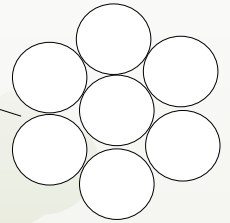
Gas Cluster Balloon

‘Stack of Donuts’ Design

Jonathan R. Trappe
jtrappe@yahoo.com

Top view:



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
- **Individual Ropes:** (55) 3mm 480lb tensile strength utility line
- **Net Lift per balloon:** 9lbs (observed) 15 lbs (theoretical)
- **Gross Lift:** 495lbs (at 9lbs/balloon)

Tier 8: Individual Release Tier

Balloons: 50-55
Strap: None-- individual 64 foot lines
Notes: Each individual balloon can be released from gondola by cutting line.

Tier 7: Quick Release Tier

Balloons: 43-49
Strap: 48 foot
Notes: Entire tier can be released using quick-release on gondola (e.g. for powerline landing.)

Tiers 2-6: Standard/Core Tiers Non-Release Tiers

Balloons 8-42
Not designed for release in flight

Tier 1: Micro-Vent Tier

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

Gondola Level

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

