

Customer Need	Design Attributes	Metric	Units	Value
Provides air underwater	Provide user with two extra breaths to survive underwater	Volume	breaths = avg 1.6L	≥ 1
Regulator stays in place on arm	Fixed location on user's arm	Length Displacement	cm	≤ 2
Regulator stays in place on arm	Fixed direction on user's arm	Angle turned	Degrees	$\leq 10^\circ$
Not cumbersome on arm	Lightweight	weight	lbs	≤ 2
Not cumbersome on arm	Maximum distance protruding from arm	length	cm	≤ 4
Not cumbersome on arm	Inobtrusive hose diameter	length	cm	≤ 2
Device does not restrict motion	Have full range of motion with product on	Angle of movement lost	Degrees	$\leq 10^\circ$
Safe to use	Contains high pressure release	Has check/valve	yes/no	yes
Safe to use	Temperature is safe for lungs	temperature	C	≥ -15
Accessibility	Time to activate mouthpiece	time	seconds	≤ 5
Survives activity	Durable	lifespan	uses	≥ 100
Hands free operation	Breath Activated	Pressure Difference	psi	$\leq .5$
High quality of air	Air is SCUBA certified	Binary	yes/no	yes
Air stays in canister	Pressurized for at least 5 days	leak rate	L/s	$\leq 6E-6$
Easy to refill	Refillable by SCUBA	Binary	yes/no	yes
Affordability	Affordable	Selling price	Dollars	≤ 500