

# Gas Cluster Balloon

## 'Double Barrel' Design

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### Tier 5: Individual Release Tier

Balloons: 50-55  
 Strap: None-- individual 42-50 foot lines  
 Notes: Each individual balloon can be released from gondola.

### Tier 4: Standard / Core Tier

Balloons: 36-49  
 Straps: (2) 24 foot straps

### Tier 3: Standard/Core Tier

Balloons: 22-35  
 Strap: (2) 16-foot straps

### Tier 2: Standard/Core Tier

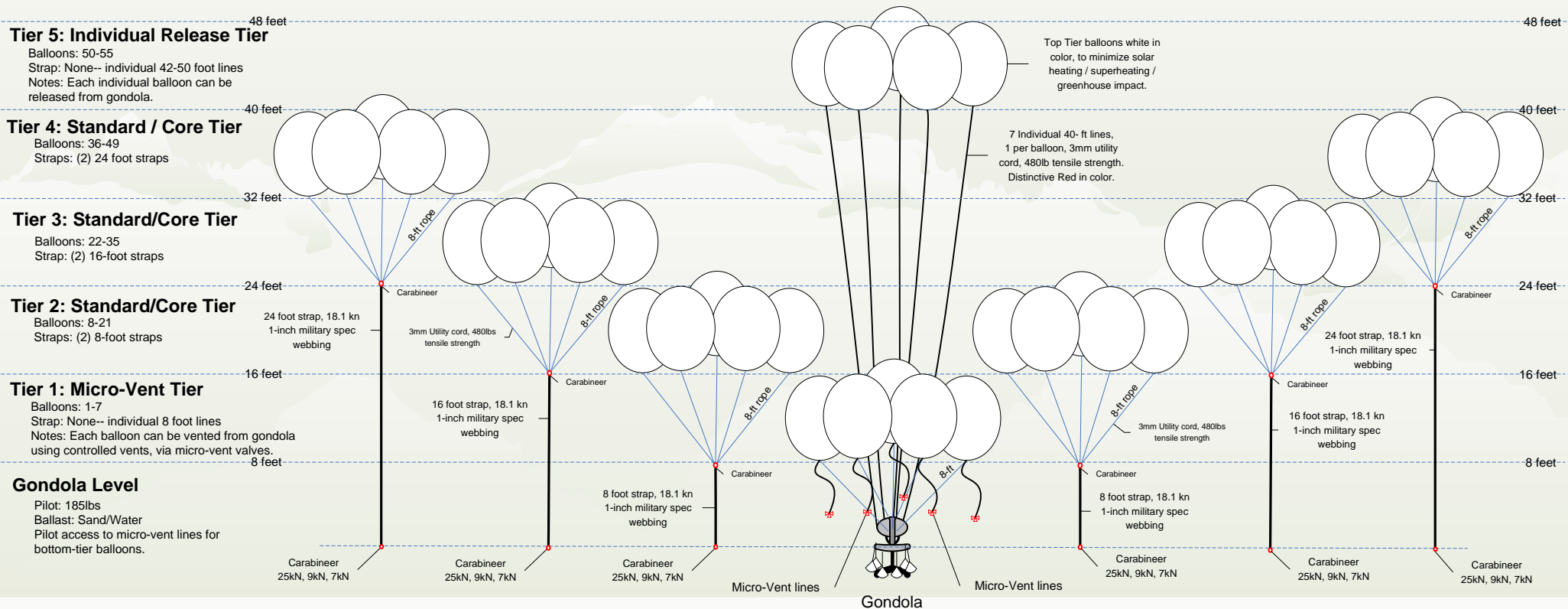
Balloons: 8-21  
 Straps: (2) 8-foot straps

### Tier 1: Micro-Vent Tier

Balloons: 1-7  
 Strap: None-- individual 8 foot lines  
 Notes: Each balloon can be vented from gondola using controlled vents, via micro-vent valves.

### Gondola Level

Pilot: 185lbs  
 Ballast: Sand/Water  
 Pilot access to micro-vent lines for bottom-tier balloons.



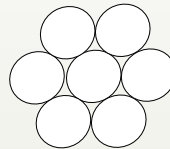
### Specs:

- Balloons:** 8-foot chloroprene cloudbusters, 268 cu/ft
- Balloon count:** 55
- Total envelope size:** 12,045 cubic feet (filled to 219 cu/ft per envelope)
- Lifting gas:** Helium (He)
- Straps:** (6) 1-inch 18kN rated tubular webbing
- Carabiners:** (12) Black Diamond Quicksilver Screwgate; Rated 25kN (vertical, closed), 9kN (gate open), 7kN (horizontal); 2 carabiners per strap: base and bud.
- Individual Ropes:** (55) 3mm 480lb tensile strength utility line (50 8-foot lines, 5 40-foot lines)
- Net Lift per balloon:** 9lbs (observed), 15 lbs (theoretical)
- Gross Lift:** 495lbs (at 9lbs/balloon)

### DANGER!

Cluster ballooning is potentially extremely dangerous and could result in serious injury or death. This document is theoretical, and should not be implemented or tested. Do not undertake any ballooning activity without training from an FAA qualified instructor.

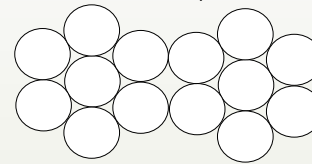
Individual 7-Cluster:  
Top View



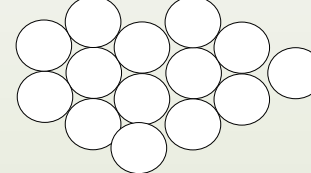
Individual 7-Cluster:  
Side View



Double Barrel:  
Idealized Top View



Double Barrel:  
Probable Top View:



Assembled View:

