**Solstice® N40 (R-448A)**

**Performance Comparison with R-404A Alternatives**

**Capacity / Energy Efficiency and Glide**

This new Honeywell HFO blend, Solstice N40 (R-448A), has claimed the title of the **lowest GWP** (1386 as per IPCC4), **A1** (non-flammable) replacement for R-404A/R-507 which provides the best overall performance for operating at both medium and low temperature in applications such as commercial and industrial refrigeration or food service.

**In summary:**

- Solstice N40 (R-448A) **gives the best combined energy efficiency** as MT and LT replacement to R-404A/R-507 (better than R-449A and R-407F)
- Solstice N40 (R-448A) **has the same temperature glide** as R-449A
- Solstice N40 (R-448A) **provides better capacity** than R-449A
- Due to lower Tds at the conditions shown, Solstice N40 (R-448A) **does not require liquid injection** in low temperature applications – unlike R-407F and R-407A

Results from Bitzer calculation software, version 6.4.3. (February, 2015), comparing Solstice N40 (R-448A) with R-449A as well as other R-404A replacements, are shown below:

**Superior Efficiency**

Results from Bitzer Software v6.4

![Combined MT & LT Energy Efficiency](image)

**Better Capacity**

Results from Bitzer Software v6.4

![System Capacity](image)

**Same Temperature Glide**

Results from Bitzer Software v6.4

![Temperature Glide](image)

**Same Temperature Discharge**

Results from Bitzer Software v6.4

![Discharge Temperature](image)

Comparison and results for efficiency, capacity and discharge temperature in the charts above have been generated using Bitzer v6.4.3 software (available on-line), whilst the glide comparison has been extracted from Refprop approved files.

*Note: calculations are made at midpoint in the Bitzer software. Dew point is not characteristic of system performance, due to glide, and may lead to different, not representative results.*
Simulation software
For further calculations of properties and cycles simulation please download for free the Honeywell Genetron Properties Suite software at

http://www.honeywell-refrigerants.com/europe/genetron-properties-suite/

Smart phones apps
You can also use the free app “Refrigerants PT chart EU” available for iOS and Android

Information and contact
Should you have any questions on any of the information above or just need help in understanding or deciding on which is the best solution for your business / application, please contact your local Approved Honeywell Refrigerant Distributor.

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