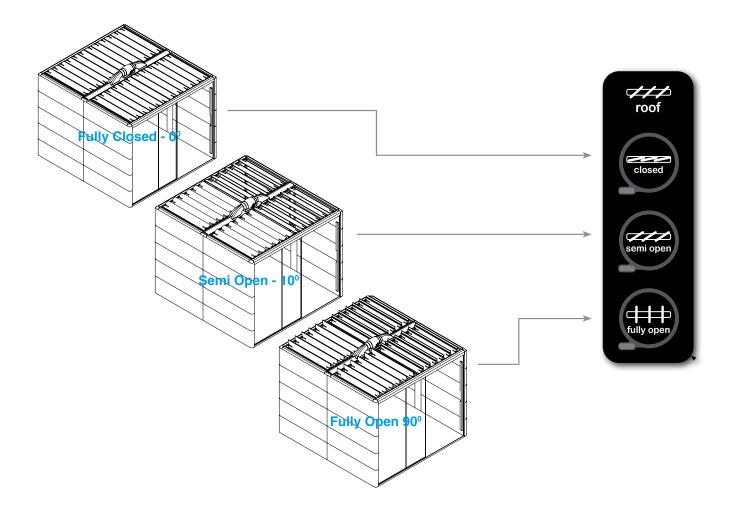


## **Roof settings**

Since we are in control of the whole engineering system including the programming of the electronics, we decided to create 2 added bonus features.

Manual 10° Open Roof Mode Manual 90° Open Roof Mode

- · This creates enhanced airflow through the room while still maintaining a level of acoustic privacy.
- · No need to tether to the air-con or move ceiling units.
- The acoustics are still optimized despite the roof being open, by doubling the absorbent surface area through double sided louvres.





At the heart of the air pods is the hoop, which contains all the intelligence and complexity.

The lighting, ventilation and opening roof actuators are all integrated within the hoop and linked through our unique electronic control system, the Air Management System (AMS). This links all the elements together through the PIR motion sensor, the smoke and heat detectors and also the user control panel integrated within the room.

This link is critical enabling the sensors to turn the power to all elements off (even in multiple hoop pods), in the event of a fire or when the pod is unoccupied.

The switch panel itself is a flush membrane switch panel with LED indicators, integrated within the hoop uprights.

## **Fixed Roof - Engineering**

Composite moulded roofs: Specifically engineered and tooled using recycled plastic polyester material combined with solid board for increased insulation creating high acoustic insulation with great levels of absorption and diffusion.



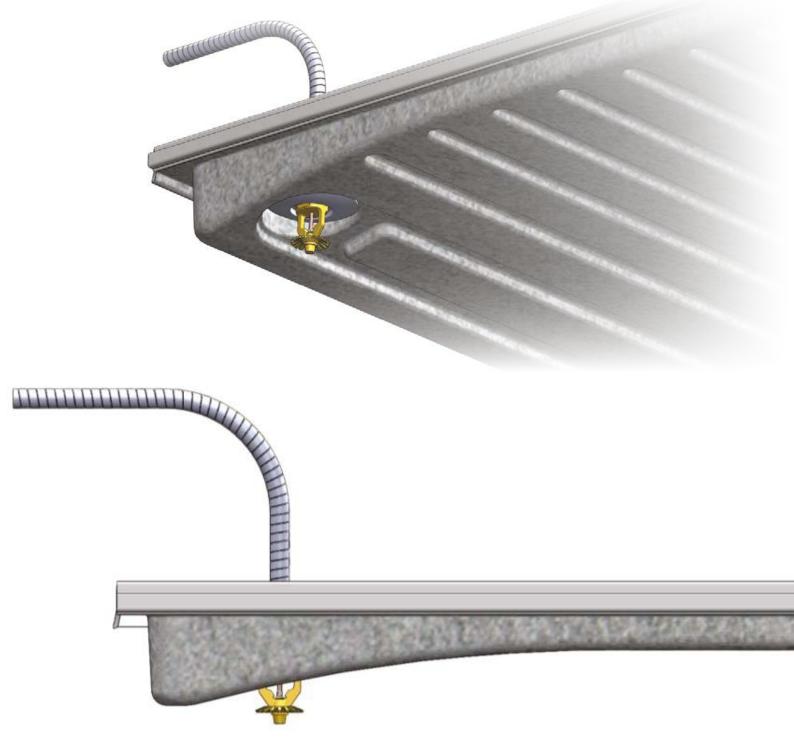
The overall moulded shape and indents in these panels also help break up sound waves more effectively than flat panels.



#### Fixed Roofs - Site fixed sprinkler head integration

Sprinkler integration is possible within the fixed roof versions by means of contractor site drilling through one of the moulded in location flat areas.

A flexi sprinkler head can be purchased by the fire sprinkler contractors from Tyco, flexhead or other approved available sources.



## **Roof settings**

#### Fire Detection / Fault / Test Reset.

In the event of a fire detection, power fault, power test or if connected to the building fireboard, the power will be instantly cut to the pod, causing the roof to automatically open through the actuator spring mechanism.

#### In order to reset the pod:

- 1. Unplug the pod from the floor or wall sockets, or press the re-set switch
- 2. Wait 1 Minute then re-plug / reset the power.
- 3. If there is a re-set switch integrated within the hoop switch the re-set button off, wait 1 minute, then switch on.
- 4. In either option above the pod switch panel LEDs will flash to indicate re-setting, and after 30 seconds the pod will turn back on and re-set itself.
- 5. If it doesn't come on, check the isolator switch and the reset switch. If necessary repeat as above.

#### For normal pod function:

- 1. Please ensure your pod is plugged in, either to a floorbox, wall socket or ceiling connection.
- Ensure isolator switch located on the sockets is switched on and the reset switch located inside the cover through the cable grommet is also switched on (all Air3 Pods - except the air 20 Minipod).
- 3. Check all fuses are in working order.



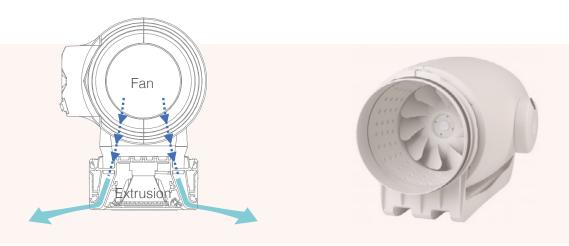
# Intergrated services [air fan]



An intergrated air fan accessory is available as an option on every Air<sup>3</sup> Pod (except Air-20 which as an intergrated air system as standard)

## Circulation fan

The specially designed fan assembly integrates with the main 'hoop' extrusion. Cross section view showing air from fan coming through the integrated air duct in the main extrusion.



#### Mixed-Flow fan information

Low Profile 'Mixed-Flow' fans with sound absorbent insulation. Extremely quiet. Certified of Approval noise abatement society. Manufactured in plastic material with a specifically designed internal skin to direct the sound waves in the right angle for them to be captured by the sound absorbent material. Fitted with rubber gaskets on the inlet and outlet to absorb vibrations, a body that can be dismantled. Connection box can be rotated 360o, to facilitate easy connection of the power cable.

#### Motors

Speed controllable 230V 50Hz, two speed motor. IP44, Class B, and safety thermal overload protection.

#### Additional information

The models offer solutions to ventilation problems, especially in places where people work and low sound level is required.

Low - Inside Pod - 46dB

Noise - Outside Pod - 42dB

Fan - Zero Vibration



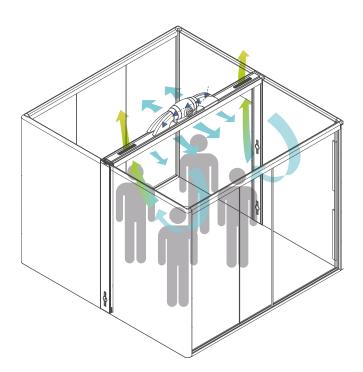


## Air flow systems

#### Air Flow System Example:

Air flow rate for 4 users inside a pod with single service hoop / one air fan.

Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics.



### Control of CO2 Heat & Humidity inside Pod

Air<sup>3</sup> Pod Size: L. 2.96m D. 2.85m H. 2.25m

Use: Meeting Duration: 1 Hour Number Of People: 4

Activity Level: 1.2 (metabolic rate for sedentary work)

#### Air Handling Capability of the Air3 Fan:

To provide fresher air into the pod the analysis shows how the air fan provides much more airflow rate measured in cubic metres per hour (m3/hr), than the minimum required.

Required airflow rate per person: 10 Litres/s Person = 40 Litres/s for 4 people (BS EN 15251 Cat 1, B3)

Air3 Fan provides a maximum of 380m3/ hr = 105 Litres/s (ie; 2.5 x more than the minimum requirement)

See 'User Control' Section for air fan user operation.

## Components

#### Low Profile



The fan is perfect for installations where space is limited.

#### Easy Maintenance



Bi-material support brackets, which in addition to simplifying installation, serve as joint seals.

#### Integral Mounting Bracket



Bi-material support brackets, which in addition to simplifying installation, serve as joint seals.

#### **Duct Air-Seals**



Bi-material inlet & outlet incorporating a flexible washer to facilitate installation, absorb vibrations & provide a virtually air tight seal.

#### Low Noise Levels



Sound waves produced inside the Fan are directed through the perforated inner skin and absorbed by the layer of sound absorbent material.

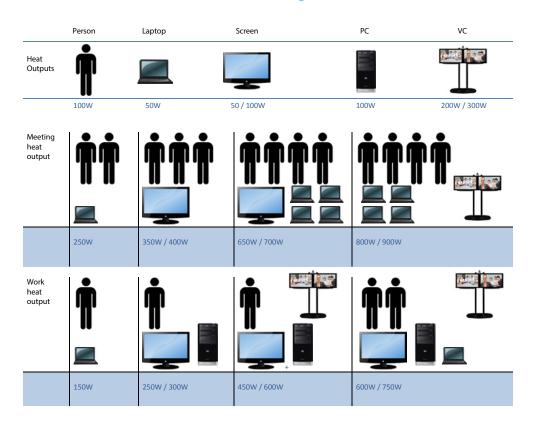
#### Connection Box Rotates 360°



Connection box can be rotated 360° to facilitate easy connection.

## **Guidelines**

## It's important to understand how the pods will be used to manage comfort

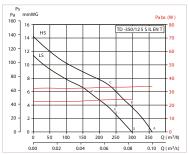


It is reccomended that the client carries out a full assesment of useage and equipment to identify and determine the airflow and cooling requirements. This may identify the need for additional cooling within the pods and any space planning guidelines such as locating pods away from windows that are prone to solar gain.

#### ■ Performance Curves

- -Q = Air volume in, m <sup>3</sup>/hr and m <sup>3</sup>/s.-Ps = S tatic pressure in mmWG and Pa.
- Dry air at 20°C and 760 mmHq.
- Performance data in accordance with ISO 5801, AMCA 210-99 Standards and B S 848 part 2:1985.

HS = High speed LS = Low speed



#### ■ Technical Characteristics

Model	Speed (r.p.m.)	Maximum absorbed power (W)	Maximum absorbed current (A)	Duty at free discharge (m <sup>3</sup> /h)	Maximum operating temp.	Sound pressure level* (dB(A))	Ø Duct (mm)	Weight (Kg)
UK FAN	2250 1900	30 22	0,13 0,10	380 280	-20/+40	20 19	125	4,94

<sup>\*</sup> Sound pressure level radiated at 3 m at free air conditions with rigid ducts at the inlet and at the outlet.

#### **Pod Unoccupied Fan Off**









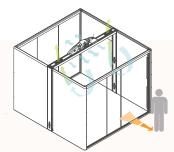


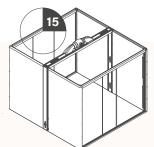




**Person Enters Pod** Fan linked to PIR System **Activates automatically** 

Person leaves pod Fan stays on for 15 minutes to expel CO2



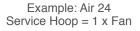




An air fan is optional, but is always recommended for all workspace situations.

When specified it is one fan per service hoop (whether this be for the 2.8m service hoop or the 4.1m service hoop).







Example: Air 26 2 Service Hoops = 2 x Fans



## Air flow systems

The opening / closing roof provides additional air handling capabilities.

When using the pod, manual control of the roof by means of the user control panel allows pod users to open the roof at any point to allow cleaner, cooler air in, and at the same time let staler, warmer air out quickly.



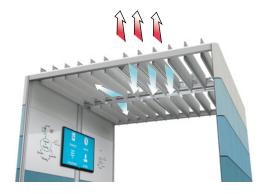
#### Roof Closed

Air brought into the pod by air fan only.



#### Roof Semi Open

Air brought into the pod by air fan and through the gaps in the roof blades. Stale air can very quickly exit through the gaps.



#### Roof Fully Open

Maximum air brought into the pod by air circulation fan and through the open roof blades. Stale air can immediately exit through the roof blades.

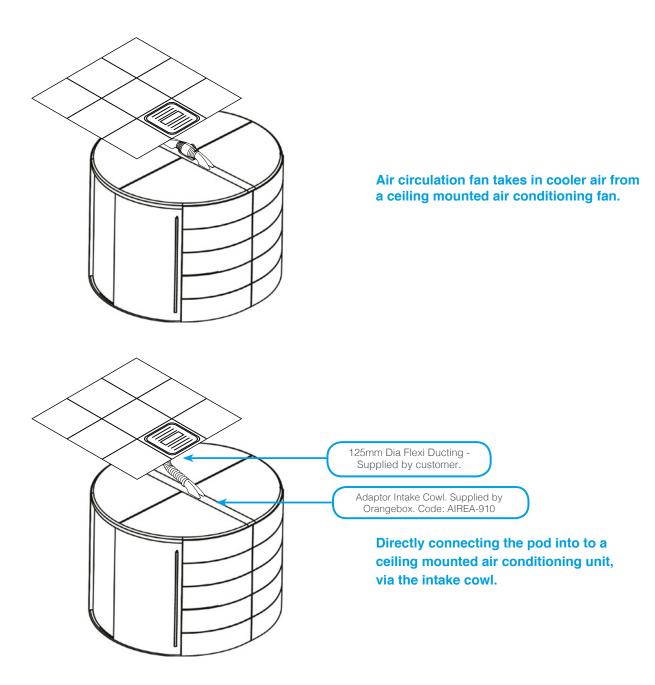
#### **Building Air Conditioning**

Air conditioning units will bring cool air into the pod when it is unoccupied (ie; roof fully open).

There is no need for the air conditioning unit to be fully connected to the pod.

## Air flow systems

The pod fan is an air circulation unit. It is NOT an air conditioning system. However, the air fan can pull in the cooler air from a ceiling mounted air con unit. There is also the option to directly connect the pod to a ceiling mounted air conditioning unit.



The minipod has an integrated air system consisting of 2 fan units mounted in the pod ceiling panels. One is for bringing in fresher, cooler air, and the other is for extracting the staler air. These fan units are operated automatically through PIR sensor control, activating when a person enters and the pod and stopping when the pod has been unoccupied for 10 minutes.

#### Minipod Fan / Power Details

Fan Flow Rate - 19.5 Litres per second. Taking the grills into consideration.

Fan Flow Rate - 28.5 litres per second

Air Flow @ 12V 102.6m3/h





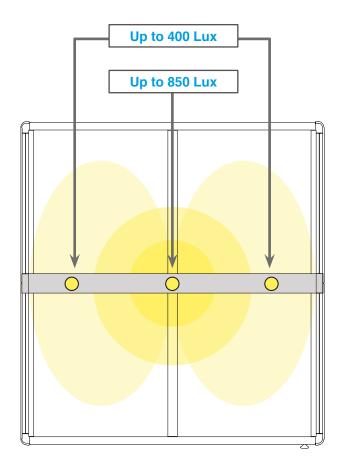
# Intergrated services [LED lighting system]



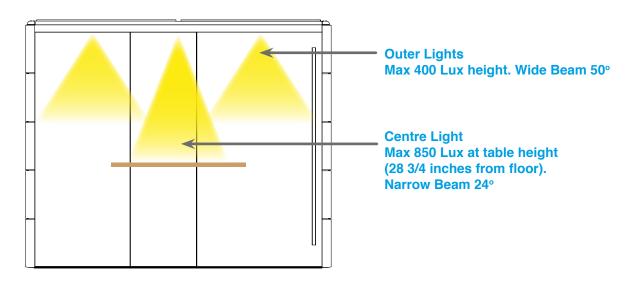
An integrated LED lighting system is available on every Air<sup>3</sup> Pod - controlled automatically by a PIR sensor. Manual control is also available on every Pod (except Air-20).

## LED Lighting Systems & Settings

Working, thinking and presenting

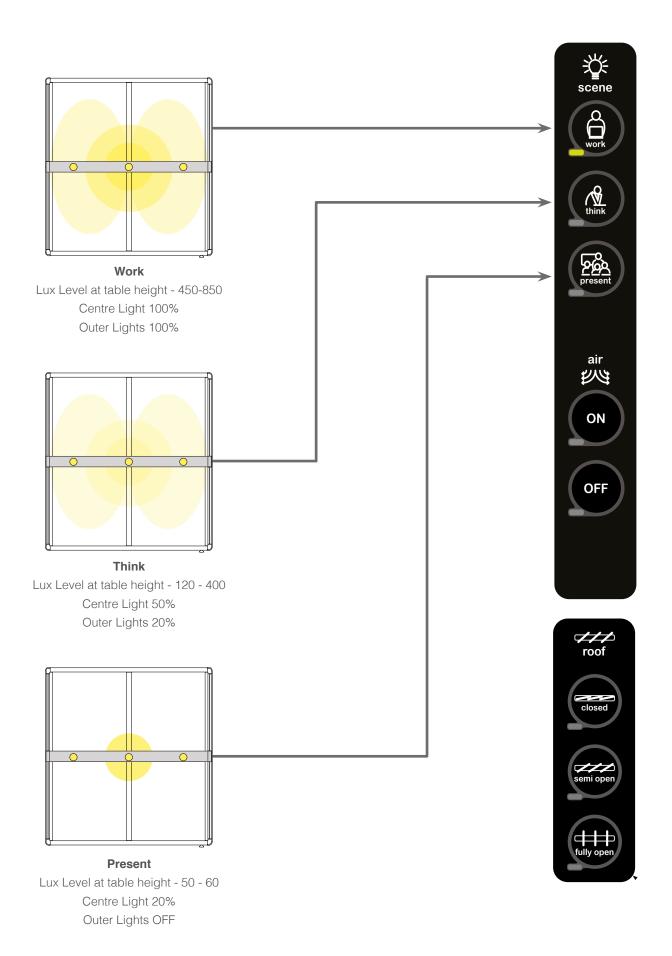


- High light output, low energy consumption
- · Extremely long lamp life Min 5 Years
- Recyclable
- Zero Maintenance



2.8m Service Hoop - Total of 3 LED Lights. Total Output of 30W per hoop

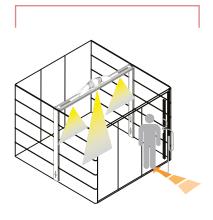
4.1m Service Hoop - Total of 4 Lights. Total Output of 40W per hoop



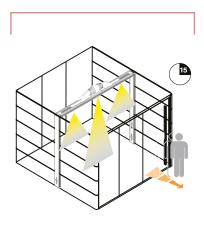
## **LED Lighting Systems & Settings**

Achieving clever acoustics to maximise privacy

Person Enters Pod Lighting linked to PIR system (Auto ON/OFF)



Person Exits Pod Lighting stays on for 15 minutes



The minipod has integrated LED lights mounted in the pod ceiling panels. These lights are operated automatically through PIR sensor control, which activates when a person enters the pod and stops when the pod has been unoccupied for 10 minutes.





# Intergrated services [electrical systems/power]



All Air<sup>3</sup> Pods have an intergrated electrical services solution powered by just one main connection to the building once the pod is assembled.

## **Hoops & Sockets**



#### Single Service Hoop: 1 Plug

Max Visible Cable Length 2m - pod exit to floor box / wall socket (BS 6396)

#### Integrated power for:

- LED lighting
- Air fan
- User control panel
- · Opening roof
- Power sockets

#### Multi Service Hoop: 1 Plug Per Service Hoop

Max Visible Cable Length 2m - pod exit to floor box / wall socket (BS 6396)

#### Integrated power for:

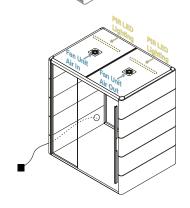
- LED lighting
- Air fan
- User control panel
- · Opening roof
- Power sockets

#### Air 20 Minipod: 1 Plug

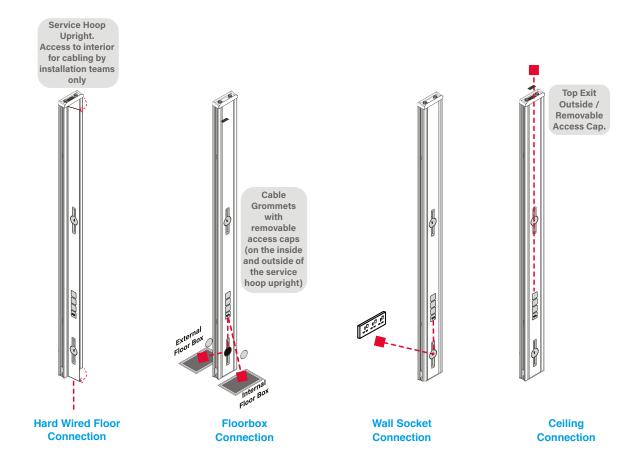
Max Visible Cable Length 2m - pod exit to floor box / wall socket (BS 6396)

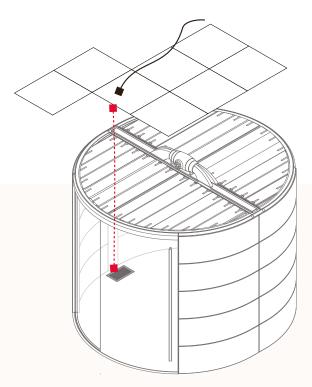
#### Integrated power for:

- LED lighting
- Air fan

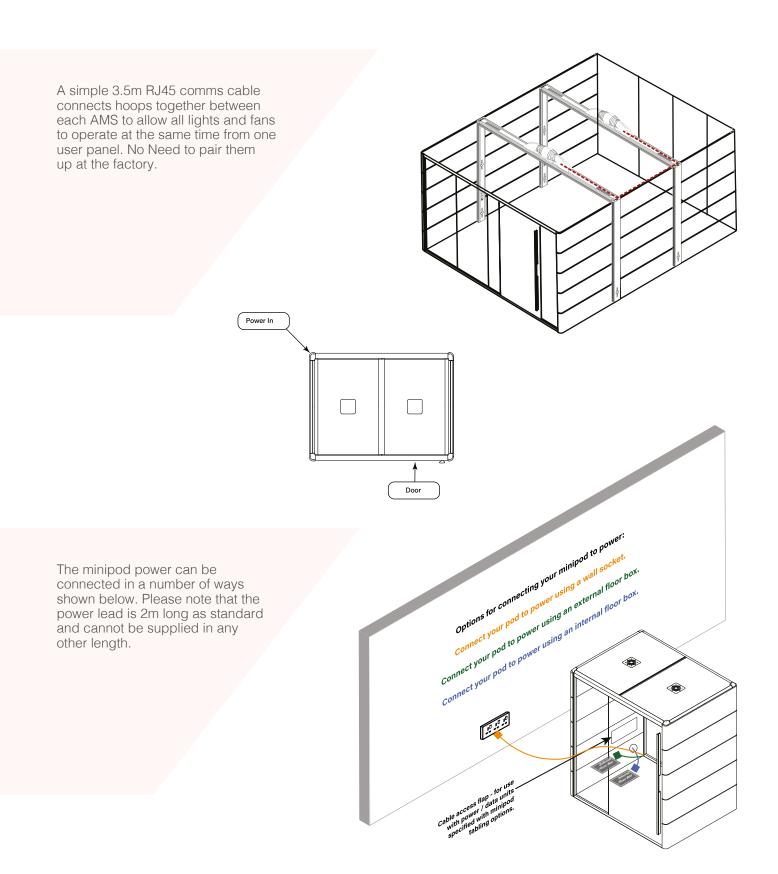


## **Connections**





## **Hoop to Hoop Connections**



## Manufactured to enable compliance with BS 6396 / BS 1363

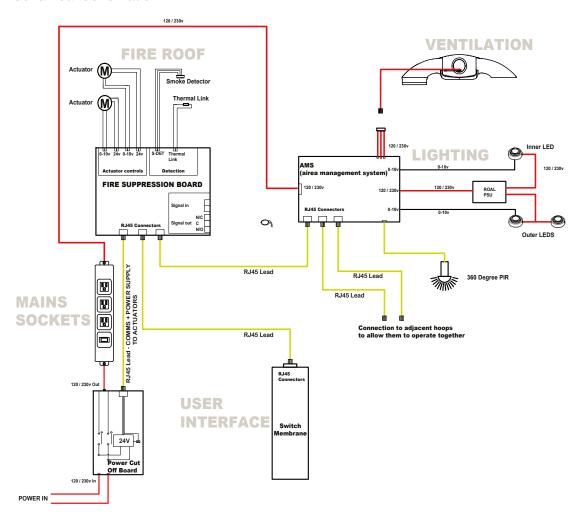
The power solution is seamlessly integrated within the service hoop and feeds the power required for the lighting and airflow system. 3 x Fused Power Sockets are supplied as standard with a separate fused isolator switch The hoop can alternatively be specified with 2 x power / 2 x Data Ports.

# Fire supression relay cut off Power Mains Socket Outlet x 3 Isolator Switch Reset switch Supply in - supplied by Orangebox Mains Rated Cable

Extra Low Voltage Cable / Control

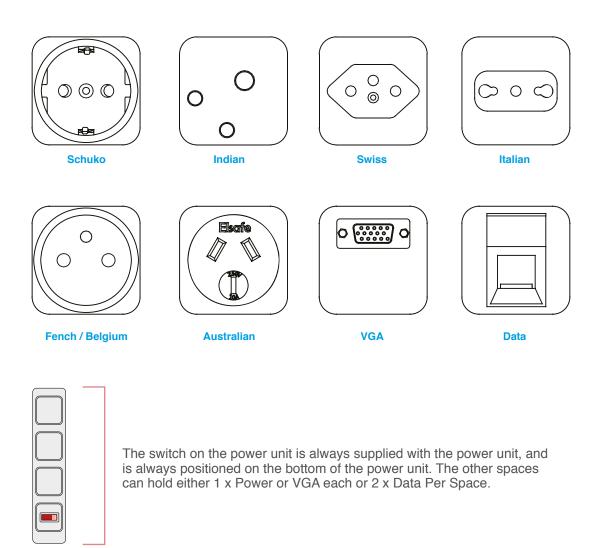
**UK** power socket

#### Electro-Mechanical Schematic



## Sockets

The power solution is seamlessly integrated within the service hoop and feeds the power required for the lighting and airflow system. 3 x Fused Power Sockets are supplied as standard with a separate fused isolator switch.



Compact unit providing a flexible modular power and data distribution, ideal for office desks and screens where a limited number of outlets are required. Standard of the shelf units are available from stock.

- Mains power sockets formats for most countries together with a wide range of data outlets.
- · Special units with remove switches, thermal re-settable fuses, power cleaners.
- Manufactured to enable compliance with BS6396 or BS7671 where relevant.
- · UK sockets incorporate fuses as standard with colour coded insets indicating fuse rating.
- Unfused sockets may be specified where applicable.



## **Accessories**

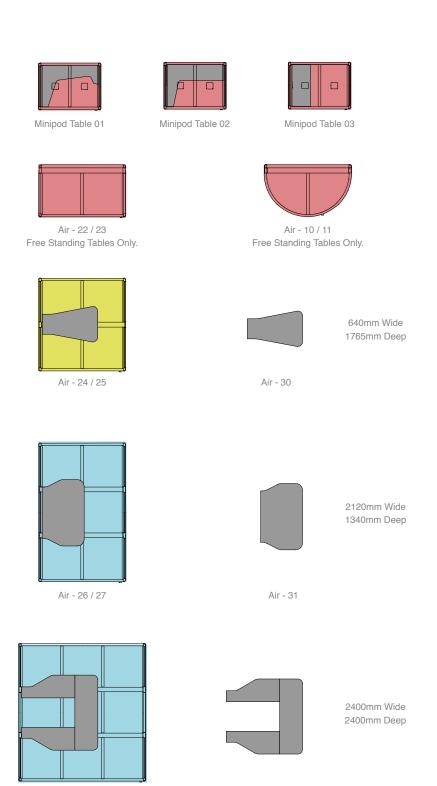
[standard accessories]



# Integrated table footprints

Table layouts and connections explained.

Free standing tables are also available in all pods.

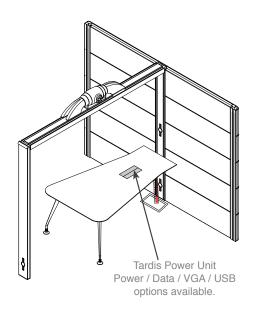


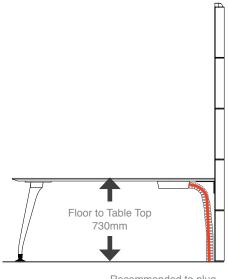
Air - 32

Air - 28 / 29

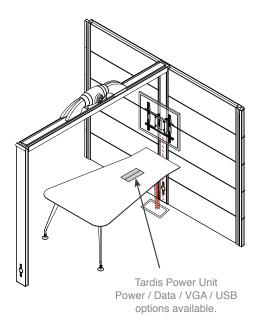
# **Specifications**

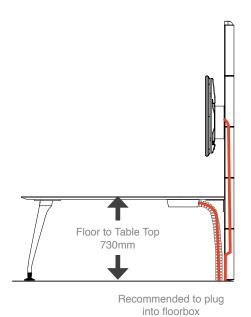
Height, power connections and recommendations





Recommended to plug into floorbox





9.2

# Integrated tables

Media Table 01 1000 x 1800mm Large Rectangle Table



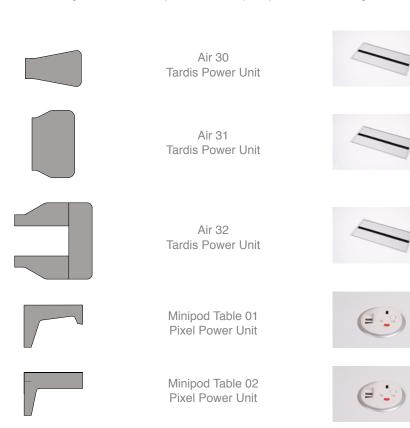
Media Table 02 1000 x 1800mm Teardrop Table



Media Table 03 800 x 1300mm Small Rectangle Table



Please check with regard to suitability on the Air3 pod you wish to integrate these tables into.



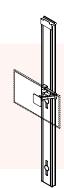
Minipod Table 03 Pixel Power Unit

# **Monitor Mounting Options**

Power units explained

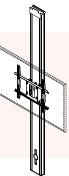
### Hoop Mounted Adjustable Monitor Bracket.

- This is VESA Mount Only (100 x 100mm)
- A VESA Adapting Plate is available POA
- Up to 32"
- Max Weight 25kg
- Advised for pods with 1 hoop and small monitors



### Hoop Mounted Fixed Monitor Bracket.

- Max Weight 25kg
- 32 55" Monitors
- · Advised for pods with 1 hoop and large monitors



### Over Upholstery Fixed Monitor Bracket.

- Max Weight 25kg
- 32 55" Monitors
- · Can only be used on pods with straight screens



### Image shows positioning of the whiteboards.

- Whiteboards are positioned on layers 3 + 4 of the upholstery panels.
- The whiteboards can only be mounted on the internal upholstery panels.
- Whiteboards are available in Curved or Straight.





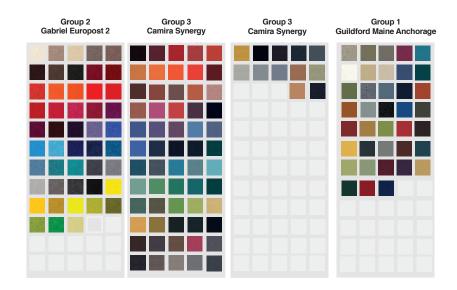
# Finishes [standard finishes]



# **Fabric Panel Options**

Use different colour, layers and gradation to personalize your pod

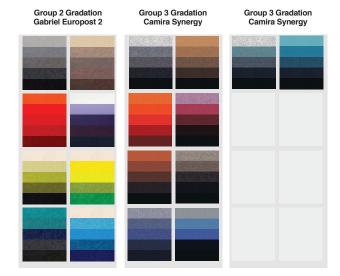
Air 3 Fabric Panels can be ordered in the below permutations. You can also specify a different fabric type or color internally than externally. This also applies to the layers.

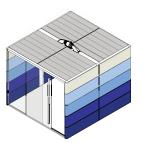






Layers





Gradation

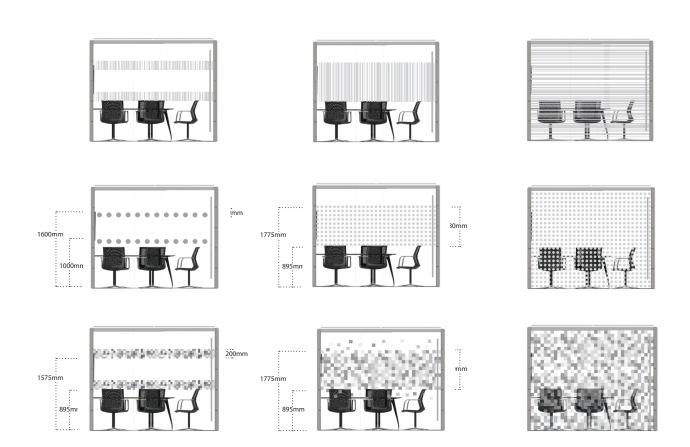
## Standard Air<sup>3</sup> Manifestations

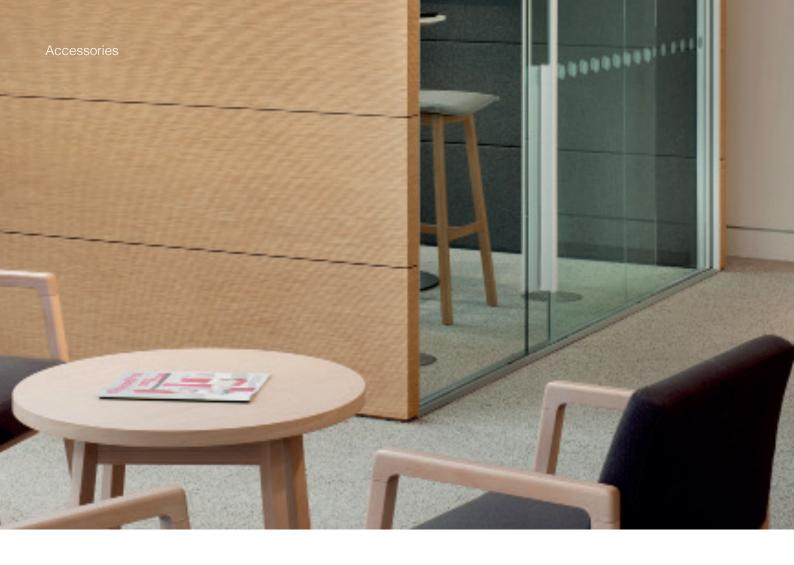
Fabrics ranges and colour paletts

Standard manifestation options are available as shown below, or you can choose your own pattern or company branding / logo (POA).

To conform to BS 8300 and approval document M for DDA / Health & Safety requirements, we recommend you apply manifestation to all Glass including the door. These can be bought through Orangebox - with the pod, or alternatively you can purchase your own separately.

Please note the graphics are generally applied to the outside of the glass to elliminate the door seal from rubbing off the graphics or scraping when opening & closing.





## Wood is back

Wood shown is Alpi Oak linear veneer creating a beautifully even finish over large surface areas.

Wood creates a beautiful new dynamic to the look of the pods and can compliment interiors where soft natural materials are used.

The wood panels are high quality architecturally detailed, with a seamless wrap around corners and perfectly lined horizontal splits.

The additional solid surface on the sides also enhances the insulation levels both from inside and outside.

Wood options on the outside of the pods are avalable on request to minimum quantity order. Please talk to your sales representitive for more information or to request a quote.



# **Delivery & Installation**[OVERVIEW]





# **Delivery & Installation**

### Delivery & Installation Questionnaire

- RAMS (Risk Assessment / Method Statement)
- Site drawings
- Site permits
- Provide install teams with on-site access, building access & site contact person
- Unload Vehicle
- · Decant Product to working area

### Assembly trained install team only.

### Customer Sign Off Requires:

- Pod Positioning Customer sign off
- Job Sheet Customer sign off
- · Electrical Test Sheet Installation Engineer sign off

### **DELIVERY & INSTALLATION QUESTIONNAIRE**

Please note it is your responsibility to ensure that there is a sufficient access route for any products ordered for installation to be taken to their required installation point. You should check that doorways & hallways are wide enough, that you have either a large enough lift or stairs with enough space to maneuver the goods to any required floor.

1.	<b>DELIVERY ADDRESS &amp; SITE CONTACT</b> - Please confirm the full site address and full name and tel. no. of the Site Contact (both landline & mobile no. required). The Site Contact will be required to sign off the completed installation.
2.	<b>ARRIVAL TIME</b> - Is delivery required during normal working hours e.g 9am – 5pm? Please confirm if a specific time slot is required. If not, then please confirm your opening hours on the day that delivery has been arranged.
3.	PARKING - Is there parking available at a goods entrance? If not, where is parking available?
4.	ACCESS - Is there clear access to the building? Please advise us of any restrictions to access. Most deliveries are made on 40ft articulated vehicles. Please advise if access to large vehicles is restricted and, if this is the case, please advise the largest vehicle that can access the site
5.	LIFT - For products to be assembled higher/lower than ground level please confirm if there is a Goods/Passenger lift available. If Passenger, the internal lift dimensions and size of door opening MUST be provided.
6.	BUILDING - Is the client in possession of the building, or is there a handover date?
7.	<b>SECURITY DETAILS</b> - Do you require any security details from Orangebox, e.g names of fitters, vehicle registration number, <b>site permits</b> etc.? If so, please confirm what information is required.
8.	SITE INDUCTION / PPE / CSCS CARDS - Please confirm if our fitters are required to attend a site induction. If so, please confirm the induction start time for the day installation has been arranged. Please also confirm if you require our fitters to bring PPE and CSCS cards to site.
9.	RAMS - Do you require us to provide you with a Risk Assessment/Method Statement?

10.	PRODUCT POSITIONING - On which floor(s) are the products to be assembled?
11.	<b>FLOOR PLANS</b> - Are floor plans available for the positioning of product? If yes, will these be forwarded to Orangebox before installation or will they be available on site?
12.	NO FLOOR PLANS - If floor plans are not required, who will be available on site to confirm the location of the product?
	Specific information required for Airea Pods only
13.	STAIRS – If delivery is via a staircase, is there sufficient angle to manoeuvre Airea panels, size H2150 x W1300, and Roof Hoop, L2800?
14.	Product Positioning – Will the Pod be positioned on carpet or a hard surface?  Please can you provide a floor plan or confirm the exact location of the product on the floor?
	reade dan you provide a near plan or commit the exact recallor of the product on the near.
15.	CEILING HEIGHT – Is the ceiling height of where the products are to be assembled a minimum of 2.5 metres?
16.	POWER/DATA CONNECTION – If applicable please confirm where the Airea pod(s) will connect to power (and data if applicable) e.g from wall socket, floor socket, ceiling.
1	

### **DELIVERY & INSTALLATION QUESTIONNAIRE**

The Below Section is to be completed by the Site Contact once the installation is finished.

17.	PACKA	GING – All packaging has been removed from the site. ( Please Circle )
	Yes	No
18.	COMPL	ETED INSTALLATION – The installation has been fully completed to my satisfaction. ( Please circle )
	Yes	No
19.	СОММЕ	NTS – Please provide any feedback relating to this installation.
	Name	of Customer (PRINT)
	Custon	ner Signature
	Date	//

**General Risk Assessment: Reference: GRA027** 

orangebox

Activity	Installation and Service	Date	10/08/2016	Completed by	Service Engineers
Products	Office Furniture			Authorised by	

Activity					
Hazard	Harm	Existing Precautions	Control Measures Recommended	Action by	When
Work Equipment  Cordless battery  Operated drill  Electric jigsaw (if required)  Hand Tools (rivet gun, mallets, clamps, regs, hammers, stanlet knives)	<ul> <li>Cuts</li> <li>Lacerations</li> <li>Puncture wounds</li> <li>Work related upper limb disorders (wrulds)</li> </ul>	<ul> <li>Only trained and experienced Orangebox operatives will use work equipment</li> <li>Correct blades will be used for the correct thickness of materials requires cutting and for the tool</li> <li>Correct drill bits for the cordless drill will be used</li> <li>Kevlar coated general purpose gloves will be worn</li> <li>Safety glasses will be worn</li> <li>Cutting work is planned to eliminate potential error (Orangebox personnel to mark area first before the initial cutting)</li> <li>Only stable surfaces will be used when operating work equipment</li> <li>Occupational health screening</li> <li>Specific WRULD training</li> </ul>	Work prohibited if there are any defects with equipment     Ensure lighting and temperature arrangements are appropriate before work commence (so this does not alter vision or dexterity)     Any additional unforeseeable hazards are reported (without delay)	Service Engineers	Ongoing
Chemicals     Silicone free spray     Deb wipes     Thinners	<ul> <li>Skin problems</li> <li>Respiratory problems</li> <li>Eye problems</li> <li>Ingestion problems</li> <li>Damage to property (fire)</li> </ul>	<ul> <li>Orangebox Personnel will wear a P2/P3 mask</li> <li>Safety glasses to be worn</li> <li>Tasks involving chemical use will be take place in a designated area agreed by the client</li> <li>Non latex gloves will be worn (blue nitrile gloves) when handling thinners</li> </ul>	All service engineers to report any issues with use of hazardous substances     Ensure all MSDS for hazardous substances available from the service vans	Service Engineers	Ongoing

Delivery	
∞	
Installation	

Hazard	Harm	Existing Precautions	Control Measures Recommended	Action by	When
Chemicals	Damage to environment (incorrect disposal)	Minimal use of chemicals will be used COSHH Risk Assessment and MSDS Sheets available Occupational health checks all employees (skin / lung function) Will ensure any waste is removed from site			
Air Tools / Equip  Pneumatic pistol grip tool  Staple gun	Air embolus     Bruising     (airline)	Airlines maintained and fitted with O rings     Discontinue and report any defective equipment	For service engineers to ensure airlines are regularly serviced and maintained	Service Engineers	Ongoing
Electricity	Electric shock     Electric burns     Broken bones (loss muscle control)     Dislocated joints     Thermal burns     Fire     Other injuries associated with trip hazards	<ul> <li>Only Orangebox work equipment to be used by trained operatives</li> <li>Equipment will be fit for purpose and suitable for the task Equipment will be inspected before use</li> <li>Any defects will be reported asap and equipment will not be used</li> <li>Portable equipment will be P.A.T tested</li> </ul>	To ensure modification work is prohibited if there are any defects with the electrical components of the jigsaw	Service Engineers	Ongoing
Slips/Trips	<ul><li>Strains</li><li>Sprains</li><li>Broken bones</li><li>Loss of consciousness</li></ul>	<ul> <li>Orangebox personnel to keep tasks requiring use of electrical equipment to a minimum and eliminate any potential trip hazards during and after use</li> <li>Ensure no slip hazards within the area</li> <li>All handrails provided will be used</li> </ul>	Report any slip / trip hazards outside     Orangebox control to the client	Service Engineers	Ongoing

Hazard	Harm	Existing Precautions	Control Measures Recommended	Action by	When
Manual Handling	<ul> <li>Musculoskeletal disorder</li> <li>Strains</li> <li>Sprains</li> <li>Back injuries</li> <li>Joint injuries</li> <li>Degeneration</li> <li>Bone injuries</li> <li>Splinters (wood)</li> </ul>	<ul> <li>Service Engineers to use running sheets and work is planned and supervised by Senior Service Engineer (this will determine how many engineers are required for the job and facilities available (i.e. lifts)</li> <li>Service Engineer to liaise with the client</li> <li>All Orangebox staff trained in Manual handling</li> <li>Use of mechanical aids available (sack trucks, pallet trucks, dolly boards, casters)</li> <li>Any equipment of the client required Orangebox will seek authorisation first</li> <li>Manual pallet trucks serviced and maintained and undergo thorough test and examination</li> <li>Service engineers report / discontinue any defective equipment</li> <li>PPE – Steel toe safety shoes mandatory</li> </ul>	<ul> <li>Avoid lifting the load when possible</li> <li>Assess the load at all times</li> <li>Reduce the load (make smaller) where possible</li> </ul>	Service Engineers	Ongoing
Fire	<ul><li>Injuries (various)</li><li>Death</li><li>Property loss/ damage</li></ul>	<ul> <li>Client to carry out site Induction</li> <li>Orangebox personnel to be accompanied by host Orangebox personnel to use signing/ in and signing out procedures and to notify host upon arrival and leaving the premises</li> <li>Orangebox personnel to follow site specific instructions</li> </ul>	Service Engineers to familiarise themselves with emergency evacuation signage and suitable exit routes	Service Engineers	Ongoing
Temperature  Cold temperatures associated with tasks undertaken outdoors	<ul><li>Fatigue</li><li>Gradual loss of awareness of risk</li></ul>	<ul> <li>High Visibility waterproof clothing will be worn</li> <li>Gloves will be worn</li> <li>Client to provide as much shelter as possible</li> </ul>	Service Engineers to establish where rest room and hot drinks could be obtained from	Service Engineers	Ongoing

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)		

Delivery & Installation

Hazard	Harm	Existing Precautions	Control Measures Recommended	Action by	When
Compressed Air Compressor	Air embolus	<ul> <li>Compressor regularly serviced and maintained Contains pressure relief valves</li> <li>Team leader report / discontinue any defective equipment</li> </ul>	Service Engineers continue to ensure equipment is serviced and maintained (speak with H&S Officer/maintenance)	Service Engineers	Ongoing
Falls  • Materials falling from height (construction, warehouse, stores)	Head injuries (various)	<ul> <li>Hard hats will be worn</li> <li>Familiarisation visit to take place, host to warn of foreseeable hazards</li> </ul>	N/A	N/A	N/A
Lone Working	• Various	<ul> <li>Mobile phones provided to all Service Engineers</li> <li>Installation and Service work normally a 2 person job</li> <li>Scheduled times planned and supervised by Senior Service Engineer</li> <li>Service and Installation work is not specified as a high risk activity (i.e. work with electricity, working at height)</li> <li>Communication and co-operation will take place between the client and Service Engineers to minimise the risk</li> </ul>	<ul> <li>Service engineers to bring any specified high risk work activity to H&amp;S Officers attention</li> <li>Risk assessment to be undertaken</li> </ul>	Service Engineers	Ongoing
Vehicles & Pedestrians  Fatigue (long hours)  Collision other vehicles (poor weather conditions, darkness)	<ul><li>Injuries (various)</li><li>Death</li></ul>	<ul> <li>Driving safely training</li> <li>Driver safety checks</li> <li>All vehicles serviced and maintained</li> <li>Overnight stays for longer trips</li> <li>Regular breaks</li> <li>Shared driving</li> <li>Observe clients sites safety rules (speed limits, one way) systems, signage, crossings, etc)</li> <li>Drop off times are normally agreed between customer services and the dispatch manager and monitored (jobs, locations are planned)</li> <li>Drivers undergo medicals</li> </ul>	Service engineers to report any accidents / near miss incidents without delay to H&S Officer and host	Service Engineers	Ongoing

Hazard	Harm	Existing Precautions	Control Measures Recommended	Action by	When
Noise	<ul><li>Hearing damage</li><li>Hearing loss</li></ul>	<ul> <li>Tasks involving equipment that emits high levels of noise to be conducted in a remote area / segregated from other people</li> <li>Work to be planned and agreed with host</li> <li>Limited exposure to high levels of noise</li> <li>Hearing protection will be worn</li> </ul>	Service Engineers to report any high levels of noise without delay	Service Engineers	Ongoing

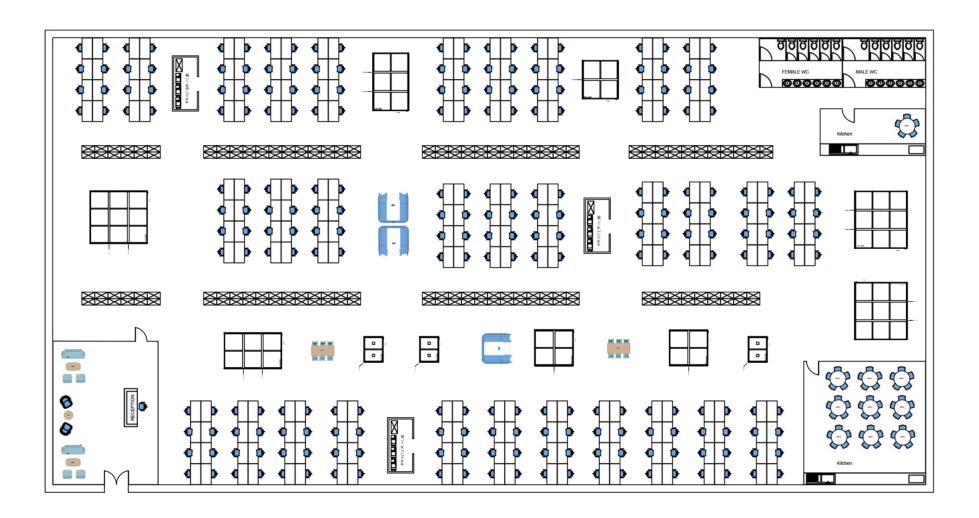
Specific risk assessment required	Fire	МН	COSHH	Noise	Work at Height	PPE	WRULD	Other
Who Could Be Harmed? (tick)	Employees	Visitors	Contractors	Public	Young Persons/ Inexperienced	Disabled	Lone Workers	New Mothers/ Pregnant
Additional Notes  Orangebox are Safecontractor approved Orangebox personnel have received CSCS training								

Reviewed By	
Review Date	

# Delivery & Installation

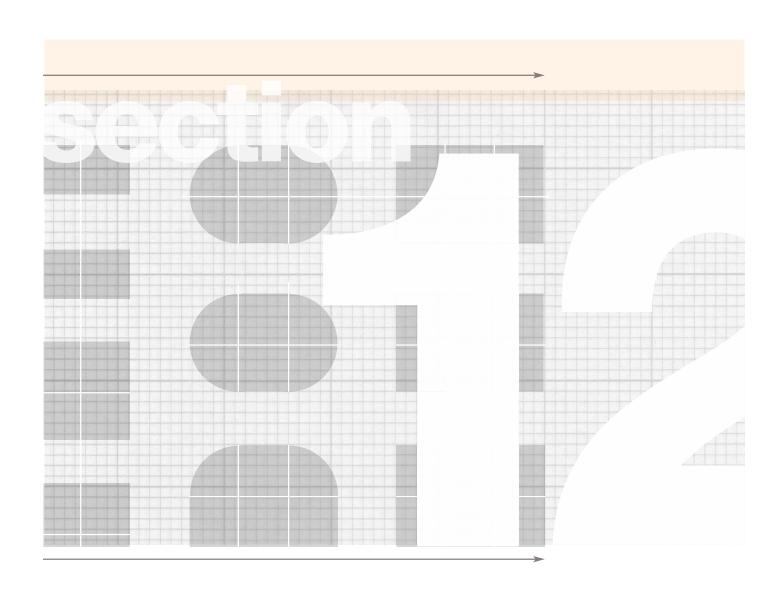
### Plans:

It is recceomended that plans are produced as part of the D & I Process to identify to the install teams, the exact locations of the pods, power / floor box locations, door locations etc..





# Care & Cleaning [aftercare of your pod]



### Maintenance

### How to care and maintain your product

#### Maintenance of the Glass

We recommend Bohle glass cleaning spray, used in conjunction with lint free cloths.

### Maintenance of Upholstery Panels

The upholstery panels should be vaccumed to remove any dust. If staining occurs the upholstery should be vaccumed then wiped with a soft damp cloth.

#### Get to it QUICKLY!

If a spot, spill or stain occurs, it must be cleaned quickly! It may become difficult or impossible to remove if allowed to set.

#### Fluids

Remove fluids immediately from the surface and do not let them penetrate the cushion or furniture construction.

#### Solids or Semi-Solids

Carefully remove as much of the solid or semi-solid substance (such as mustard) as possible, with a flat object - such as a butter knife or spatula. Then vacuum to remove as much of the stain as possible, before using a cleaning agent.

### Large or Unusual Stains

See a reputable professional cleaning service.

Pre-test a small, hidden area with cleaning agents. You may have to test several agents before finding one suitable for use with the fabric / stain.

- Only use a small amount of cleaner applied with a dampened towel to avoid spreading the stain or shrinking the fabric.
- Work in from the outside edge to the centre of the stain.
- Blot the cleaning agent on, DO NOT RUB, or you may damage the fabric.
- Remove the cleaning agent by rinsing the fabric and blotting it dry with an absorbent cloth, paper towel
  or sponge once the stain is removed.
- · Allow the fabric to dry.
- Check for colour change once the fabric is dry.
- · Check for Shrinkage once the fabric is dry.

### The rest of your Fabric

Spot and stain removal may also remove accumulated soil from the fabric. The newly cleaned area may look different from the rest of the fabric. If this is the case you may have to clean it's entire surface.

### Care & Maintenance of Wood / Melamine / Polyurethane Furniture

Using typical furniture polish with a fine cleaning cloth.

### Maintenance of the Rubber Cable Covers.

The rubber can be wiped with a soft, damp cloth.



### **Standards**

[our policy of standards]



### Standards UK & EU

Our product complies to the correct standards across the UK, EU & US

#### Roof panels:

BS EN13501-1:2007 - TBC

#### Textiles:

**Camira - Synergy** 

BS EN 1021-1 Cigarette **PASS PASS** BS EN 1021-2 Match **PASS** BS 7176: Low Hazard NF D 60-013 (AM 18) **PASS UNI 9175** CLASSE 1 IM ÖNORM B 3825 Burning Behaviour **PASS** 

BS EN 13501-1 (ADHERED) Class D. s1. d0 BS EN 13501-1 (UN-ADHERED) Class E, s2, d0

**Gabriel - Europost** 

**BS476** Part 7 Class 1

BS 5852 Can be treated to Crib 5 at additional cost

BS 7176 Medium Hazard

Camira - Blazer

**PASS** BS EN 1021-1 Cigarette BS EN 1021-2 Match **PASS** BS 7176: Low Hazard **PASS** NF D 60-013 (AM 18) **PASS** CLASS 1IM UNI 9175 ÖNORM B 3825 Burning Behaviour **PASS** ÖNORM A 3800-1 Smoke Emission **PASS** 

BS EN 13501-1 (ADHERED) Class D, s1,d0

**Kvadrat - Divina3** 

Crib 5 BS 5852 BS 5867 Type B DIN 4102-1 Class B2 BS EN 1021-1 2006 **PASS** 

BS EN13501-1:2007 Class C,s1,d0

#### Plastic drive arm / electrical housings / upholstery mouldings:

UL 94 V0 rated

Plastic decorative covers:

UL 94 HB rated

Plastic extrusions:

UL 94 HB rated

Glass panels - Toughened glass:

BS EN 12150-1: 2000 Thermally toughened soda lime sillicate safety glass

BS EN 12600 - Impact Class 1

Electrical:

BS 6396 Electrical Systems in Furniture

### Designed where required with consideration to the following Fire & Building Codes:

IBC - International building code BS9999 - Code of practise for fire safety BS EN12845 - Fixed Firefighting Systems

Approval Document B - Buildings Regulations 2000

# **DDA Compliance**





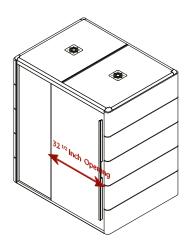
All Orangebox Pods have features to Provide Compliance with:

Approval Document M. - Access to and use of buildings

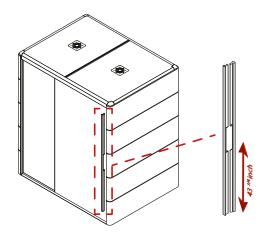
BS 8300 -Design of buildings and their approaches to meet the needs of disabled people -Code of practice

### Compliant Door Opening

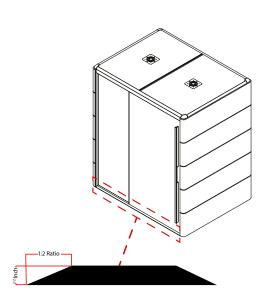
825mm at right angles to an access route.



### Full Length Door Handle With Central Grab Feature Max opening / closing Force 5 Pounds / 22.5N



### Door Access Bottom Track Profile

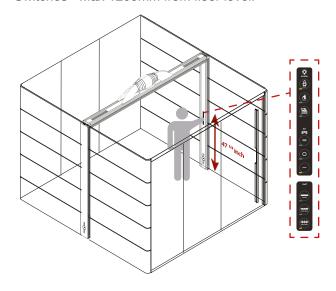


### **User Control Panel**

Switches and socket outlets for lighting & other equipment in habitable rooms at appropriate heights.

Sockets - Min. 450mm from floor level.

Switches - Max 1200mm from floor level.

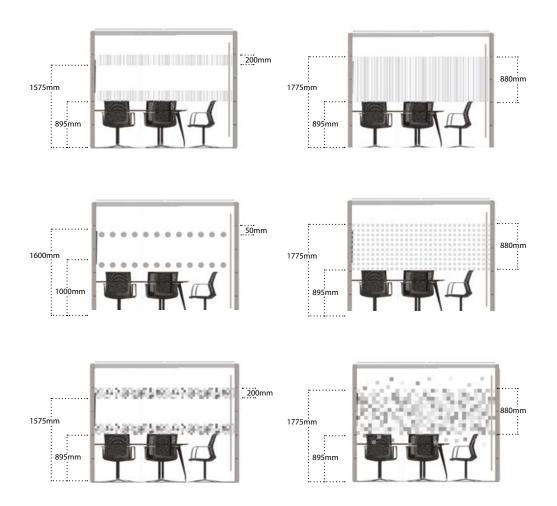


# **Graphics**



To Conform to BS 8300 DDA code of practise - 9.1.5 Glazed Walls & Screens - Approval Document K - Section 7. We recommend you purchase visibility strips from Orangebox for ALL Glass panels of the pod. You can however apply your own design if you prefer. If you don't use Orangebox manifestations then it is your responsibility to ensure they comply with DDA regulations.

ALL Orangebox graphics comply with DDA regulations as above.





### **Environmental**

[recycling programme]



### **Environmental**

### Required information before pods are installed

Orangebox has always been at the forefront of environmental awareness and was the very first UK office furniture manufacturer to achieve ISO 14001.

We are fully committed to continually improving our systems and processes to assure our customers that specific standards are achieved in the design, manufacture and supply of our products.

Furthermore, we aim to provide products which are safe, do not harm people or the environment and meet the purpose for which they are supplied.

These systems and processes are controlled and measured in accordance to the requirements of BS EN 14001:2007, BS EN 9001:2008 and FSC-STD-40-004.

Our business culture and business practices ensure we are making a meaningful contribution to the quality of the local and global environment to ensure the following:

- We drive continual improvement and innovation across both existing and new business developments
- We further develop our evaluation systems to ensure clear monitoring of all our environmental aspects and impact
- We continue to challenge our objectives and implement further improvements plans

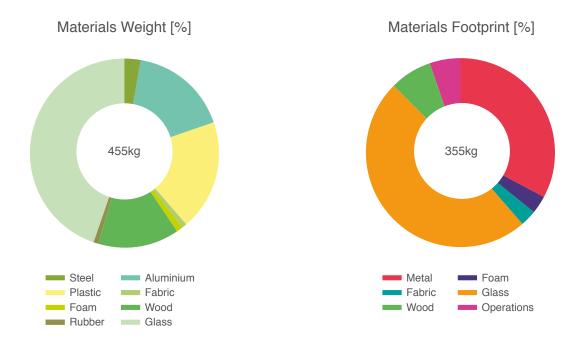
### Minipod fixed roof only



### Life-cycle Breakdown

The footprints look at Environmental impact through the entire life-cycle of the product.







Based on AIR-20 Complies with SKA rating



Orangebox's Footprints were calculated by FIRA's Carbon Footprinter Tool. The technique of Ecological footprint analysis co-originated in the 1990's by Professor William Rees and Dr Mathis Wackernagel.

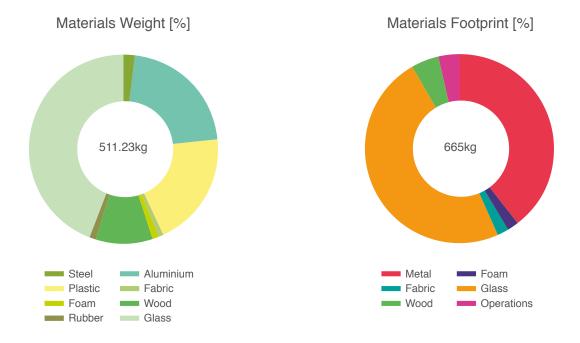
Half square opening roof



### Life-cycle Breakdown

The footprints look at Environmental impact through the entire life-cycle of the product.











Square opening roof



### Life-cycle Breakdown

The footprints look at Environmental impact through the entire life-cycle of the product.



### Materials Weight [%] Materials Footprint [%] 631.28kg 730kg Steel Aluminium Metal Foam Plastic Fabric Fabric Glass ■ Wood ■ Wood Foam Operations Rubber Glass



Based on AIR-25 Complies with SKA rating



Orangebox's Footprints were calculated by FIRA's Carbon Footprinter Tool. The technique of Ecological footprint analysis co-originated in the 1990's by Professor William Rees and Dr Mathis Wackernagel.

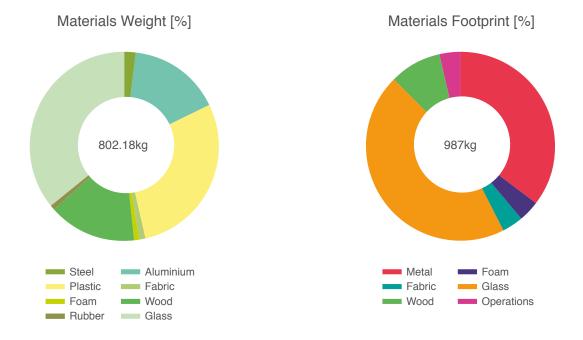
### Rectangle fixed roof

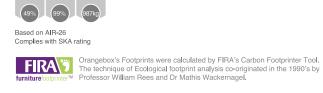


### Life-cycle Breakdown

The footprints look at Environmental impact through the entire life-cycle of the product.







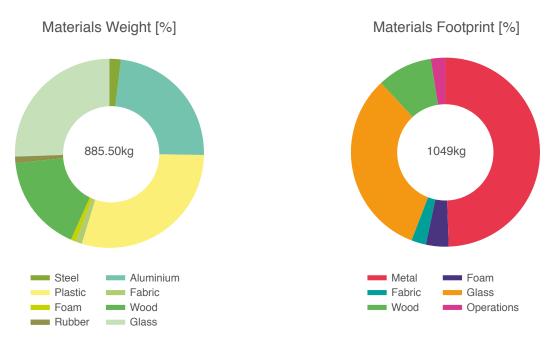
### Rectangle opening roof



### Life-cycle Breakdown

The footprints look at Environmental impact through the entire life-cycle of the product.









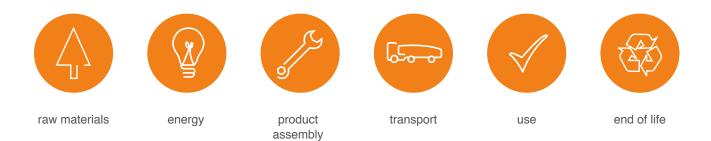
Orangebox's Footprints were calculated by FIRA's Carbon Footprinter Tool. The technique of Ecological footprint analysis co-originated in the 1990's by Professor William Rees and Dr Mathis Wackernagel.

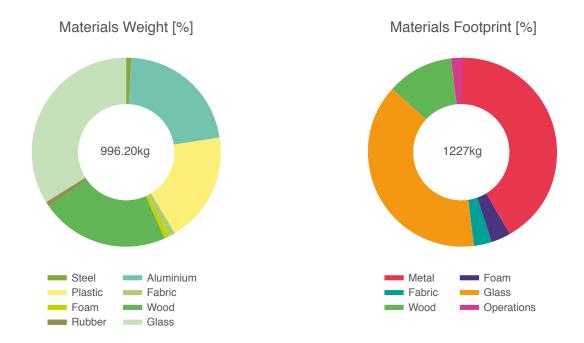
3 x 3 Square fixed roof



### Life-cycle Breakdown

The footprints look at Environmental impact through the entire life-cycle of the product.







Orangebox's Footprints were calculated by FIRA's Carbon Footprinter Tool.
The technique of Ecological footprint analysis co-originated in the 1990's by Professor William Rees and Dr Mathis Wackernagel.

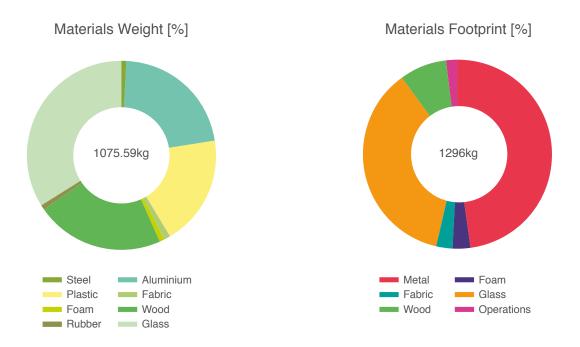
3 x 3 Square opening roof

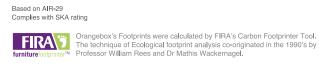


### Life-cycle Breakdown

The footprints look at Environmental impact through the entire life-cycle of the product.









# **Warranty**[aftersales guarantee]



# Warranty

All of our meeting pods are covered under normal conditions of use for a period of 5 years from the date of delivery. To include replacement of all faulty parts to the associated dealer for repairs, assuming reasonable wear and tear.

#### Air<sup>3</sup> Electrics

Pod electrics have a 2 year warranty.

### Air<sup>3</sup> Integrated Tabling

The tables have a 5 year warranty.

### Replacement Parts / Repairs

We aim to repair products supplied in the UK on site, however some products may have to be returned to our factory for inspection.

### Exceptions

- Any damage caused during onward freight, improper storage of the product, or damage caused by accident and normal wear and tear.
- Any abuse, misuse, accident, improper use or in-appropriate handling when moving products.
- Any products or components not installed or re-configured by Orangebox.
- Colour Variations. Orangebox cannot guarantee an exact colour match on any painted metal finish, wood, or guarantee against commercial variance in fabrics, especially on repeat orders.
- Natural product changes changes due to aging or exposure to light.
- Unapproved modifications to the products carried out by the customer.
- · Only approved fabrics listed are covered and all materials are subject to fair wear and tear in use.