

# Virustatic® Shield™ AVM96



## Product Design Document (PDD1)

Version PDD1 18/05/2020

### Virustatic® Shield™ AVM96

#### Antiviral Face Covering with Protective Features



### Shield Security

The QR code attached to each Virustatic Shield checks for a unique number assigned to that individual shield. Scanning goes to a secure site that checks to see if this number is being accessed for the first time, or if it has been accessed before.



## Materials Data Sheet

### Product information

Information provided by:
Discovery Knitting Ltd Unit B Magna Road South Wigston Leicestershire LE18 4ZH United Kingdom
Email
<a href="mailto:contact@discoveryknitting.co.uk">contact@discoveryknitting.co.uk</a>
Material A
Quality 1050-B – S/Jersey
100% Bamboo Jersey - 190gsm - 150cm useable length and width
Material B
1055-BE – S/Jersey
96% Bamboo 4% Lycra – 210gsm – 160cm useable length and width
Material C
Quality 667-AVE – S/Jersey
95% Viscose 5% Lycra -210gsm – 160cm useable length and width

## Materials Data Sheet

### Material Rational

Please see below rational as to why each material was used in the design process

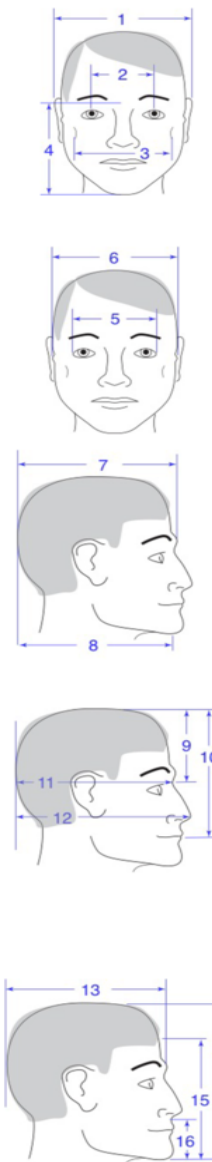
To design a face covering that could be used in an influenza pandemic
Easily mass produced with simple manufacturing process
Functional across the population (children to adults, varying sized heads)
No fit testing required. Sizes 40,45 & 50cm
Functional and easy to wear (don & doffing)
Lightweight and breathable for long periods of use in pandemic situation
Single layered material with active ingredient coated onto the surface to replace multilayer high pressure drop design masks
Materials chosen through process of elimination
Materials chosen for hydrophilic nature
Materials chosen for stretch ability, texture, breathability/low pressure drop
Materials chosen on functionality and there pre-existing use in the market place
Materials chosen as they were readily available and in mass production
Materials chosen on costs

# Sizing Data Sheet

## Virustatic Shield Head Chart

Centimeters					
Percentiles	1st	5th	50th	95th	99th
<b>1</b>	<b>Head breadth.</b> The maximum breadth of the head, usually above and behind the ears.				
Men	13.9	14.3	15.2	16.1	16.5
Women	13.3	13.7	14.4	15.0	15.8
<b>2</b>	<b>Interpupillary breadth.</b> The distance between the centers of the pupils of the eyes (the eyes are looking straight ahead).				
Men	5.7	5.9	6.5	7.1	7.4
Women	5.5	5.7	6.0	6.9	7.0
<b>3</b>	<b>Face breadth (zygomatic).</b> The breadth of the face, measured across the most lateral projections of the cheek bones (zygomatic arches).				
Men	12.8	13.2	14.0	15.0	15.4
Women	12.1	12.3	12.8	14.0	15.4
<b>4</b>	<b>Face length (menton-sellion).</b> The vertical distance from the tip of the chin (menton) to the deepest point of the nasal root depression between the eyes (sellion).				
Men	10.8	11.2	12.2	13.3	13.7
Women	10.1	10.4	11.3	12.4	12.9
<b>5</b>	<b>Biocular breadth.</b> The distance from the outer corners of the eyes (right and left eicantyn).				
Men	11.0	11.3	12.2	13.1	13.6
Women	10.6	11.1	11.6	12.9	13.3
<b>6</b>	<b>Bitragion breadth.</b> The breadth of the head from the right tragon to the left. (Tragon is the cartilaginous notch at the front of the ear).				
Men	13.1	13.5	14.5	15.5	15.9
Women	12.5	12.8	13.3	14.3	15.0
<b>7</b>	<b>Glabella to back of head.</b> The horizontal distance from the most anterior point of the forehead between the brow-ridges (glabella) to the back of the head, measured with a headboard.				
Men	18.3	18.8	20.0	21.1	21.7
Women	17.5	18.0	19.1	20.2	20.7
<b>8</b>	<b>Menton to back of head.</b> The horizontal distance from the tip of the chin (menton) to the back of the head, measured with a headboard.				
Men	15.7	16.5	18.2	20.0	20.7
Women	15.2	15.8	17.3	18.9	19.6
<b>9</b>	<b>Sellion to top of head.</b> The vertical distance from the nasal root depression between the eyes (sellion), to the level of the top of the head, measured with a headboard.				
Men	9.7	10.1	11.2	12.4	12.9
Women	9.0	9.5	10.5	11.7	12.2
<b>10</b>	<b>Stomion to top of head.</b> The vertical distance from the midpoint of the lips (stomion) to the level of the top of the head, measured with a headboard.				
Men	16.9	17.4	18.6	19.9	20.6
Women	15.7	16.3	17.5	18.8	19.4
<b>11</b>	<b>Sellion to back of head.</b> The horizontal distance from the nasal root depression between the eyes (sellion), to the back of the head, measured with a headboard.				
Men	18.0	18.5	19.7	20.9	21.4
Women	17.4	17.8	18.9	20.0	20.5
<b>12</b>	<b>Pronasale to back of head.</b> The horizontal distance from the tip of the nose (pronasale) to the back of the head, measured with a headboard.				
Men	20.0	20.5	22.0	23.2	23.9
Women	19.2	19.7	21.0	22.2	22.8
<b>13</b>	<b>Head length.</b> The maximum length of the head, measured from the most anterior point of the forehead between the brow-ridges (glabella) to the back of the head (occiput).				
Men	18.0	18.5	19.7	20.9	21.3
Women	17.2	17.6	18.7	19.8	20.2
<b>14</b>	<b>Menton to top of head.</b> The vertical distance from the bottom of the chin (menton) to the midpoint of the hairline (crinion).				
Men	21.2	21.8	23.2	24.7	25.5
Women	19.8	20.4	21.8	23.2	23.8
<b>15</b>	<b>Menton-crinion length.</b> The vertical distance from the bottom of the chin (menton) to the midpoint of the hairline (crinion).				
Men	16.6	17.4	19.1	20.9	21.6
Women	15.5	16.1	17.7	19.2	19.9
<b>16</b>	<b>Menton-subnasale length.</b> The distance from the bottom of the chin (menton) to the base of the nasal septum (subnasale).				
Men	6.1	6.5	7.3	8.3	8.7
Women	5.7	6.0	6.5	7.8	8.3

### Average Head Sizes



Inches					
Percentiles	1st	5th	50th	95th	99th
<b>1</b>	<b>Head breadth.</b> The maximum breadth of the head, usually above and behind the ears.				
Men	5.5	5.6	6.0	6.3	6.5
Women	5.2	5.4	5.7	5.9	6.2
<b>2</b>	<b>Interpupillary breadth.</b> The distance between the centers of the pupils of the eyes (the eyes are looking straight ahead).				
Men	2.2	2.3	2.6	2.8	2.9
Women	2.2	2.2	2.4	2.7	2.8
<b>3</b>	<b>Face breadth (zygomatic).</b> The breadth of the face, measured across the most lateral projections of the cheek bones (zygomatic arches).				
Men	5.0	5.2	5.5	5.9	6.1
Women	4.8	4.8	5.0	5.5	6.1
<b>4</b>	<b>Face length (menton-sellion).</b> The vertical distance from the tip of the chin (menton) to the deepest point of the nasal root depression between the eyes (sellion).				
Men	4.3	4.4	4.8	5.2	5.4
Women	4.0	4.1	4.4	4.9	5.1
<b>5</b>	<b>Biocular breadth.</b> The distance from the outer corners of the eyes (right and left eicantyn).				
Men	4.3	4.4	4.8	5.2	5.4
Women	4.3	4.4	4.6	5.1	5.2
<b>6</b>	<b>Bitragion breadth.</b> The breadth of the head from the right tragon to the left. (Tragon is the cartilaginous notch at the front of the ear).				
Men	5.2	5.3	5.7	6.1	6.3
Women	4.9	5.0	5.2	5.6	5.9
<b>7</b>	<b>Glabella to back of head.</b> The horizontal distance from the most anterior point of the forehead between the brow-ridges (glabella) to the back of the head, measured with a headboard.				
Men	7.2	7.4	7.9	8.3	8.5
Women	6.9	7.1	7.5	8.0	8.1
<b>8</b>	<b>Menton to back of head.</b> The horizontal distance from the tip of the chin (menton) to the back of the head, measured with a headboard.				
Men	6.2	6.5	7.2	7.9	8.1
Women	6.0	6.2	6.8	7.4	7.7
<b>9</b>	<b>Sellion to top of head.</b> The vertical distance from the nasal root depression between the eyes (sellion), to the level of the top of the head, measured with a headboard.				
Men	3.8	4.0	4.4	4.9	5.1
Women	3.5	3.7	4.1	4.6	4.8
<b>10</b>	<b>Stomion to top of head.</b> The vertical distance from the midpoint of the lips (stomion) to the level of the top of the head, measured with a headboard.				
Men	6.7	6.9	7.3	7.8	8.1
Women	6.2	6.4	6.9	7.4	7.6
<b>11</b>	<b>Sellion to back of head.</b> The horizontal distance from the nasal root depression between the eyes (sellion), to the back of the head, measured with a headboard.				
Men	7.1	7.3	7.8	8.2	8.4
Women	6.9	7.0	7.4	7.9	8.1
<b>12</b>	<b>Pronasale to back of head.</b> The horizontal distance from the tip of the nose (pronasale) to the back of the head, measured with a headboard.				
Men	7.9	8.1	8.7	9.1	9.4
Women	7.6	7.8	8.3	8.7	9.0
<b>13</b>	<b>Head length.</b> The maximum length of the head, measured from the most anterior point of the forehead between the brow-ridges (glabella) to the back of the head (occiput).				
Men	7.1	7.3	7.8	8.2	8.4
Women	6.8	6.9	7.4	7.8	8.0
<b>14</b>	<b>Menton to top of head.</b> The vertical distance from the bottom of the chin (menton) to the midpoint of the hairline (crinion).				
Men	8.3	8.6	9.1	9.7	10.0
Women	7.8	8.0	8.6	9.1	9.4
<b>15</b>	<b>Menton-crinion length.</b> The vertical distance from the bottom of the chin (menton) to the midpoint of the hairline (crinion).				
Men	6.5	6.9	7.5	8.2	8.5
Women	6.1	6.3	7.0	7.6	7.8
<b>16</b>	<b>Menton-subnasale length.</b> The distance from the bottom of the chin (menton) to the base of the nasal septum (subnasale).				
Men	2.4	2.6	2.9	3.3	3.4
Women	2.2	2.4	2.6	3.1	3.3

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### Sizing Data Sheet

### Virustatic Shield Sizing Chart & Fitting Instructions

Size information
<b>Adult size</b>
Head diameter=50cm/58cm. Size fitting of most adults
<b>XL Size</b>
Head diameter 58/62cm
<b>Slim Fit size</b>
Head diameter 50/55 cm. Fits tightly than normal size. Specifically designed for an optimal fitting in a women's neck.
<b>Junior Child/Baby Size</b>
Head diameter 45/56 cm. Designed to fit most of boys and girls up to 3 and 12

### Virustatic Shield Sizing Chart & Fitting Instructions

Size	Dimensions
<b>(S) Small</b>	"34 -37"
<b>(M) Medium</b>	"38 -41"
<b>(L) Large</b>	"42 - 45"
<b>(XL) Extra large</b>	"46 – 49"
<b>(2XL) Double Extra Large</b>	"50 – 53"