



GLI  PSE





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Product Appearance Concept
+ Language

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The distinctive design of the Aeroflex breathing system places the highest priority on safety. It was designed, engineered and built around the needs of firefighters.

By combining an array of light weight materials, technology, and intuitiveness. Aeroflex increases situational awareness, performance, and safety.

Ergonomically fit for both men and women. You'll notice how easy it is to get in and out of Aeroflex. It conforms to your every movement.

Differences anyone can feel and see.

PRODUCT OVERVIEW

Snag-free Design

Deflection Shield protects the air bottles while minimizing snags from falling debris or wiring.

Lightweight, Low Profile

Carbon fiber air bottles sheds the weight off for greater agility and increased safety.

Customizable Tank Load

Aeroflex provides the option to have one tank or two. A single tanks empty weight is 6 lbs. and lasts for 15 minutes at 4500 psi. The option to add a second tank allows the user to have a full 30 minutes of air.

Lumbar Support

Aeroflex reinforces the user's posture with added lumbar support to aid in comfort and a proper fit.

Universal Ergonomic Fit

Designed to accomodate both men and women fire fighters. Its ergonomic fit and adjustable straps conforms to a wide range of body sizes. It accomodates a 15 - 20 inch range of torsos.

Situational & Physiological Monitoring

The user interface appears to be projected in front of the fire fighter through the use of a convexd lense adhered to the flexible display. Air levels, direction, and temperature are quickly understood.

Adjustability

The pack has handles on the sides that allow the user to ajust the height of the hip belt to fit their torso for proper ergonomic fit.

Environmental Information

Aeroflex uses recyclable and environmentally friendly materials such as carbon fiber, steel, and lithium ion batteries.

TECHNICAL SPECIFICATIONS

Size & Weight

Single Air Bottle	6.75 lbs.
Double Air Bottle	13.5 lbs.

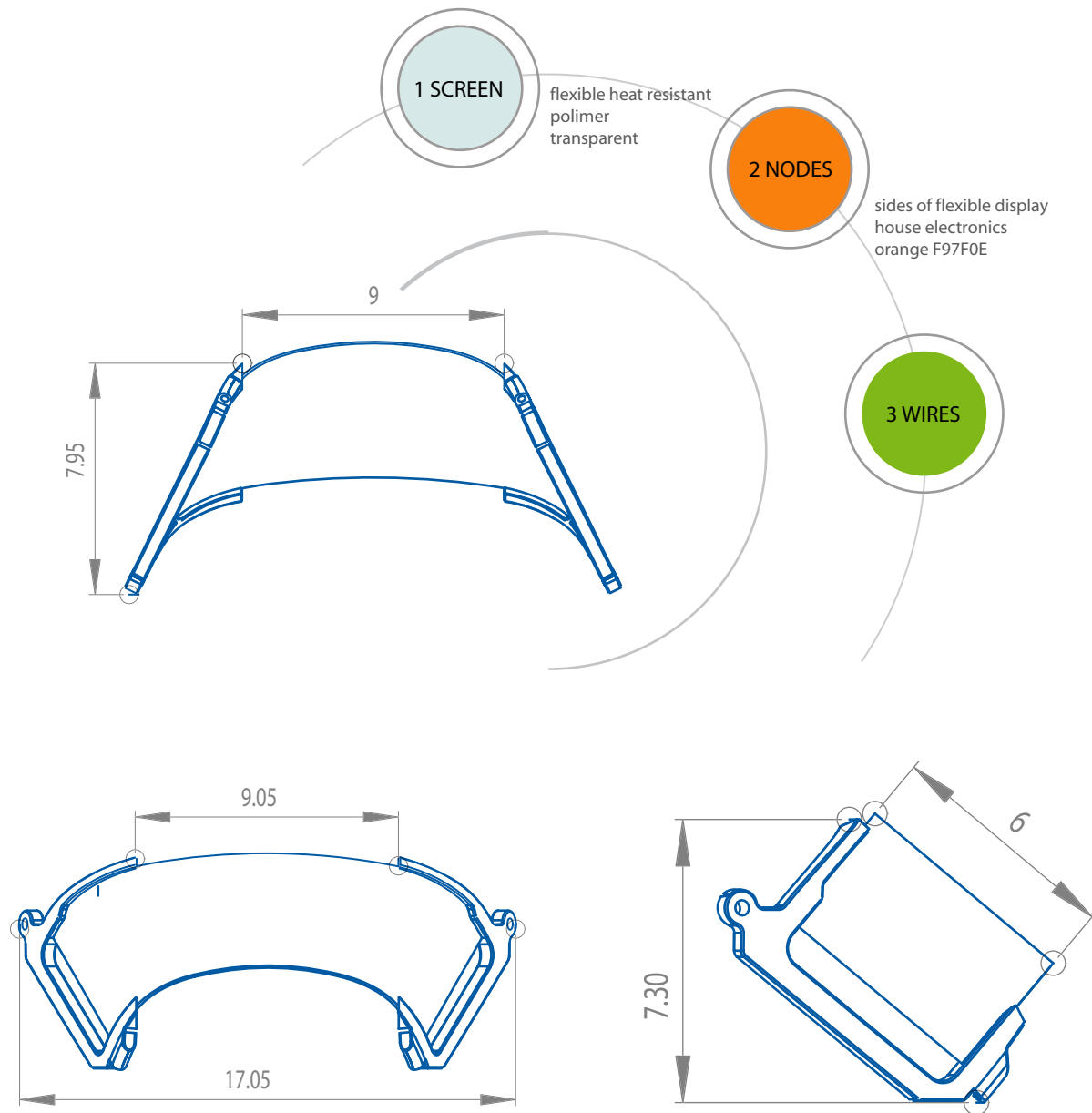
Breathing Time

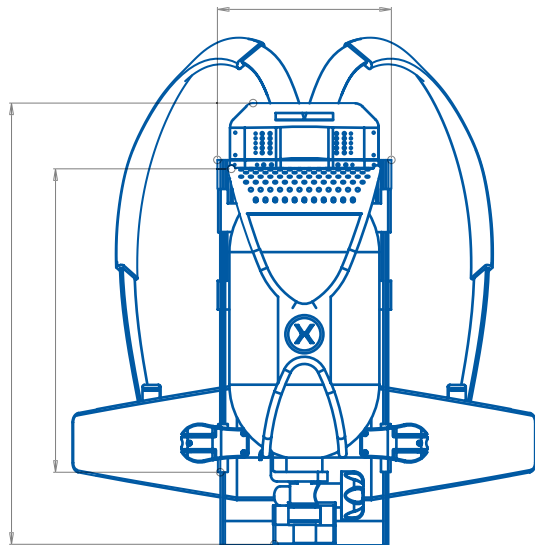
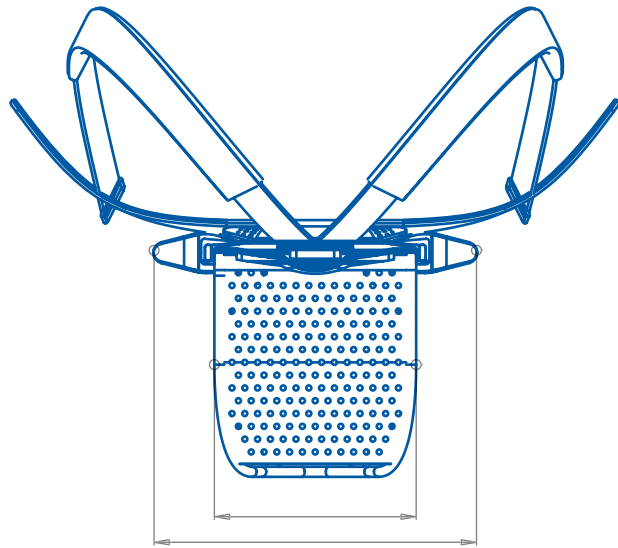
Single Air Bottle	15 min.
Double Air Bottle	30 min.



GRAPHIC + DETAIL SPECIFICATION DRAWING

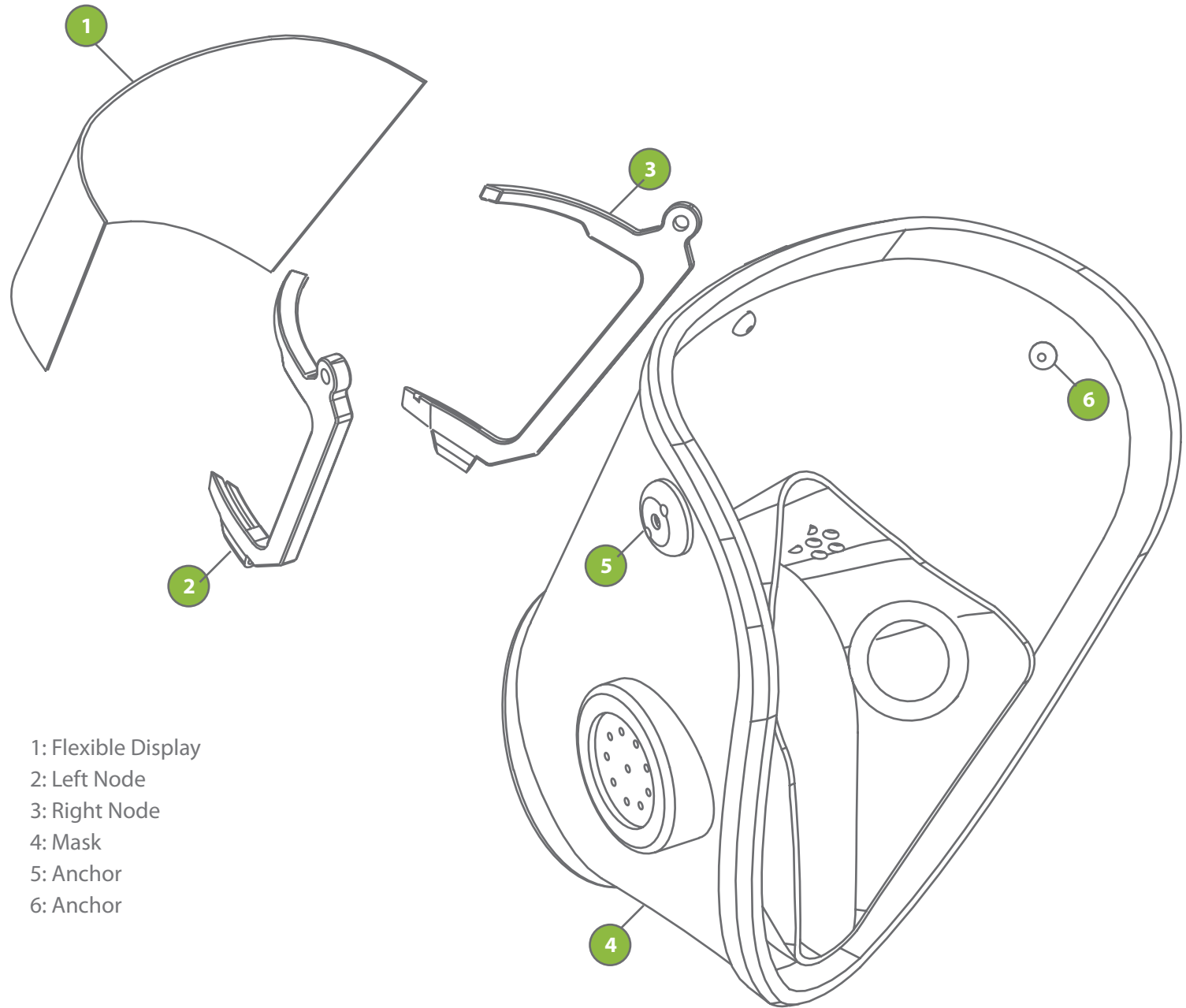
Materials, textures, and colors were derived to create Aeroflex's visual language and style. All materials are rated as standard fire resistant parts in existing equipment. Heat resistant paints and coatings are used to give the colors and textures needed.





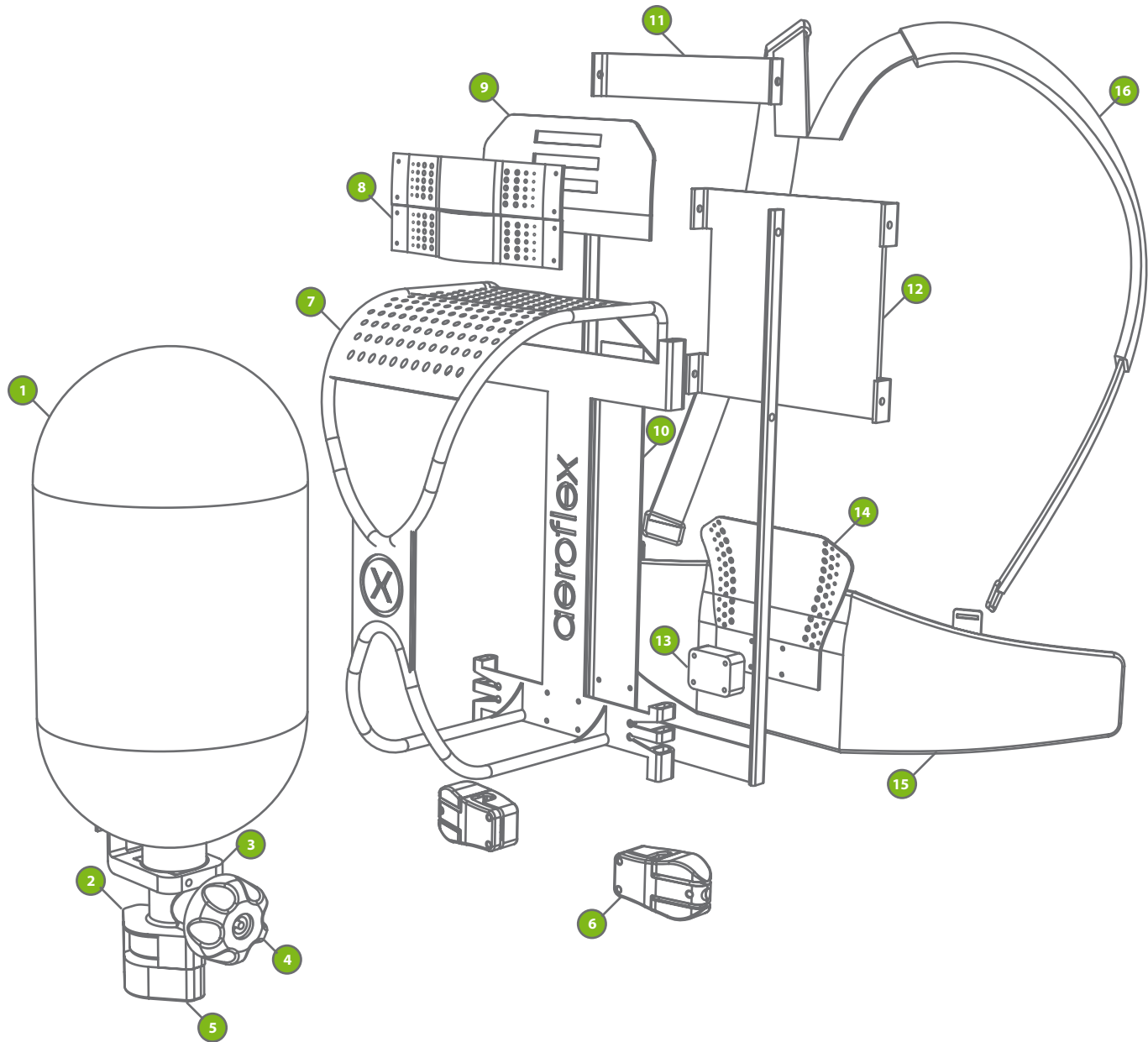
EXPLODED VIEW ILLUSTRATION

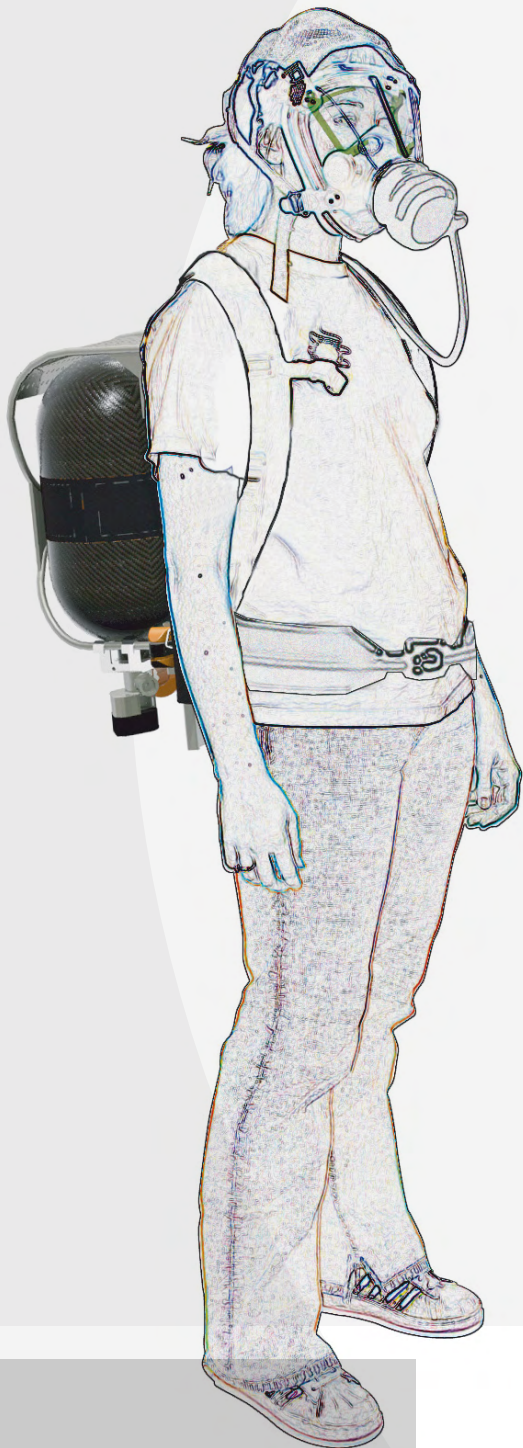
This composition shows all of the standard parts Aeroflex needs to provide the features and functions it contains. Every part interlocks into position to provide the most compact form needed to be carried by the user.



- 1: Flexible Display
- 2: Left Node
- 3: Right Node
- 4: Mask
- 5: Anchor
- 6: Anchor

- 1: Tank
- 2: Valve
- 3: Mounting Bracket
- 4: Pad
- 5: Knob
- 6: Articulation Handles
- 7: Frame
- 8: Deflection Plates
- 9: Tiedown
- 10: Back Plate
- 11: Removable Plate
- 12: Pad
- 13: Elastomer
- 14: Lumbar Support
- 15: Belt
- 16: Straps





USER EXPERIENCE STORYBOARD

Several features aid in the versatility of Aeroflex. The option to add or remove a tank gives the user the choice to carry more or less weight. One tank weighs 6 lbs. (empty weight) as opposed the 9 lbs. (empty weight) of its competitors. A single Aeroflex tank is rated to extend 15 min. in a fire. A second tank provides the ability to have up to 30 min. of air.

5th Percentile Female

Height 4' 11" Weight 88 lbs



Height 4' 11" Weight 229 lbs



50th Percentile Female

Height 5' 4" Weight 97 lbs



Height 5' 4" Weight 250 lbs



50th Percentile Male

Height 5' 9" Weight 140 lbs



Height 5' 9" Weight 253 lbs



95th Percentile Male

Height 6' 2" Weight 148 lbs

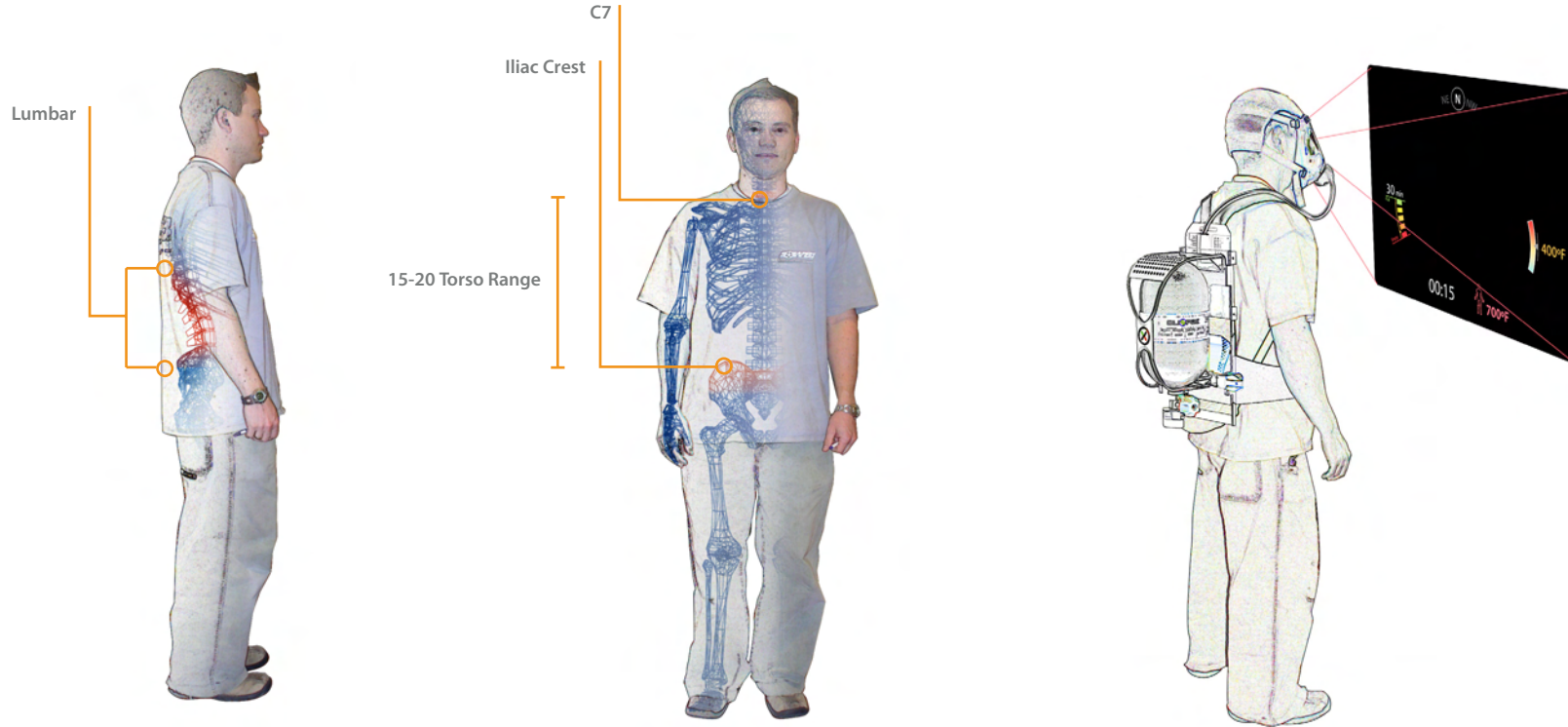


Height 6' 2" Weight 297 lbs



UNIVERSAL ERGONOMIC FIT

Aeroflex's design meet 95 percent of the North American and European adult population. These selected subjects illustrate how peoples' sizes vary.



ADJUSTABILITY & SUPPORT

Lumbar Curve(lower back).

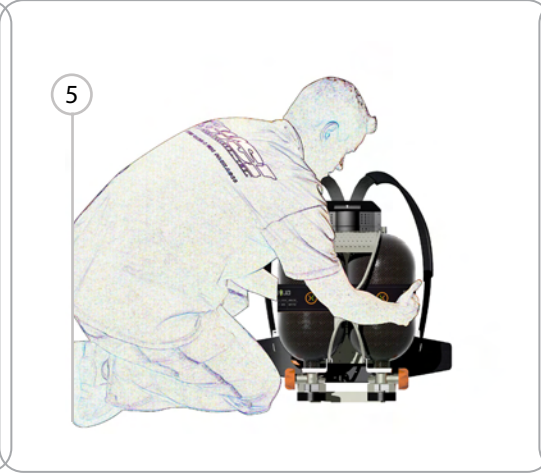
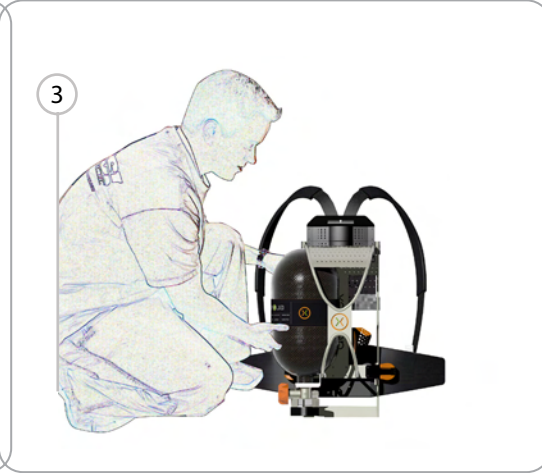
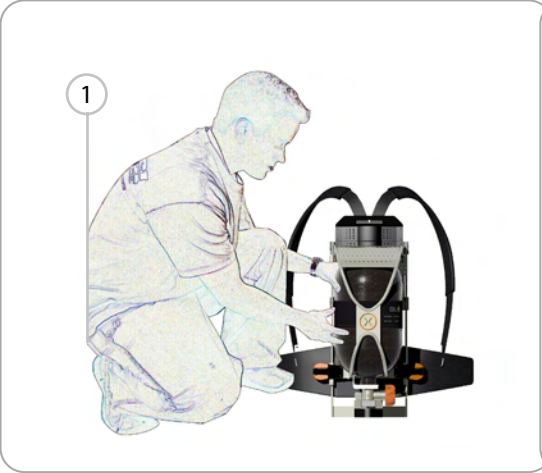
Aeroflex reinforces the user's posture with added lumbar support for proper fit.

Torso Length. Everyone has a different size torso. Torso length is the range from the top of the iliac crest to the C7 vertebrae.



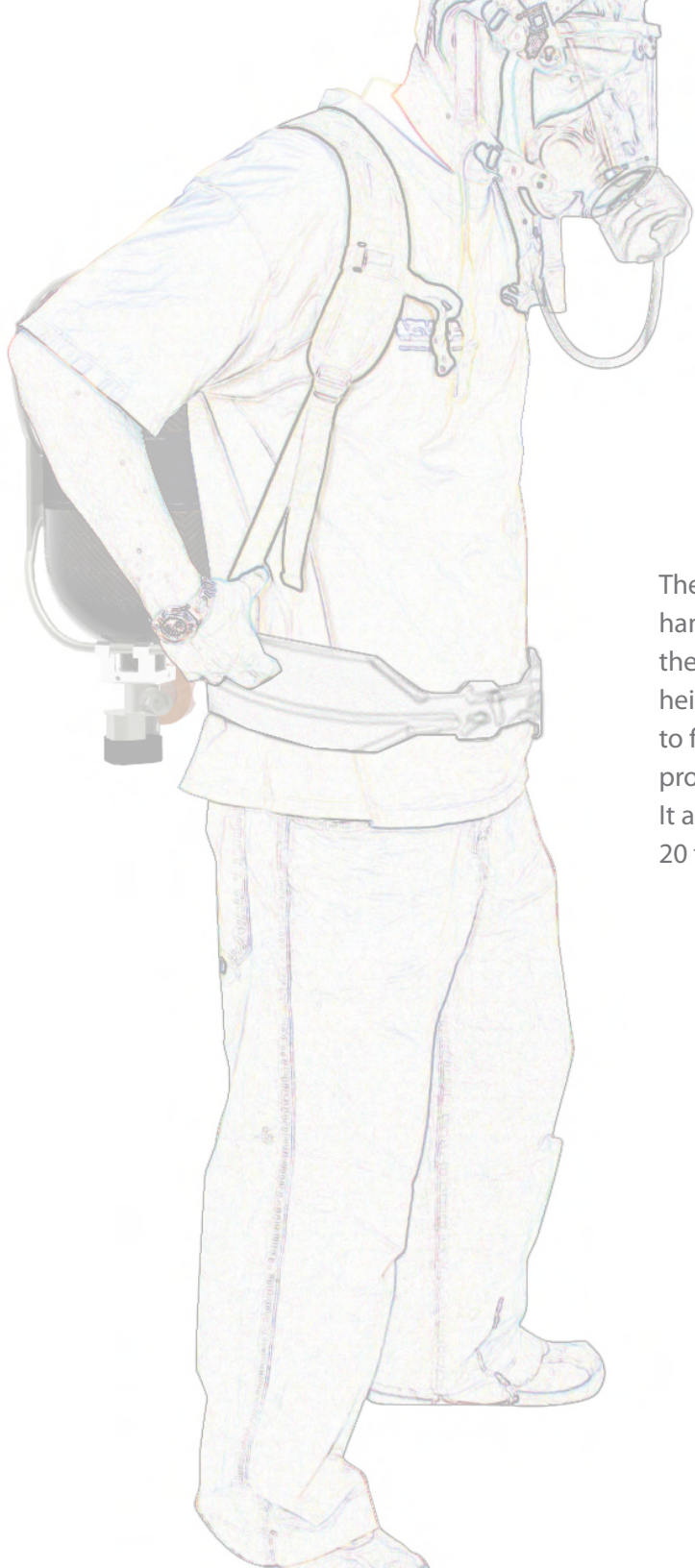
FLEXIBLE DISPLAY

The user interface appears to be projected in front of the firefighter through the use of a convex lens adhered to the flexible display. Air levels, direction, and temperature are quickly understood.

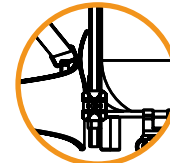
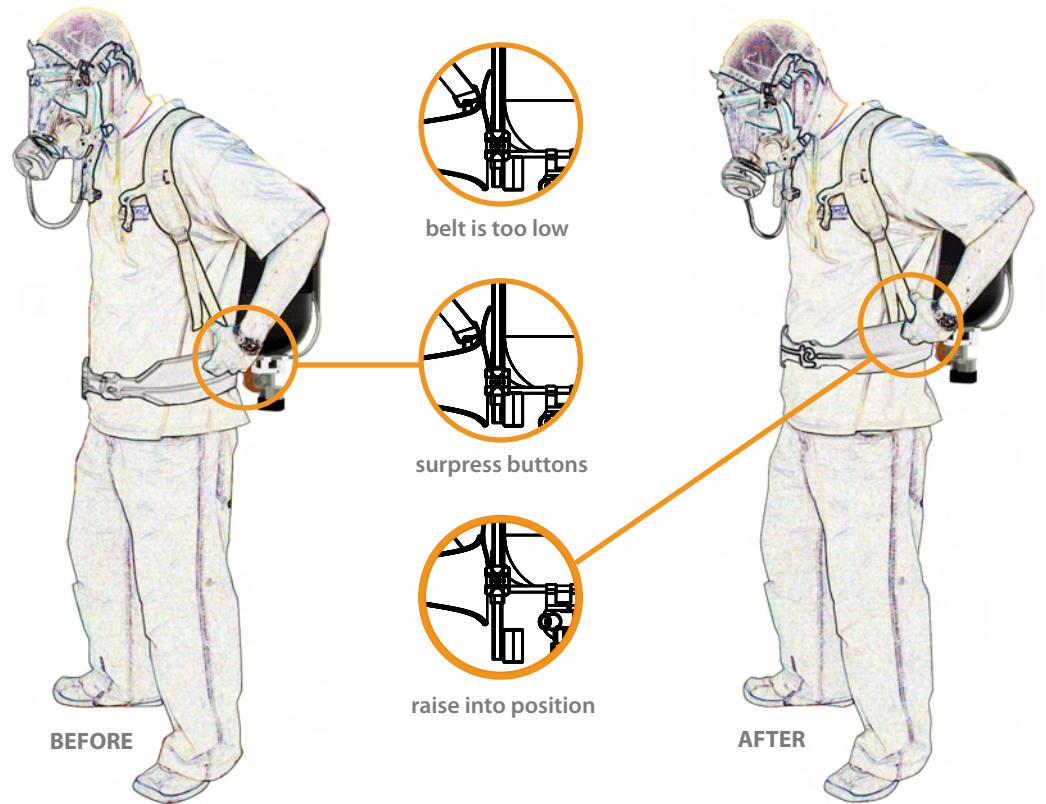


User Storyboard

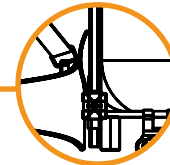
Aeroflex provides the option to have one tank or two. A single tank's empty weight is 6 lbs. and lasts for 15 minutes at 4500 psi. The option to add a second tank allows the user to have a full 30 minutes of air.



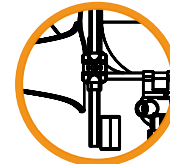
The pack has side handles that allow the user to adjust the height of the hip belt to fit their torso for proper ergonomic fit. It accommodates a 15-20 torso range.



belt is too low



surpress buttons



raise into position

BEFORE

AFTER



AESTHETIC BENCHMARKING

Current products on the market seem to follow a trend of minimalism and engineering. The value of ergonomics and human factors are secondary to function in current packs on the market.

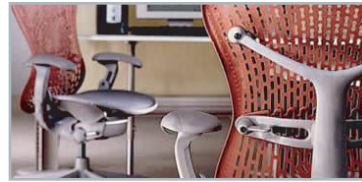


**PRODUCT
APPEARANCE
CONCEPT+ LANGUAGE**

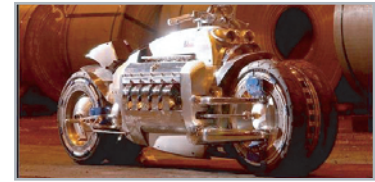
Featherlight. Articulated. Precision. This unique visual language was derived by our design team to amplify the need to reduce weight, increase mobility, and introduce a fine tuned concept into the fire fighting market. It appears to be fast, floating and highly adjustable.



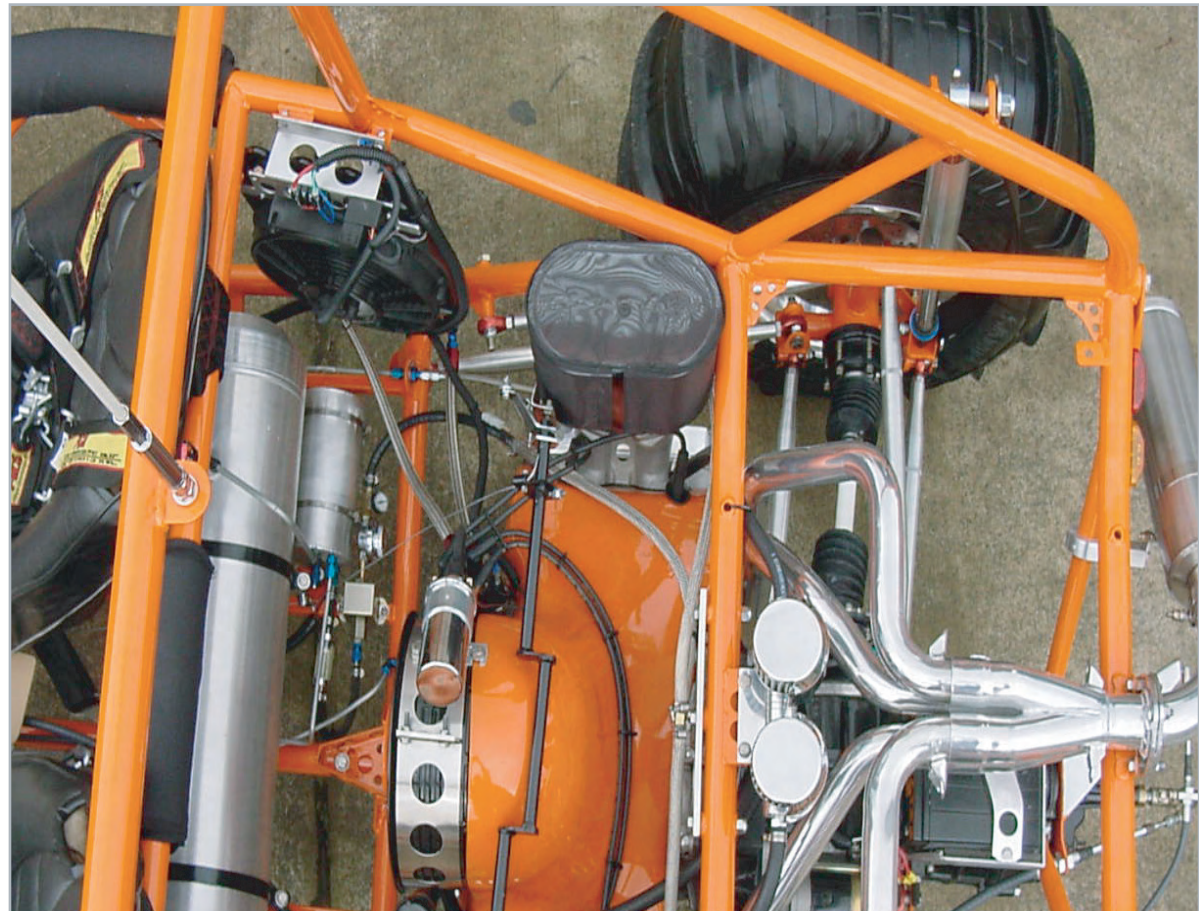
✦ featherlight

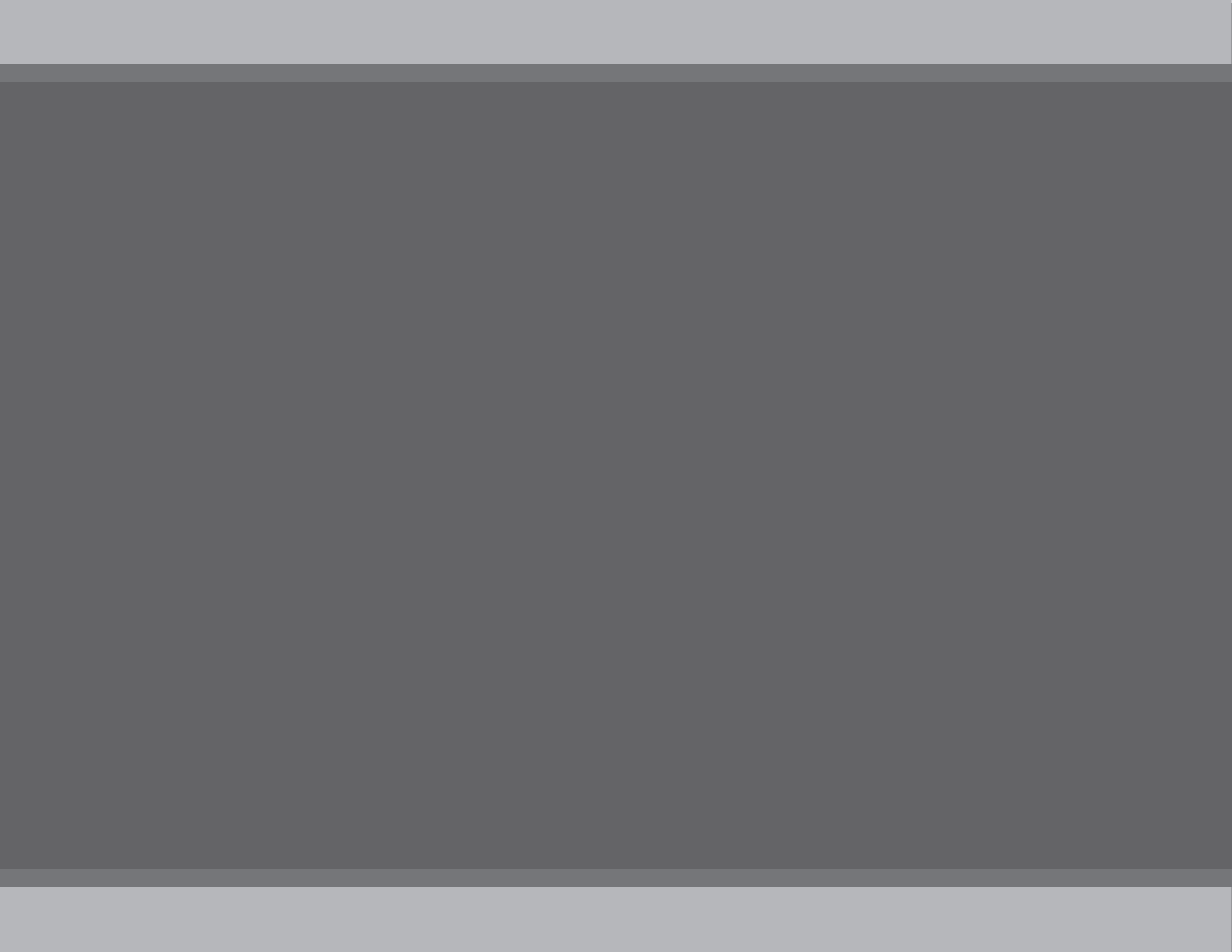


✦ articulated



✦ precision

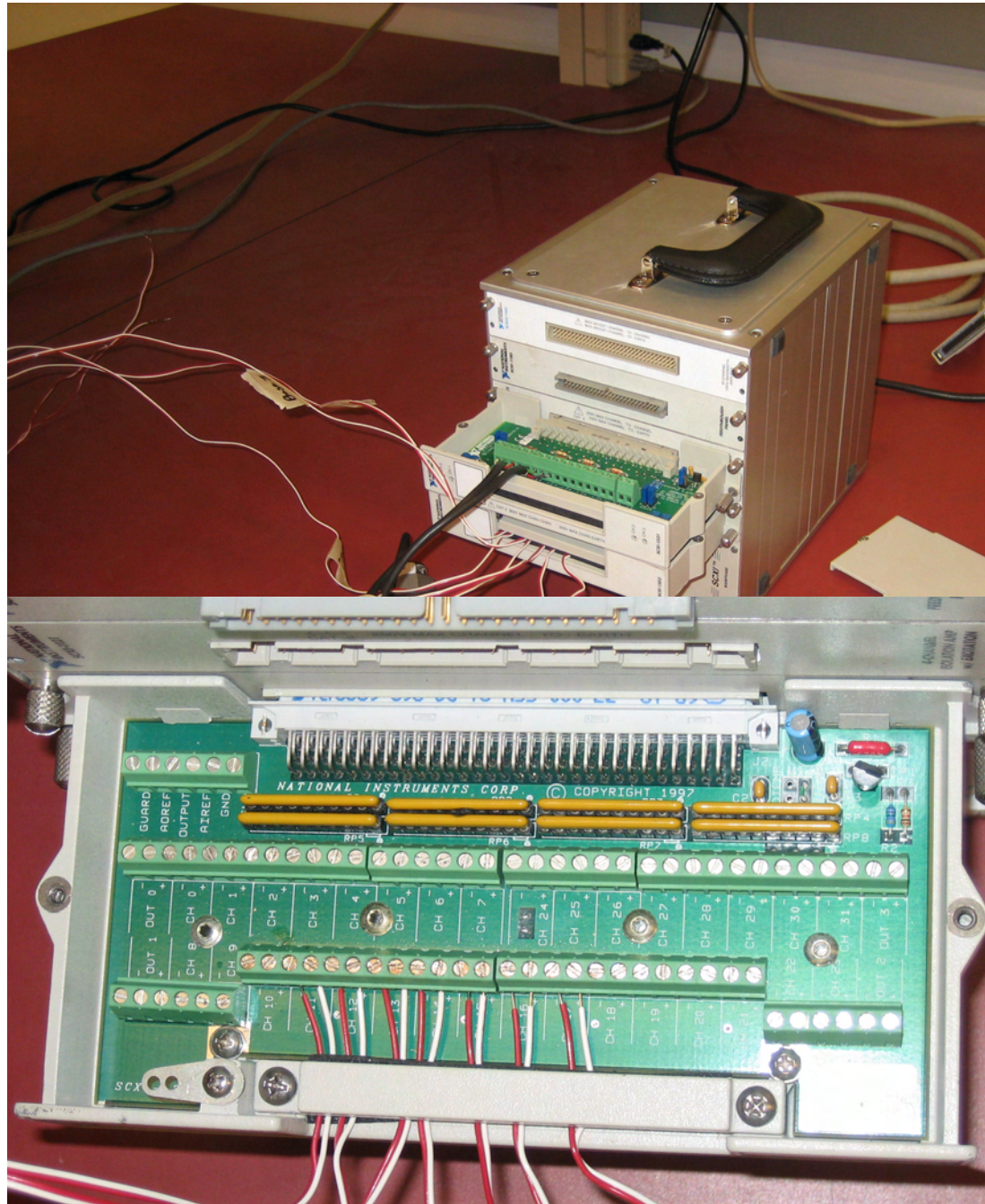




PROOF-OF-CONCEPT PROTOTYPE

The Prototype was tested for all the basic physical and computerized function that were planned to be a part of aeroflex. The adjustability of the pack to different size individual as well as the belt adjustment and the lumbar support were tested to their full extent and their design expectations.

The electrical and sensor system was tested for thermal detection and the monitoring of the breathing rate of the user. The information was finally tested to be displayed and refreshed on the given display.



SIZING MODEL

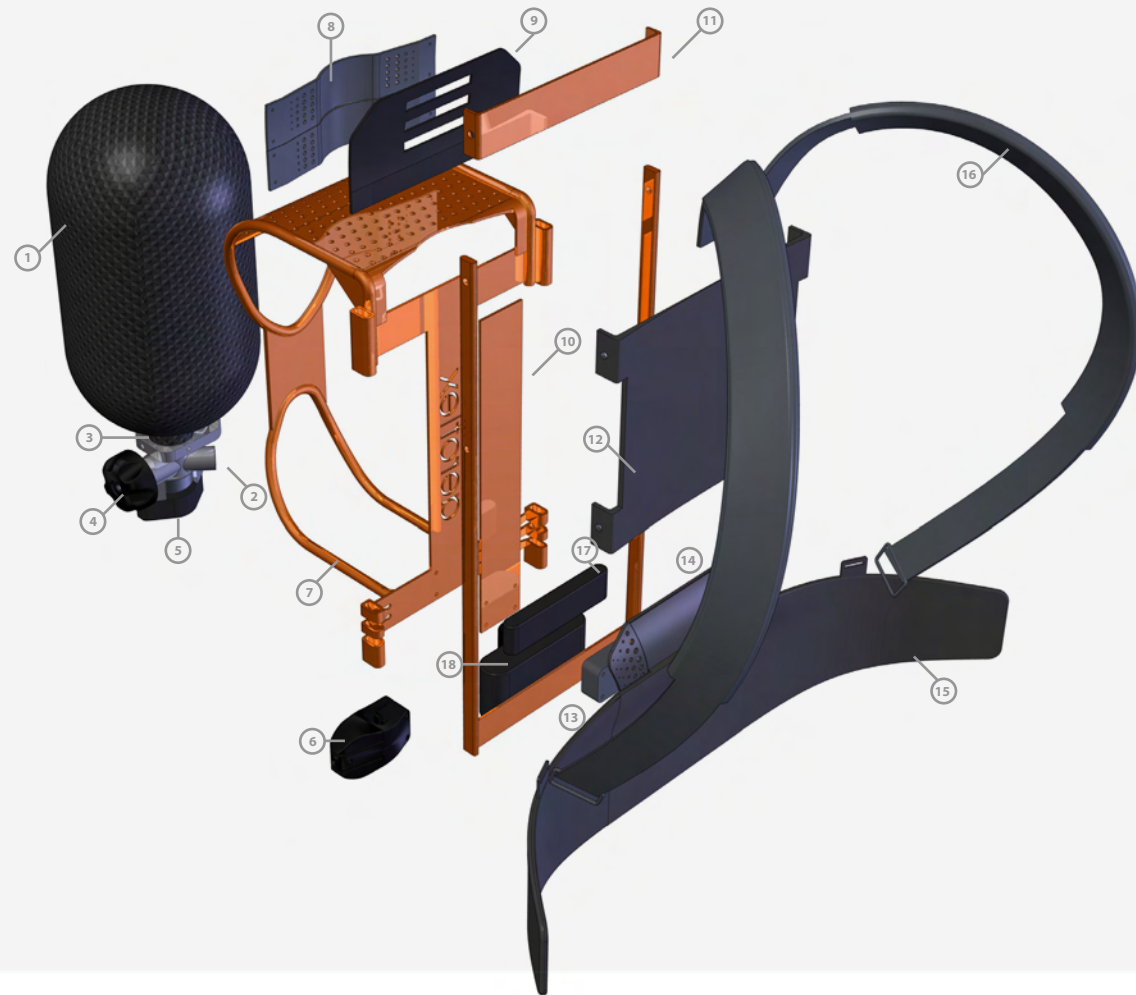
The valve system is similar to ones already on the market as they are already optimized for filling its function in a safe manner.

The tank and the mounting bracket show the first true innovation of Aeroflex. Through the use of composites and metals for pressure vessels, it provides the strength needed while keeping the weight as low as possible.

The adjustable frame which needed the most design had for goal to provide the user with the customizability of modern product with basic features of current self-contained breathing apparatuses.

The adjustable frame slides on top of the support frame which is the guide for the adjustable pieces of Aeroflex.

- | | | |
|-------------------------|----------------------|--------------------|
| 1: Tank | 7: Frame | 13: Elastomer |
| 2: Valve | 8: Deflection Plates | 14: Lumbar Support |
| 3: Mounting Bracket | 9: Tie Down | 15: Belt |
| 4: Knob | 10: Back Plate | 16: Straps |
| 5: Pad | 11: Removable Plate | 17: Battery |
| 6: Articulation Handles | 12: Pad | 18: Computer |



BILL OF MATERIALS

The Bill of Materials describes aeroflex in terms of assemblies and breaks each portion of our product down to simple basic components and parts.

It is a list of all the section of our product and describes how they are made and what they're made of.

The Bill of Materials also contains hierarchical information on the level of importance of the components as well as how they are packaged once the assembly is complete and ready to be delivered to the customer.

Aeroflex Part	Broken Down Part	# of Similiar, Repeating Parts	Material (\$)	Processing (\$)	Cost (\$)
MASK					
Flexible Display	Active Matrix Polymer Driving Electronic	2	x	x	200.00
	Circuit Board		x	x	25.00
PACK					
Chassis	Plate	2	1.42	x	0.64
	Bar	2	0.02	x	1.32
Frame	Top Bar	1	0.02	x	1.00
	Bottom Bar	1	0.02	x	0.98
	Horizonatal Plate	2	0.03	x	2.05
	Vertical Plate	1	0.08	x	7.76
	Deflection Shield	1	0.02	x	0.32
	Padding	1	0.08	x	1.04
Lumbar Support	Plate	1	0.08	x	0.29
Hip Adjustment & Straps	Plate	1	0.08	x	0.29
	Straps	2	x	x	x
Shoulder Straps	Straps	2	x	x	x
Tank Housing	Horizonatal Plate	1	0.03	x	3.07
TANKS					
Cylinder	Carbon Fiber Tank	2	80.65	20.00	603.90
Valve	Pressure Valve	2	6.03	x	0.94
ELECTRONICS & SENSORS					
Pressure Transducer		2	178.65	x	357.30
Thermocouple		2	28.42	x	56.84
POWER					
Batteries		1	x	x	x
PACKAGING					
Box		1	x	x	x
Protective Wrapping		1	x	x	x
Engineering Cost Analysis				Materials	\$1,262.44
				Labor	\$400.00
				TOTAL	\$1662.44

Transport (miles)	% Use*	Energy Use* (Watts)	Hour Use* (hr)
MASK			
		TBA	4380.00
x	x		
PACK			
		NONE	21900.00
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
30	25		
TANKS			
		NONE	21900.00
30	25		
30	25		
ELECTRONICS & SENSORS			
		TBA	4380.00
30	25	NONE	21900.00
30	25	NONE	21900.00
POWER			
		19447.20	10950.00
30	25		
PACKAGING			
		NONE	N/A
30	x		
30	x		

* Over a lifetime



Manufacturing Plan

The Manufacturing Plan is a type of Bill of Material that reflects the product in terms manufacturing procedure and engineering planning. Just like a Bill of Materials, it lists parts, materials used but the Manufacturing Plan then expands as to the type of procedure required to complete the part and or assembly. As part of the Manufacturing plan, it is possible to find the dimensions of each of the parts and lists them in the most convenient order to be assembled.

Engineering Cost Analysis

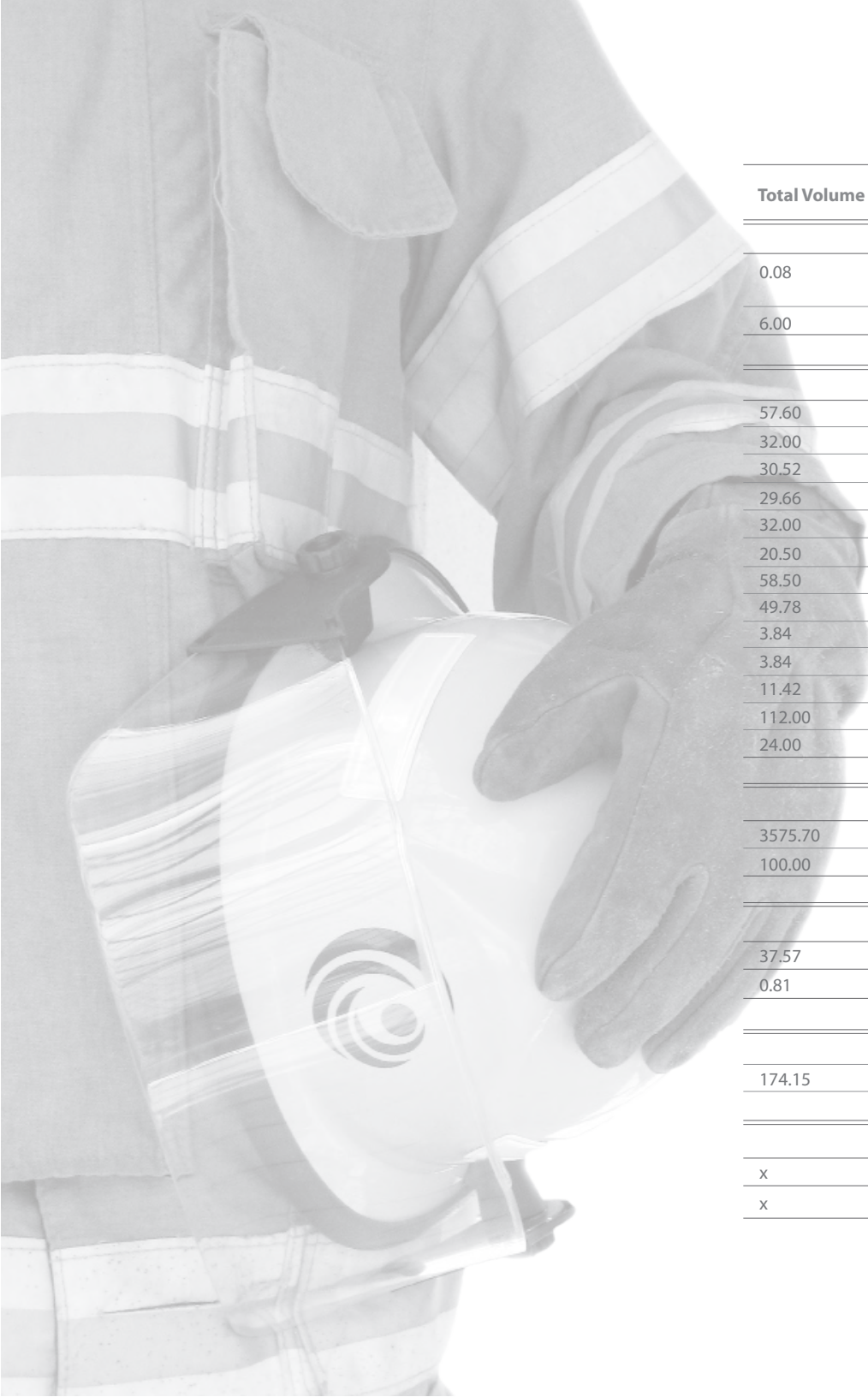
The Engineering Cost Analysis is a type of Bill of Material that reflects the product in terms of volumes of material, weight for each part and establishes what the financial involvement would be if the manufacturing of this part was involved in the making of the product. The cost analysis also elaborates a little more on the cost for the various treatments for the each assembly. A by-product of the Engineering Cost Analysis is the users and manufacturers have a quantitative idea of the financial investment required for each component.

Technical Specifications

The Technical Specifications is a type of Bill of Materials, where each of the list part is described as a shape that is the most advantageous to be used for the given structure as well as the material(s) that is being considered for that part.

The reason for this Bill of Materials is that in the end it will determine the feasibility of the part or the assembly.

Aeroflex	Material	Height (cm)	Width (cm)	Outer Diameter (cm)	Inner Diameter (cm)	Thickness (cm)
MASK						
Flexible Display	Various	2.00	2.00	X	x	0.02
	Various	4.00	5.00	x	x	0.30
PACK						
Chassis	Steel	8.00	18.00	x	x	0.20
	Steel	40.00	1.00	x	x	0.40
Frame	Steel	60.72	x	0.80	x	x
	Steel	59.00	x	0.80	x	x
	Steel	5.00	16.00	x	x	0.20
	PVC	20.50	5.00	x	x	0.20
	Steel	19.5	15	x	x	0.20
	SBR Elastomer	13.75	18.1	x	x	0.20
Lumbar Support	SBR Elastomer	3.84	5	x	x	0.20
Hip Adjustment & Straps	SBR Elastomer	3.84	5	x	x	0.20
	Kevlar	3.00	9.52	x	x	0.20
Shoulder Straps	Kevlar	40.00	7.00	x	x	0.20
Tank Housing	Steel	10.00	12.00	x	x	0.20
TANKS						
Cylinder	Carbon Fiber	29.50	x	16.00	14.00	2.00
Valve	Steel	12.50	2.00	x	x	2.00
ELECTRONICS & SENSORS						
Pressure Transducer	Various	6.15	4.81	x	x	1.27
Thermocouple	Various	1.27	1.27	x	x	0.50
POWER						
Batteries	Various	1.80	21.50	x	x	4.50
PACKAGING						
Box	Cardboard	x	x	x	x	x
Protective Wrapping	PVC	x	x	x	x	x



Total Volume (cm3)	Density of Material (kg/cm3)	Weight of Part (kg)	Manufacturing Process
0.08	0.0011'0	0.0001	Integrated Circuit Mix
6.00	0.002300	0.0138	Integrated Circuit Mix
57.60	0.007799	0.4492	Extrusion, Machining, Welding
32.00	0.007799	0.2496	Extrusion, Machining
30.52	0.007799	0.2380	Extrusion, Machining, Welding
29.66	0.007799	0.23'3	Extrusion, Machining, Welding
32.00	0.001300	0.2496	Cutting, Welding
20.50	0.007799	0.0267	Injector Mold
58.50	0.007799	0.4563	Extrusion, Machining, Welding
49.78	0.007799	0.3882	Injector Mold
3.84	0.007799	0.0299	Injector Mold
3.84	0.007799	0.0299	Injector Mold
11.42	0.001439	0.0164	Welding
112.00	0.001439	0.16'2	Welding
24.00	0.007799	0.1872	Cutting, Welding
3575.70	0.001500	5.3649	Wrapping
100.00	0.007799	0.7799	Machining, Mold
37.57	x	0.0500	Final Product
0.81	x	0.0500	Final Product
174.15	x	1.2000	Final Product
x	x	1.0000	Final Product
x	x	0.5000	Final Product

OKALA IMPACT FACTOR

The Okala Impact Factor Assessment builds up from the Bill of Materials and the Manufacturing Plan. Each of the basic parts and components for a product will have some form of impact on the environment.

The assessment is established from the materials, manufacturing method, and recyclables of the components. The impact of each parts is then added up and displayed as an impact factor over the lifetime of the product as well as the impact for each hour of use.

Aeroflex Part	Broken Down Part	Material (lb)	Manufacturing	Transport (ton/miles)	Total Impact				End of Life
Mask									
Flexible Display	Active Matrix Polymer Driving Electronic	x	230.00	0.00000	142.60				Landfill
	Circuit Board	x	230.00	0.00035	713.00				
Pack									
Chassis	Plate	24	1.42	0.00674	23.78	25.76	1.68	24.15	Recycle
	Bar	24	0.02	0.00374	13.21	14.31	0.94		
Frame	Top Bar	24	0.02	0.00357	12.60	13.65	0.89	37.93	Recycle
	Bottom Bar	24	0.02	0.00347	12.24	13.26	0.87	37.93	
	Horizonatal Plate	20	0.03	0.00374	11.01	0.02	15.09		
	Vertical Plate	33	0.08	0.00040	1.94	1.70			
	Deflection Shield	24	0.02	0.00684	24.15	26.16	1.71	29.43	
	Padding	35	0.08	0.00582	29.97	6.17			
Lumbar Support	Plate	35	0.08	0.00045	2.31	1.70			Landfill
Hip Adjustment & Straps	Plate	35	0.08	0.00045	2.31	1.70	5.80		Landfill
	Straps	99	x	0.00045	0.00				
Shoulder Straps	Straps	99	x	0.00025	0.00				Landfill
Tank Housing	Horizonatal Plate	20	0.03	0.00242	8.26	0.01	15.09		Recycle
Tanks									
Cylinder	Carbon Fiber Tank	40	80.65	x	214.60				Recycle
Valve	Pressure Valve	20	6.03	0.01170	15.61	0.94	0.94		Recycle
Electronics & Sensors									
Pressure Transducer		N/A	178.65	0.00165	0.00				Recycle
Thermocouple		N/A	28.42	0.00165	0.00				Recycle
Power									
Batteries		x	x	0.03969	66.19				Recycle
Packaging									
Box		14	x	0.03308	16.83				Recycle
Protective Wrapping		41	x	0.01654	24.42				Landfill
Okala Impact Factor					Total Product Impact		1612.86		
					Total Impact per hour of use		41.48		

Social & Environmental Claims

Glimpse contributes to a clean environment by choosing to use materials which are inherently better for the environment, in terms of processing, manufacturing, and disposal, whenever feasible.

Glimpse utilizes and supports government funded programs created for the advancement of technology, such as the Flexible Display Center at Arizona State University.

Glimpse will not tolerate the use of child or slave labor in the production of any of its products, nor in the production of parts acquired from other companies.

Glimpse upholds high moral and ethical standards within every aspect of their operations, which will not concede to bribery, misleading claims, financial dishonesty, or any other fraudulent act.

Glimpse ensures the highest quality and safety within their products by conducting thorough tests and inspections prior to distribution in order to provide safe and reliable equipment to emergency response teams within our communities.





THE BRAND IDENTITY

The Aeroflex brand identity reflects a bold, passionate, and friendly personality. To allow for flexibility across various mediums and applications, simplicity remains a key factor in the communication strategy.

THE BRAND STRATEGY

The brand strategy aims to bring brand and product awareness through communicating a cohesive language and brand experience.

THE BRAND MESSAGE

The brand message of Aeroflex revolves around safety and mobility. Because of the extreme nature of the environment that firefighters face, Glimpse aimed to create a product that protects the people that protects us.

Core Essence. "Passionate pursuit of improving the quality of life"
Core Brand Attributes. Simple. Innovate. Sustainable.

POSITIONING

Positioning Statement. Aeroflex embodies the passionate spirit of our users. AeroFlex is a breathing system that provides increased safety and mobility to fire fighters in the United States. Through its unique combination of carbon fiber based air bottles and flexible display technology, AeroFlex provides a lightweight, low profile solution that minimizes physical stress, improves situational awareness, and ensures better performance.

DIFFERENTIATION

Aeroflex is differentiated through its use typography, color, and descriptive name choice. It's unique, yet simple approach aims to communicate the simplicity of Aeroflex. "Simplicity goes a long way," states a Chicago firefighter upon conducting an interview.

MEANING

The Aeroflex brand means something. Aeroflex not only strives to provide firefighters with increased safety but seeks to communicate the brand's commitment to sustainable principles

THE BRAND NAME

Aeroflex was inspired by the word aerodynamics. It instantly communicates the features and benefits of our product to our users and provides positive visual associations and meanings that uniquely positions our product in the marketplace.

MEANINGS + ASSOCIATIONS

Aero. Air. Short for aerodynamic flow, velocity, motion. aeronautics, aerospace, engineering.

Flex. Flexible Display. Flexibility

Arrow Symbol. Communicates active motion which translates to mobility. Used as a mnemonic device with Aero to aid in memory retention. Represents a move towards a better future.

Green Color. Symbolizes our commitment to sustainable principles. Associated with health, nature, safety, and go.

Orange Color. Used to differentiate ourselves from the competition. Associated with freshness, health, and visibility



LOGOTYPE + SIGNATURE DESIGN

The logotype is simple, sustainable, and memorable.

SYMBOL

The symbol will replace the logotype in the future.

COLOR



TYPOGRAPHY

The typographic treatment conveys simplicity and approachability. It works with a range of sizes and covers the range of application needs. It differs from the competition and compatible with the signature.

Avant Garde

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789

Myriad Pro

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789



IMPLEMENTATION TIMELINE

The timeline illustrates what will happen within a given year as Glimpse introduces Aeroflex into the market through various media forms.

TOUCHPOINTS

The touchpoints are places that we can reach our influencers and decision makers to bring awareness about our brand and product.



Primary Touchpoints

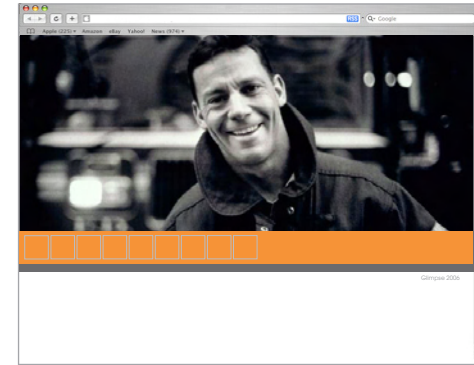
●
College Universities (ASU...)
Community Colleges
Chandler Fire Academy
Phoenix Fire Academy
Fire Stations

●
Firehouse Magazine
Fire Chief
Fire Apparatus
Fire Engineering

●
Firehouse World 2008
Fire Rescue International

BUILDING BRAND IDENTITY

The Aeroflex brand identity uses a consistent color throughout for simple, easy brand recognition. By minimizing the number of colors used, the brand identity will be easier to manage across various platforms.



- Brochure
- Packaging
- Website
- Tradeshow
- Print Ads
- Labels



	GLI PSE				30 Minutes TC-SU 4236-206 10019-3000 DOT - E ALT665-9816		aeroflex
					PART NUMBER	MFG/TEST DATE	
	127177631	05.09.06	58943	6.75 LB Max	514 Min CU. IN	5000 PSIG	

CONFIDENCE

Knowing that Aeroflex will be there the whole way through.



Advance. Precise. Secure.

The distinctive design of the Aeroflex breathing system places the highest priority on safety. It was designed, engineered and built around the needs of firefighters. Ergonomically fit for both men and women. You'll notice how easy it is to get in and out of Aeroflex. It conforms to your every movement. Differences anyone can feel and see.

aeroflex
Safety. Like No Other.



aeroflex
Safety. Like No Other.



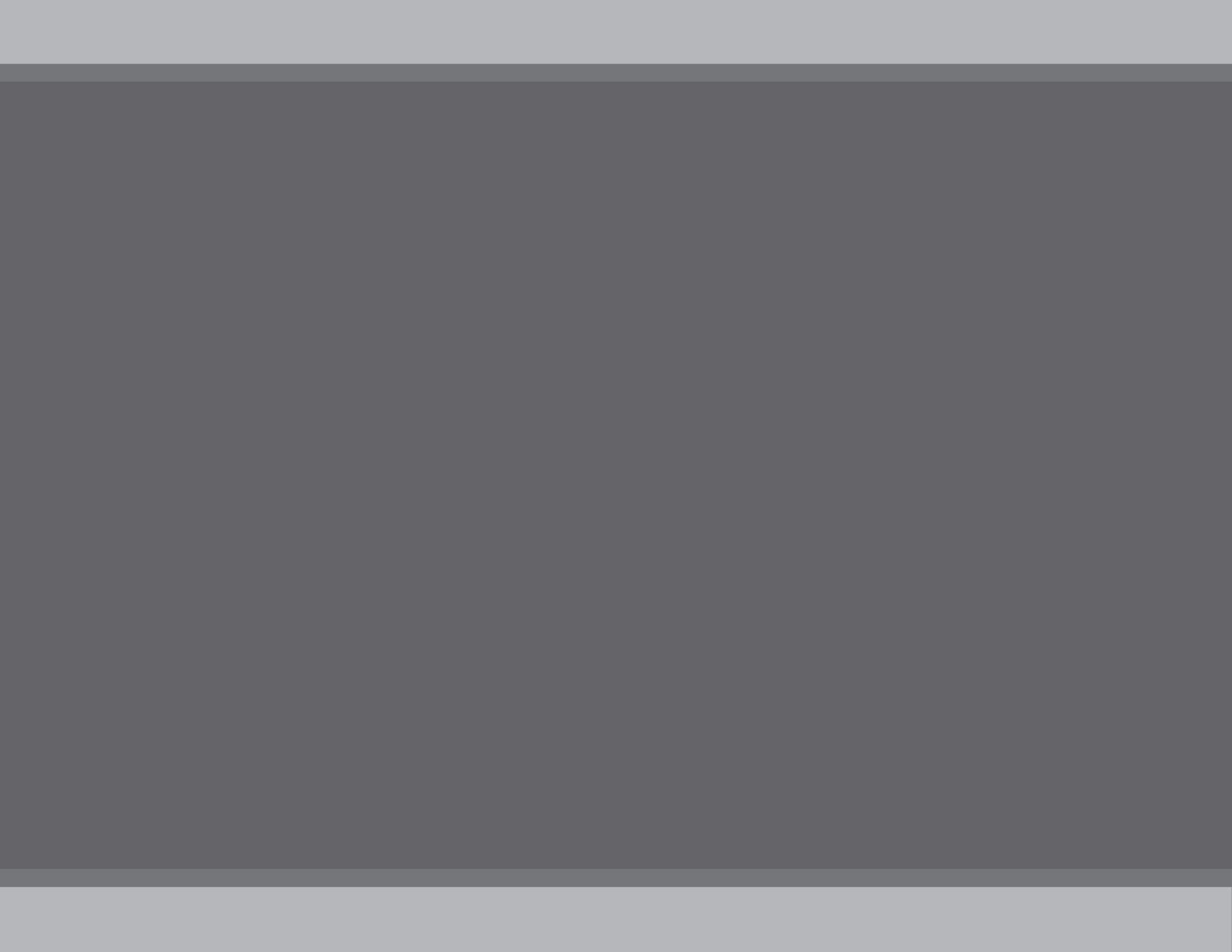
Advance. Precise. Secure.

The distinctive design of the Aeroflex breathing system places the highest priority on your safety. It was designed, engineered and built for your search and rescue needs.

By combining an array of light weight materials, technology, and intuitiveness. Aeroflex increases situational awareness, performance, and safety.

Ergonomically fit for both men and women. You'll notice how easy it is to get in and out of Aeroflex. It conforms to your every movement.

Differences anyone can feel and see.



SITUATION ANALYSIS: EXTERNAL ENVIRONMENT

POLITICAL/LEGAL

Several events have occurred within the past few years, which have put a national focus on emergency response teams, and their performance. The most prominent of these events was the September 11th attacks. This breach of our national security has not only raised many flags in regard to the United States' safety and defense measures, but also the manner in which emergency response personnel respond to these events. Response efficiency and effectiveness have been a cause for concern, not only with the 9/11 attacks, but, even more so with Hurricane Katrina.

After disaster struck in New Orleans and the surrounding area, many felt the response time was unexplainably long. Although there were state and legal factors which hindered the response time, additional glitches in the system were noted. These events, as well as other emergency events, such as the Oklahoma Bombing, riots, and the Southwestern United States' yearly fires draw attention to the emergency rescue field. Firefighters have received much attention from most of these events, especially the September 11th attacks.

Right now, firefighters in the United States are seen as heroes, and there is a desire to support the people responsible for helping us, as citizens, when we are in need.

The government also wants to support firefighters in the United States, not only because the demand is there, but also because the performance of these heroes reflects on them as well. The division of the government in charge of fire departments is part of the Department of Homeland Security. It is called the United States Fire Administration. (USFA). Their focus is finding specific problems that result in firefighter fatalities. Thus, their goal is to reduce these fatalities by twenty-five percent in the next five years, and fifty in the next ten.

This group, as well as other government sectors has developed grant programs to directly benefit fire departments throughout the country:

Fire Management Assistance Grant Program

- Pay for 75% of the proposed program (state must pay remainder)

- Intended for disaster & widespread fire situations

Assistance to Firefighters Grant Program (AFG)

- Based on financial need
- Awarded directly to a state fire department
- Intended to be used to enhance their ability to protect the health and safety of the public and firefighting personnel with respect to fire and fire-related hazards

ECONOMIC

Fire Prevention and Safety Grant (FP&S)

- Mission is to "enhance the safety of the public and firefighters"
- Authorized to fund firefighter safety research and development
- No cost share requirement

There are quite a few restrictions and requirements for applicants, which are still being explored at this time. These requirements change from year to year, and must be re-evaluated before applications are submitted. Interest in the emergency response fields can be attributed in a large capacity to the past and current events

occurring not only within the United States, but also abroad. This interest not only brings awareness, but also produces funds. This combination will prove to be beneficial to the development and promotion of the Aeroflex System.

Quick Statistics

GDP – Real Growth Rate: 3.5% (2005 est.)

GDP – Purchasing Power Parity: \$12.41 trillion (2005 est.)

Current Account Balance: -\$829.1 billion (2005 est.)

Budget:

Revenue: \$2.119 trillion

Expenditures: \$2.466 trillion

Imports: \$1.727 trillion f.o.b.

Exports: \$927.5 billion f.o.b.

Labor Force: 149.3 million (including the unemployed)

Unemployment Rate: 5.1% (2005 est.)

Industries of Interest (to Glimpse):

Highly diversified and technologically advanced industries

Steel

Electronics

- www.cia.gov

The status of the United States economy has been a concern for many since the widespread onset of terrorist attacks not only within the country, but also abroad. The United States imports many of the goods available within the country, and thus depends on threatened countries for daily needs. However, the country's economy has stabilized and begun to grow once again. That said, the United States is largely in debt, and many programs are susceptible to cuts in funding. Educational programs and social security are currently major areas of controversy, and more funds are being allocated for national security. These extra funds may benefit the business interests of Glimpse as fire departments are a part of the national security budget.



Quick Statistics
1,096,900 firefighters in the United States

73% of firefighters in the United States are volunteers

Out of 105 facilities in the United States, 80 are volunteer run

51% of women firefighters have problems with their gear fitting

About 6,200 women work as full-time, career firefighters

United States Fire Administration

SOCIOCULTURAL

It seems that since the beginning of the profession, firefighters have been heroes within our society. Today, this sentiment is even stronger due to the recent events; the September 11th attacks, Hurricane Katrina, and widespread natural fires. Not only do firefighters have great respect and admiration within the community, but they also appeal to a sense of patriotism.

There is, what some may deem, a fire protection subculture. Within this subculture, there is a hierarchy or social classes among the fire departments. Large departments, mainly those in well populated areas, are usually among the elite and most well funded departments, while small departments, mainly those in rural areas, are usually less funded. Based on this assumption, the top ten cities are as follows:

1	New York	8,104,079
2	Los Angeles	3,845,541
3	Chicago	2,862,244
4	Houston	2,012,626
5	Philadelphia	1,470,151
6	Phoenix	1,418,041
7	San Diego	1,263,756
8	San Antonio	1,236,249
9	Dallas	1,210,393
10	San Jose	904,522

*estimates for 2004 populations found at www.census.gov

These are the cities that would most likely be able to afford the Aeroflex System upon its release. However, further analysis into the state budgets will be necessary.

INDUSTRY COMPETITIVE ANALYSIS

Although fire safety market is a niche market, it also seems to be a highly competitive market. The fire safety equipment market is part of the medical appliances and equipment industry. This is a \$163 billion market with several niches, and favorable statistics. Price per earnings is at 43.3, the average net profit is 11.2%, and the return on equity is 12.7%. These figures, coupled with a fairly inelastic market, are some good signs for investors. The fire safety equipment industry already has quite a few stakeholders, and the competition appears to be growing as technology grows.

Competition At A Glance

- MSA
- ISI
- Scott
- Interspiro
- Drager
- Survivair

Right now, some of the major players are Mine Safety Appliances (MSA), International Safety Instruments (ISI), Scott, Interspiro, Drager, and Survivair. MSA and ISI have the most comprehensive product selection at the moment, and distribute SCBAs. Both distribute air supply packs. Both are international companies. ISI boasts of having “the fastest SCBA on the planet” and incorporates newer LED technology on their air supply units. However, through our interviews, MSA seems to be the name most known throughout the industry. This makes them our biggest competitor.

Mine Safety Appliances (MSA) holds a very strong place in the market. In 2004, they claimed a gross profit of \$340,400,000, and net sales of \$852,509,000. A little over a quarter of their sales come from air supplied respirators. They have grown substantial within the past three years, and continue to grow. This may be attributed to their investment in research and development. MSA spent \$22.6 million on research and development in 2004 along. With these strong financials, MSA also has a strong corporate identity. Their core value is to “protect human life and health, ensure that every product functions effectively to aid those who use them, and always

operate our business in an ethical and humane manner.” The products offered with this backing include self-contained breathing apparatuses, air purifying respirators, thermal imaging cameras, potable gas detectors, fire helmets, protective eyewear, and fall protection/rescue and confining space equipment.

New products include a thermal imager, fire helmet, gas detection device, and a pass and hud transmitter. MSA also provides maintenance and repair services, as well as fundraising help. Being in the market for over fifty years has given MSA the experience, respect, and relationships necessary to be successful in achieving their goals and living up to their core value.

TECHNOLOGY

Technology is the driver behind Aeroflex. It will be considered and used in every aspect of the pack in order to create a competitive and innovative new product. The major forms of technology will be seen in the use of a flexible display, modern materials, circuit boards, thermocouples, and pressure transducers. Each item, with the mild exception of the flexible display, is well tested and proven reliable, and each will be used to provide the user with more information and safety in the field.

Listed are some of the technologies which pertain to the Aeroflex System. All have been explored in order to ensure the technology used in our product is possible, sustainable and affordable.

SUPPLIERS

Flexible Display Center, ASU

Our sponsor, who is partnered with the EV Group, Honeywell, Kent Displays Inc., Ito America, and L-3 Display Systems, will also be our supplier for the flexible display we have incorporated into our system. However, other groups researching this technology are Intel, 3M, Philips, and IBM.

MATERIALS

The materials to be used in Aeroflex are still being researched and pinpointed. However, we will need to find air tank suppliers who can meet our engineering specifications. This may be costly because it will most likely not be a standard size tank. Materials to be sourced will be carbon fiber, aluminum, and Kevlar. A listing of potential suppliers is included in Appendix A.

POWER SUPPLY

Power is in an ever increasing state of demand. Batteries have been at the top of many

INTERNAL ENVIRONMENT

research and development teams' task lists due to the overwhelming demand for longer-lasting, small, lightweight energy cells. At the moment we are looking toward the Lithium Ion battery to be used in our system. Some of the listed producers include, but are not limited to Nikon, Panasonic, Power-Stream, Toshiba, Sandia National Laboratories, Sony Global, Sanyo, Maxell, and General Electric. Not surprisingly, they are also many of the leading producers of the products that demand these types of power supplies. Wholesalers can be found around the world, but many are located within the United States. We will have to compare cost and quality when making our decision, as well as logistics and configuration.

FINANCIAL CONDITION

For the moment our research and development costs are covered through the Innovation Space program and its sponsors. Also, there seems to be quite a bit of excitement surrounding new technology within the fire-fighting market, which provides promise for successful solicitation of investors as well as sales. However, due to the technology and components involved, we may face rather high startup, variable, and fixed costs. It will be our challenge to control these costs

in order to make our product affordable and profitable.

MANAGEMENT/ORGANIZATION STRUCTURE

Aeroflex is so unique in its features and quality is a top priority, therefore, we will need to find suppliers who can meet individual component specifications, such as the size, capacity, and pressure of the tank, and the size, weight, and power of the battery, but aim to create our own assembling facilities. This will allow us to have high quality, specialized components, as well as a very controlled assembly environment. By conducting business as such, Glimpse will create a networking organizational structure, which will fully utilize each unit's expertise.

This site of the assembly facility must be considered when planning the logistics of the final product, as well as our suppliers. Glimpse plans to employ local manufacturers and suppliers (a preliminary list is available in Appendix A) in order to capitalize on just-in-time operations. Our facilities will be located in Phoenix, AZ. This is the same city as one of the largest and influential fire departments in the United States, the Phoenix Fire Department. Glimpse already has a working relationship with key individuals

within the department, which would prove beneficial to both parties in the future. and components involved, we may face rather high startup, variable, and fixed costs. It will be our challenge to control these costs in order to make our product affordable and profitable.

PERSONNEL

The two most important positions we must fill with the correct people are that of quality control and sales. We must be able to ensure our customers quality and reliability, which will lie in the hands of the quality control in place. Also, the sales personnel must not only know the product, but also the job. They must understand the product itself, but more so, they must understand the buyers and users of Aeroflex.

TECHNICAL

We will need technical expertise in terms of the flexible display specifications and development, software design and maintenance for the Aeroflex System, software for the sales and manufacturing teams, manufacturing facilities and machines, and logistics. Limitations usually seem to come in the form of funding, in addition we may be

limited by geography and personnel.

MARKETING & SALES

Because our product is associated with high-risk, dangerous situations, we must be able to market on the quality, safety, and reliability of Aeroflex. Providing this product will be a function of ascertaining the right people for the right jobs. We will also need to pay close attention to the demographics of our market. Due to the proportionately high price of the Aeroflex System, we will need to target large departments and/or well funded departments. In speaking with purchasers of these departments, they recommend direct sales paired with tradeshow and magazine advertisements.

MARKET OPPORTUNITY ANALYSIS

EXISTING MARKET

Within the existing market, Mine Safety Appliances (MSA) currently controls the market share. They have a wide range of technology and a large customer base, which has expanded into the international market. In fact, many of the organizations in this market seem to have expanded overseas as well. These companies are also in the military, scu

ba diving, and EMS markets. The firefighting industry is a niche market, but a niche with huge potential. This potential stems from the lack of technology applied to this field. We have the opportunity to introduce state of the art digital technology into a market that is still largely analog. The digital world has begun to arrive in this arena with thermal imaging and gas detection devices. These seem to have been accepted with open arms, and now these departments are looking for more. The focus is not so much on gaining more technology, but rather gaining a higher degree of safety. This is the goal of the United States Fire Administration (USFA), and is consistently on the minds of top department management.

POTENTIAL CUSTOMERS

Currently we are gearing the Aeroflex System toward the fire safety market. There are other markets that could be developed, such as the military and aquatics, but for now the focus is on firefighting. Within this market we must look at who is making the buying decision, who is the end user, and who is influencing the decision and use of Aeroflex. The names and titles behind these target audiences are who we want to talk to. Before we can speak

with these potential clients, we have to know their user needs. From the business perspective, our focus is the purchaser and their needs. The following are the user needs.

Increase Safety
Metric: Lives Saved
Value: 25% improvement

Affordability
Metric: \$\$\$
Value: 30% of equipment allowance

Ability to Obtain Federal Government Funding
Metric: \$\$\$
Value: 100% of expenditure

Ability to Test within the Department
Metric: Time
Value: One Month Test Period (before purchase) & One Month Trial Period (after purchase)

Ability to Maintain
Metric: Time & Ability (knowledge) To Repair Equipment
Value: Lifetime Limited Warranty & 15 day turnover

Cost of Maintenance
Metric: \$\$\$
Value: Free under warranty

OBJECTIVES & STRATEGIES

MISSION STATEMENT

To provide firefighters with the safest equipment by maintaining high quality and reliability.

Glimpse is in the business of safety. Safety for firefighters. Safety for emergency response teams. Safety for victims. Safety for the community; your community. Our mission is to protect the people who protect you.

Making safety the heart of our business has guided us in developing a well-engineered and innovative self-contained breathing system. This system increases the effectiveness and efficiency of firefighters by providing a more ergonomic air pack combined with an innovative situational monitoring system. This allows firefighters to concentrate on the task at hand without questioning their situational ability by considering any of one thousand other constraining factors such as temperature, air time, air pressure, and mobility. This package simplifies the user's interaction with their equipment, which allows more effective interaction with their environment. With safety as a user need, "lives saved" becomes our metric. We hope

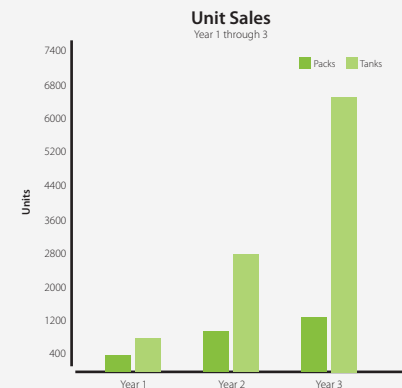
to help the fire safety industry lower its incident reports by five percent. In order to do this we will need to build and maintain an extremely high standard of quality within our engineering, design, and manufacturing functions, as well as throughout the rest of our operations.

FINANCIAL GOAL

To present affordable safety devices which will produce revenue for the following outcomes: breakeven within five years, compensate and reward its employees, invest in research & development, and contribute to the community. The financial goal of Glimpse not only sets the company up for success now, but also for success in the future. Making sure Aeroflex and any future products are affordable for fire departments across the country and worldwide will obviously be significant for sales and, in turn, revenue. Using this revenue wisely will keep Glimpse in operation for years to come.

The wise use of funds is quite a subjective topic, but one that Glimpse has come to agree on. Many experts, as well as our organization, deem research and design as an indispensable investment.

It is rare that one product will meet the needs of users until the end of time, and therefore we will strive to use the most innovative and applicable technology by investing in research and design. Another vital investment will be made in human resources. Without expertise and passion, the Aeroflex, or any other product will be no safer than any other equipment available. This safety focus is our core competency, and must to be preserved through just compensation and rewards for our employees. Also, with safety as our mission, we will offer aid in utilizing the government grant system and create a grant program of our own in order to assist fire departments in obtaining safer and current equipment. By offering not only our customers what they need, but also our employees, we will surely meet our financial goals.



Glimpse Financial Projections: Years 1- 3

Assumptions:

- more than 1,000,000 firefighters in the U.S.A.
- 19,000 fire departments in the U.S.A.
- expect to obtain 0.05% market share in year one (500 firefighters)

Highlights:

- By Month 4 we will produce a positive Gross Profit from Operations, and by the end of the third year we will have a Net Cash Flow from Operations of almost \$500,000 per month and growing
- Net Income from Operations will be almost \$400,000 at the end of the first year, and grow to over \$5,000,000 by the end of the third year
- Most expenses will be attributed to sales and research & development
- Sales will grow quickly and be at just over one million dollars per month by the end of the third year

Due to the obvious unpredictability of sales, Glimpse took a modest approach when

producing the sales forecast. However, even with the predicted sales, the organization will begin to see positive revenues as soon as we begin to make sales. This is expected to occur in the fourth or fifth month of operation due to the length of the purchasing process. Yet Glimpse will not have a positive ending balance until the second year of operations due to the startup costs incurred. Glimpse's full three year financial projections can be found in Appendix B.

MANAGEMENT & ORGANIZATION

Goal:

To bring together strategic, innovative, and knowledgeable professionals to create an effective and efficient team

Objectives:

- gain and utilize expertise in all aspects of our business and industry
- empower employees to communicate and make necessary decisions
- create legal entity to support and benefit the business structure

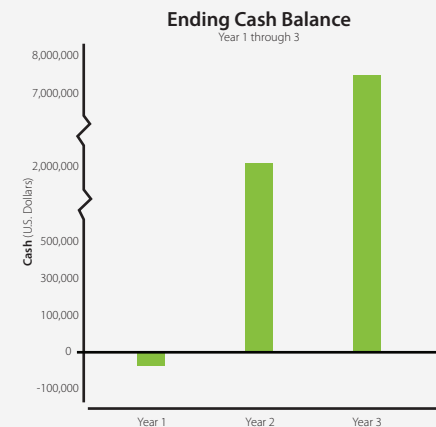
Strategies:

- create a network business structure
- form partnerships with necessary experts,

manufacturers, retailers and suppliers

- set guidelines that allow employees to be innovative and assertive

With a product as specialized as Aeroflex, Glimpse must be organizationally and legally configured in such a way that allows for the company to employ many experts from many different fields in a cost effective way. Forming a networking business structure is one way in which this is possible. This will require the formation of partnerships work with experts and suppliers such as the Flexible Display Center at Arizona State University, key city organizations and personnel, suppliers, and manufacturers.



OBJECTIVES & STRATEGIES

These partnerships will be made legally binding through licensing and contracts created between Glimpse and each organization. Also, to protect investors and stakeholders within our business, Glimpse will become a limited liability company. (LLC) This LLC will be responsible for the sales and assembly of Aeroflex, but will depend on outside vendors for manufacturing and processing within their given field of expertise.

Vendors will be chosen based on price and location. We would like to employ local vendors to assist in timely deliveries, direct communication and an excellent relationship, as well as minimal shipping costs. Our base will be in Phoenix, AZ, and vendors should be located within a one hundred mile radius. The location of the Glimpse headquarters is based upon the assumptions that the Phoenix fire department is one of the most influential and largest in the nation, and therefore will be our most significant client. Also, there is ample logistical transportation resources and market growth within the region.

Objectives:

- present affordable safety devices
- breakeven within five years
- compensate and reward employees
- invest in research and development
- contribute to the community through fire departments

Strategies:

- utilize grant system
- gain the support needed to gain a quick and trusted entry into the market
- salary base plus commission sales compensation
- compensation will include comprehensive benefit package
- allocating at least 10% of budget to research and design
- department scholarship/grant fund (for investment in safer equipment)

People

Goal: To immediately achieve and sustain true collaboration between all divisions within the company in order to best utilize all expertise.

Objectives:

- support open communication across all

- ensure mutual respect is a well-communicated and upheld standard
- gain and utilize expertise in all aspects of our business and industry
- empower employees to communicate and make necessary decisions

Strategies:

- create a network business structure
- form partnerships with necessary experts and suppliers
- set guidelines that allow employees to be innovative and assertive
- set up biweekly meetings at which leaders from each department meet to discuss progress and complications

As an organization forms it is important for it to define its standards and expectations. These play a significant role in the growth and success of the company because they outline the acceptable practices and overall atmosphere. Glimpse believes communication is and will continue to be an extremely important component of operations. With free-flowing communication and mutual respect, every person involved with the company will be able to express their ideas and concerns, which will prove to be extremely

departments within the company beneficial in all operations, especially those of design and collaboration. To support and encourage communication, Glimpse's business will have a networking structure, partnerships will be formed, employees will be empowered to make necessary decisions, and a regular meeting schedule will be arranged. The networking business structure allows every division within the company to maintain their field of expertise, as well as share their knowledge with the other divisions.

Marketing & Sales

Goal:

Obtain 30% market awareness within the first year of full operation (2007)

Objectives:

- Reach firefighters and purchasers of the major metropolitan fire departments
- Provide accurate and complete information to our target audiences
- Gain trust and rapport within the fire safety industry

Strategies:

- Promote website through media
- Gain well-known and respected endorser

- Direct sales, trade shows, and experiential advertising and trade publications

Glimpse has a very unique niche market, which may prove to have some significant barriers to entry. These barriers include a necessity for trust and rapport within the industry, funding for the purchase of new equipment, and large competing businesses. That said, Glimpse has a distinct competitive advantage, Aeroflex.

Aeroflex is the future of fire safety. Incorporating proven and effective hardware with innovative technology and design exponentially increases the safety of self-contained breathing systems. That said, our job is to prove that in order to gain the trust needed to market our product. This trust will take time to build, however, gaining the endorsement of a well-known and respected person within the fire safety industry will create a strong foundation to build upon. Prospects for this endorsement include Bob Kohn, media relations for the Phoenix fire department, R. David Paulison, U.S. Fire Administrator, Charlie Dickinson, Deputy U.S. Fire Administrator, and various city leaders. These endorsements will aid, not only in gaining trust,

but also publicity. In order to reach our goal of thirty percent market awareness by the end of our first full year in operation, we must also promote through trade shows, trade publications, direct sales, and experiential advertising.

Product

Glimpse sells safety. This safety comes in the form of equipment for emergency response teams, and more specifically it comes in the form of a product called Aeroflex. Aeroflex is a self-contained breathing systems designed to give fire fighters more mobility and better awareness of their surroundings while in the line of danger. It accomplishes this in quite a few ways. The first is the profile and fit of the pack itself. The main goal of the design is to create a more comfortable fit no matter what size the fire fighter may be. This was done by giving the pack a more ergonomic and sturdy frame, and making certain parts adjustable. Another feature is hard shield over the air tanks. This shield not only protects the tanks from wear, and threat of being punctured, but also prevents cords and wires from getting caught on the fire fighter. All of these features, as well as the smaller profile of the pack provide the

OBJECTIVES & STRATEGIES

firefighter with more mobility. The added situational awareness is achieved with a display that is located inside the mask. Flexible display technology allows the fire fighter to have constant readings of vital information such as the temperature, air pressure, time elapsed, time remaining, and global positioning. All of these features will prove to be beneficial to every fire fighter in the field on every call.

Promotion

The target market for Aeroflex is a fairly small niche with huge potential. There are more than one million fire fighters in the United States alone; all of them are heroes who keep their community safe. Keeping these heroes safe will certainly be a message not only the fire fighters themselves will want to hear, but also the people responsible for their well-being. City councils and purchasers will be the decision makers within our market, and therefore, will be the target of our promotions. However, the message needs to not only come from Glimpse, but even more so from the voices these key decision makers trust. For this reason we propose to let fire fighters test the Aeroflex during training and events created and sponsored by Glimpse.

This will develop a relationship with the users and obtain the attention of the decision makers. Along with the experiential marketing, we will also look to trade shows and trade publications for added publicity and advertising. However, the most important promotion and sales channel will be our direct sales team. They will not only have to know Aeroflex, but even more so, they will have to know the fire fighters' job. Once we have put all of these strategies into play, we will surely reach our goal of thirty percent market awareness by the end of our first full year of operation.

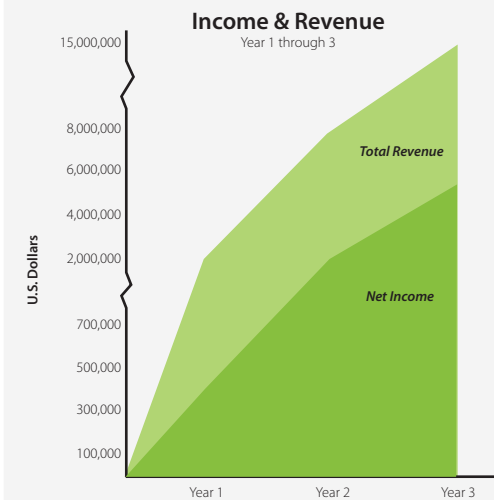
Place

Due to the structure of Glimpse, the physical hub will need to be in a location central to all of its distributors and clients. This site is yet to be determined, but the point of sale will not be at this site, but rather at the fire departments. In order to truly connect and gain the trust of the fire fighters and decision makers, our sales team must meet them face to face.

Price

Because Aeroflex is so advanced and has so many benefits, our product is a premium

product, and will be priced accordingly. That said, we must also ensure affordability. This will involve assisting fire departments in obtaining financial aid through grants and other fundraising. The price per unit will be just under \$5,000. This is a 300% markup over the cost to manufacture Aeroflex, which is \$1,662.44. The average price for similar products in the market is \$3,000 to \$4,500. By pricing Aeroflex slightly above the competition, we will position our product as the best in the market, while ensuring we cover our costs.



Fire Department Purchasing Process

- 1: Firefighters and purchasers learn about the product and its benefits
 - research performed to fully understand benefits and compare to those of the competitions' products
 - perceived value is determined
 - choice to pursue the purchase is made
- 2: Union considers safety and benefits of the product and grants or denies testing and purchase of the product
- 3: Purchaser obtains a product trial contract with the company, and product is tested in the field
 - varify benefits
 - determine quality & safety
 - test durability & advantages
- 4: Purchaser must obtain three (3) bids when purchasing products costing more than \$1,000
 - bids are compared based on price, benefits, and value



- 5: Department purchaser must present product information and bids to the City Council for funding approval
 - considers the overall benefit vs. cost
 - perceived value

Glimpse's Involvement in Purchasing Process

- 1: Advertisements introduce product obtain the attention of firefighters and purchasers
 - Marketing & sales team present and demonstrate benefits and value of the product
- 2: Marketing & sales team assists purchaser in providing all pertinent information to the Union
- 3: Glimpse provides a sufficient number of units for the department to test in the field
 - Glimpse will provide a product training' and assistance during and/or prior to the testing period
- 4: Glimpse provides all requested information and considers price points
- 5: Sales representative will work closely with the City Council to finalize the contract and cater to the department needs



Industrial Designer
spencer dodge
what is desirable?

Industrial Designer
spencer dodge
what is desirable?



Graphic Designer
amethyst saludo
what is good?

Graphic Designer
amethyst saludo
what is good?



Engineer
ben sitzia-verleure
what is possible?

Engineer
ben sitzia-verleure
what is possible?



Business
katie barette
what is valuable?

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