

TEAM #2. INSTANT AIR

Sponsor: Roy Baker

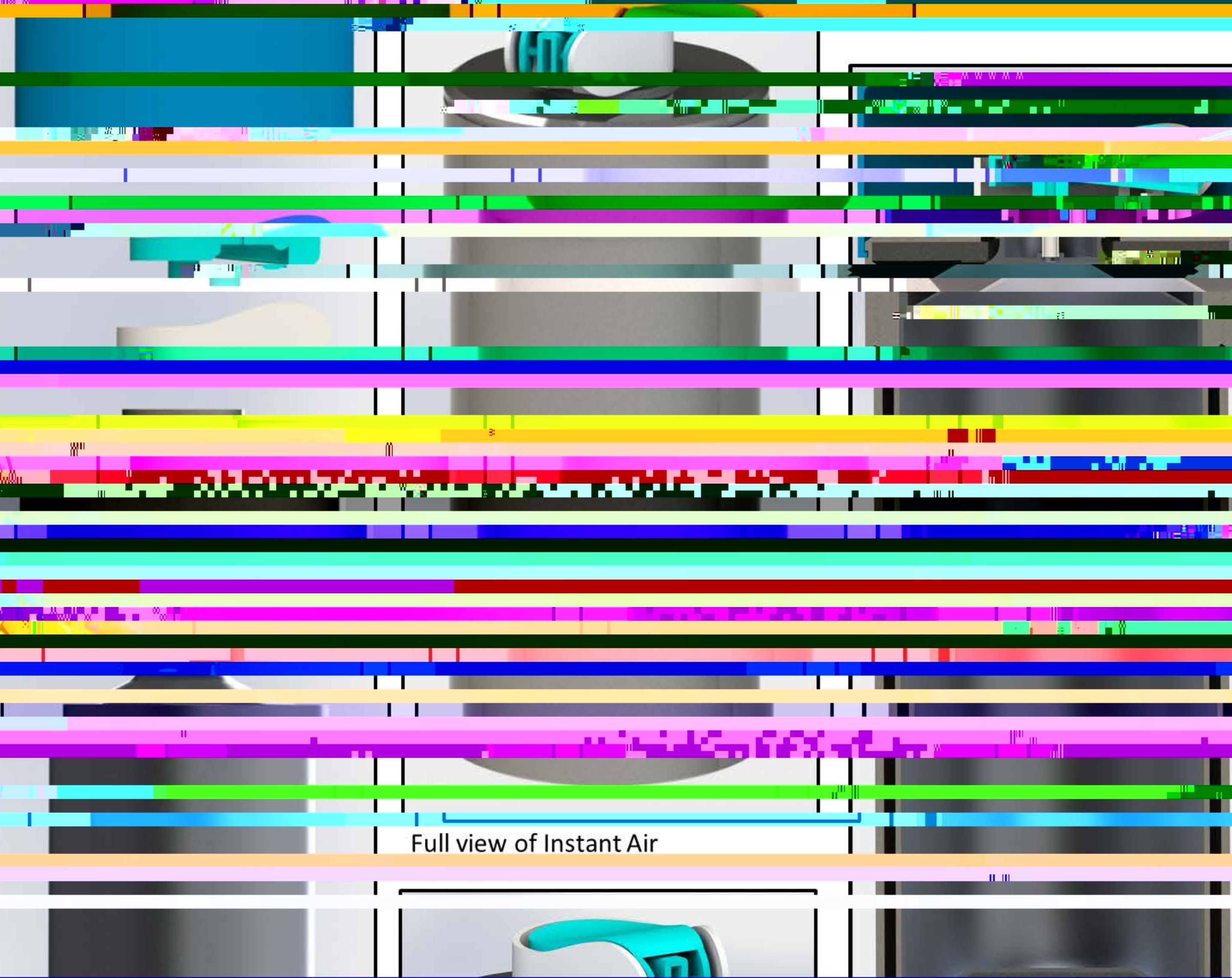
Dustin Lampier, James Vagstad

Background

Millions of people, including the elderly, and pets.

Objective: Design an easy to use handheld system that rapidly cools localized areas of a car interior upon entry.

SolidWorks Models

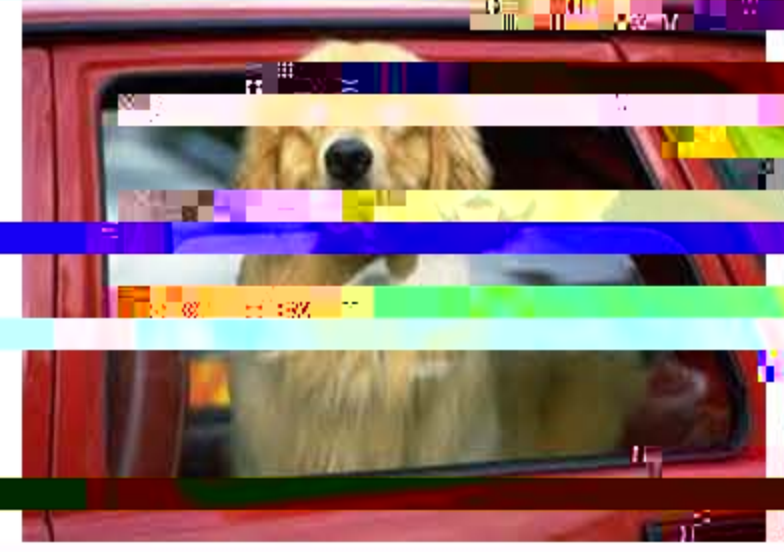


Functional Requirements

- Coolant (R134a tetrafluoroethane)
- Environmentally friendly
- Fast acting
- At least 600 CFM
- Safety
- Non-Toxic
- Safe for use in car (at least accidental usage)
- Ability to fill (compressibility of gas)

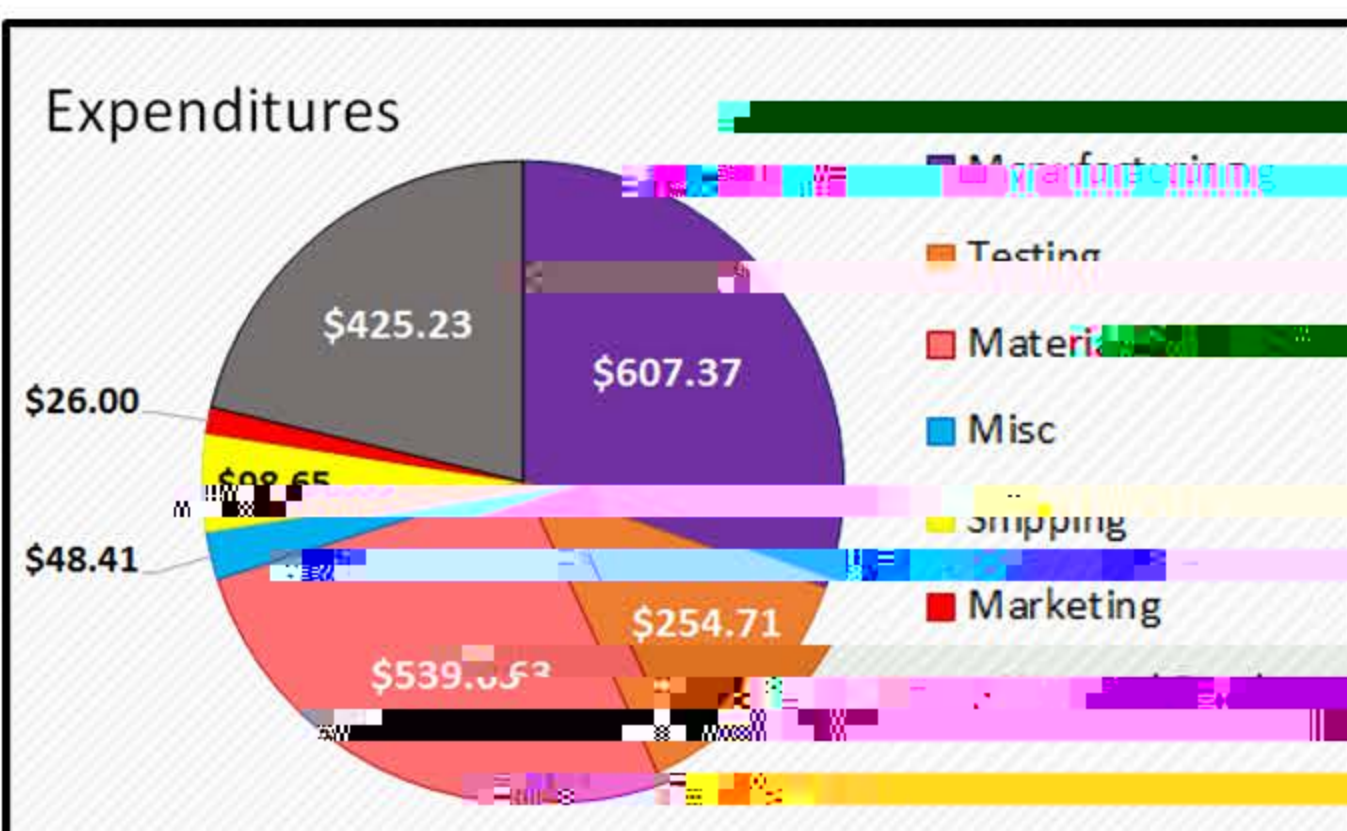
Potential Customers

- Elderly
- Parents
- Pet owners
- Construction workers

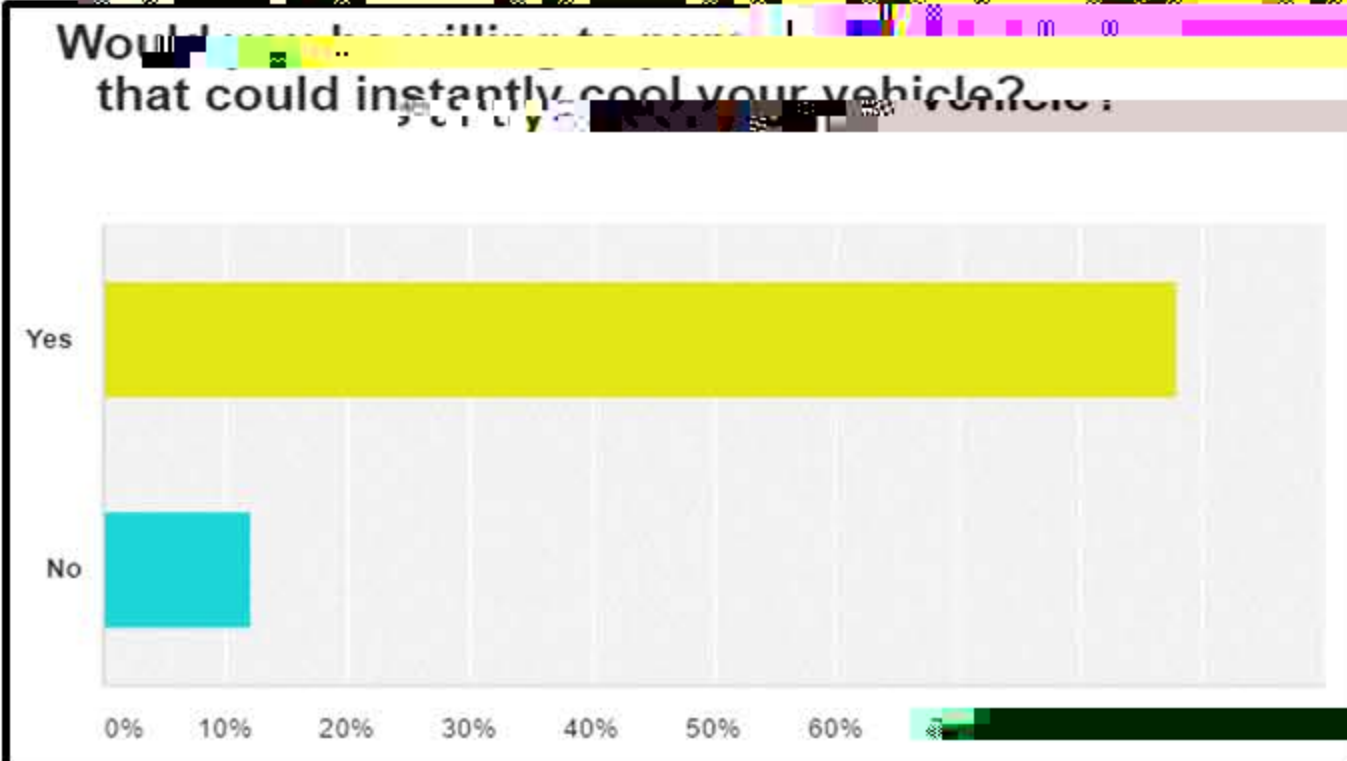


Budget and Market Research

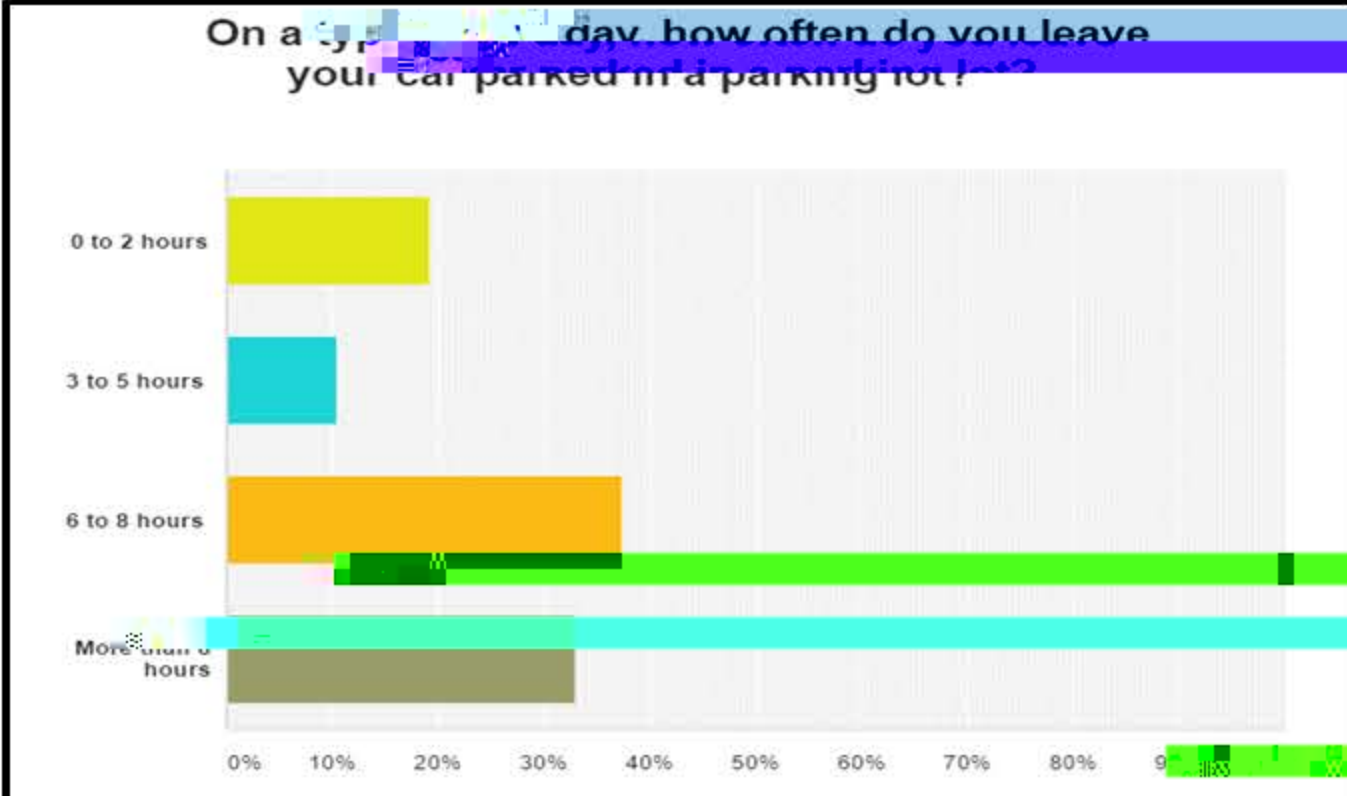
- Total Budget: \$50000.00
- Funds Allocated: \$29000.00
- Total Expenditures: \$1574.77



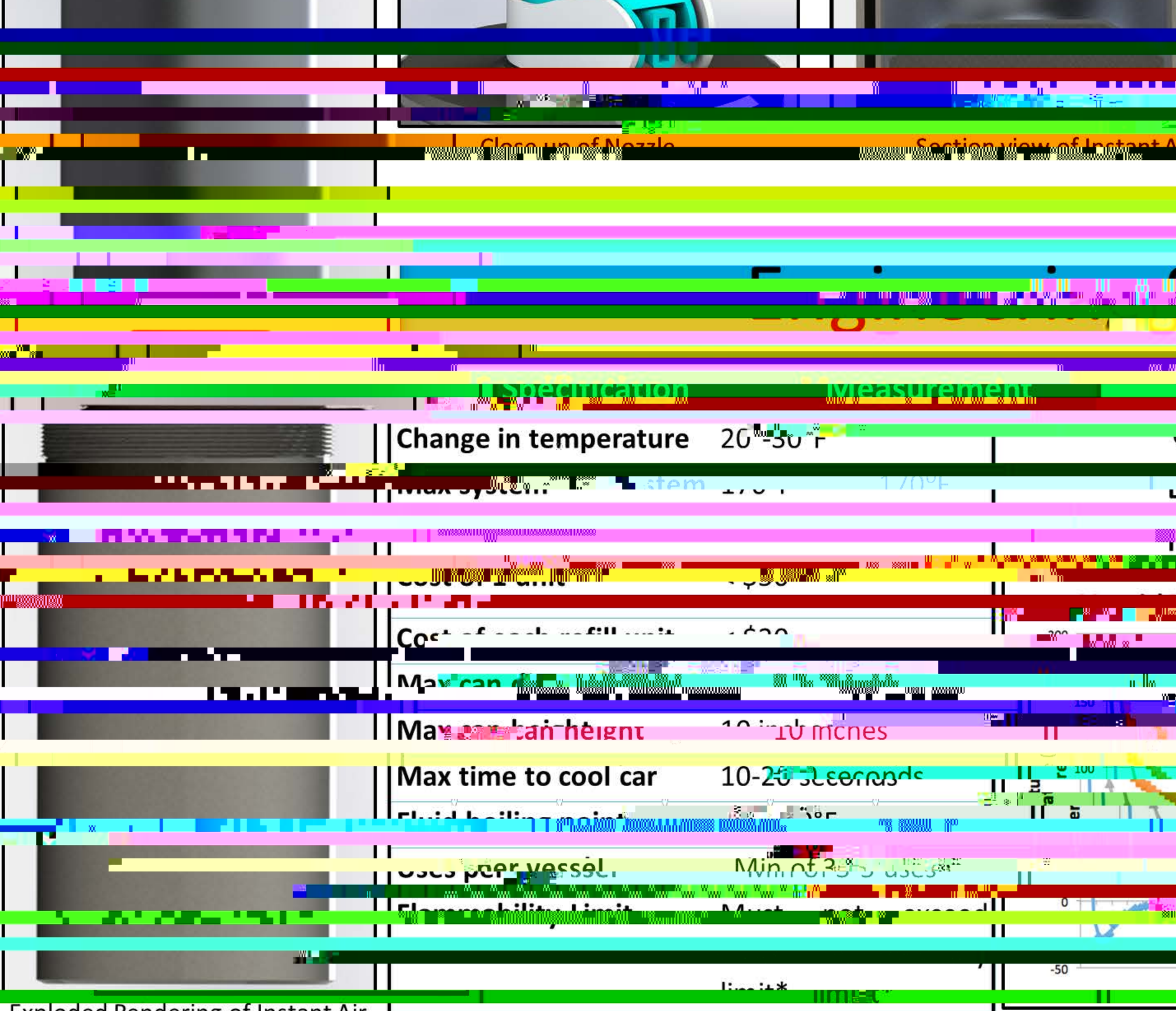
Market Research	Value
Participants living in SW states (Arkansas, Louisiana, Oklahoma, Texas)	100%
Car Owners	98.28%
Remote Start Car Owners	22.17%
Average time car in parking lot	0.67 hrs



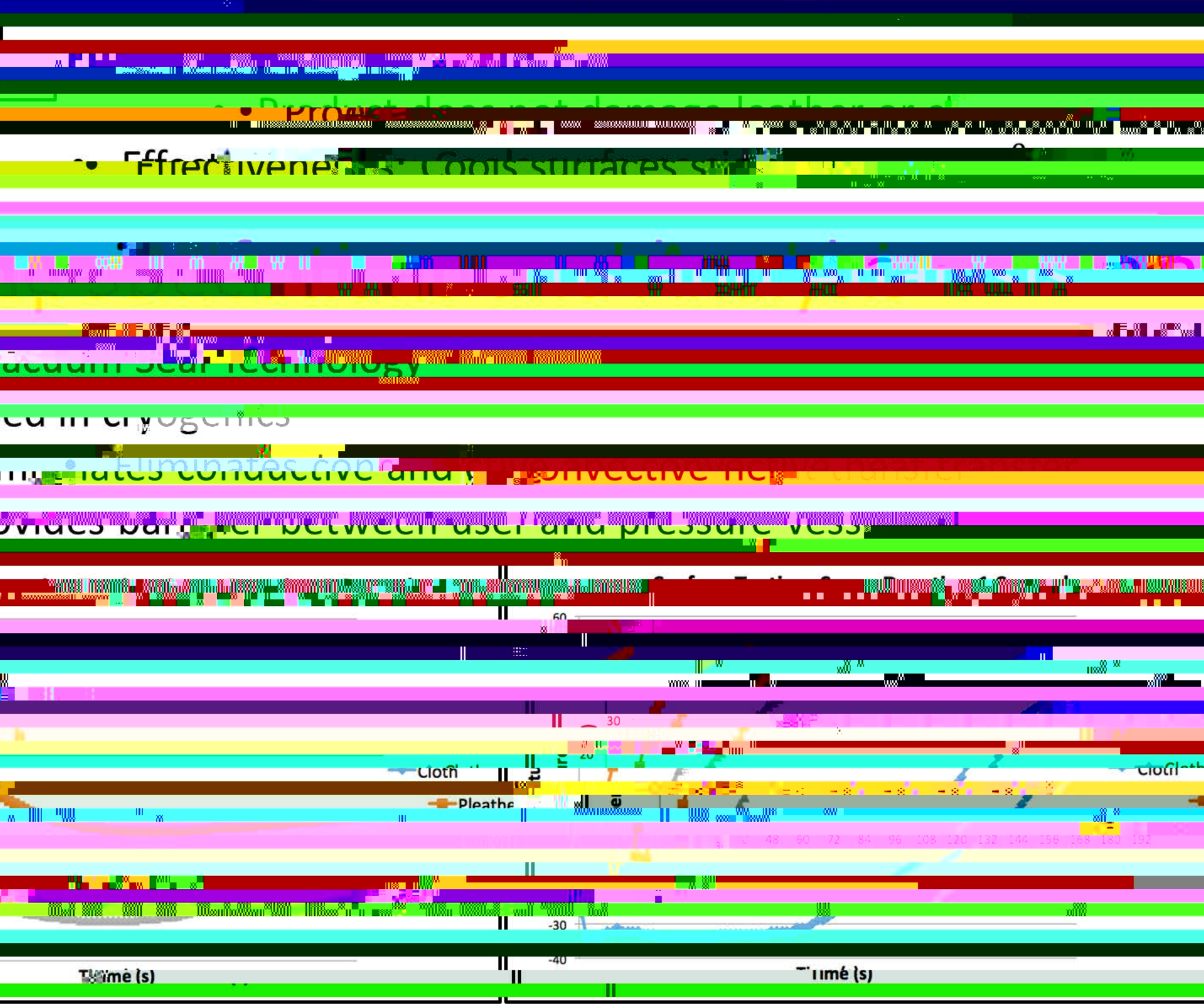
Participants Returning to Unbearably Hot Cars	95.65%
Participants interested in purchasing Instant Air	100%
Average Number of times per week car is parked in parking lot	6.00
Desired Cost Per Unit	\$40.47
Desired cost of retail	\$80.94
Participants currently employed	93.00%
Average Income	\$77,250
Average Age	37 years
Total Participants	120



Change in temperature	20°-50° F
Max system pressure	120 psi
Cost of fresh fill units	\$600
Max can height	10 inches
Max time to cool car	10-20 seconds
Child balling protection	None
Uses per vessel	Min 200 uses
Flareability limit	None



- Pressurized vessel
- Fluid Containment
- Push button
- Safety
- Effectiveness



Exploded Rendering of Instant Air