Compliance sheet — star-quantile

Everything a supplier qualification, a legal review or an export check usually asks about star-quantile 0.1.0, in one document.

1. Identity

Document	STAR-PKG-STAR-QUANTILE-EN · v2.3 · 2026-11-14
Package	star-quantile
Version	0.1.0
Capability	star.statistics.quantiles
Maturity	Released & Verified (RELEASED)
Python	>=3.9
Source commit	dc09f61d
Source	https://github.com/Andrea07072000/S.T.A.R.-/tree/main/packages/star_quantile

2. Licence and obligations

Apache License 2.0. You may use, copy, modify and distribute it, also commercially, and you receive a patent licence from the contributors. When you redistribute it: keep the LICENSE file and the copyright notices (and a NOTICE file, if a future version adds one), and state in modified files that you changed them. You may not use the S.T.A.R. name to endorse your product.

3. What it needs at run time

Nothing beyond the Python standard library: it works offline.

4. Integrity

SHA-256 fingerprints of the files published on this website. Check a downloaded file with:

```
python -c "import
hashlib,sys;print(hashlib.sha256(open(sys.argv[1],'rb').read()).hexdigest())" star_quantile-
0.1.0-py3-none-any.whl
```

FILE	SHA-256
star_quantile-0.1.0-py3-none-any.whl	bc33d37868f778300a601ede31e847e09d75096e2c7a5e566efbeafe48da7375
star_quantile.py	641b34712e9e935080c7bfa12e6618dacd740a18ad2bad9c080b830da6c0ea13
star_quantile-0.1.0-source.zip	a68cef4a17cd4b1ed8a52283e90e88bebc1caa3f520a61c3374c0c22f683db30

5. What it does, and its limits

Median, Hyndman-Fan type 7 quantile, interquartile range and median absolute deviation computed exactly in rational arithmetic and rounded once; on 500 datasets (2000 values) every value is identical to the exact rational value from SymPy, and NumPy, SciPy and CPython statistics agree within 7e-16 of the largest value.

One quantile definition out of the nine in use: results differ from packages that default to another one, and the module does not offer the others. The MAD is returned unscaled (multiply by 1.4826 to estimate a Gaussian standard deviation: that factor is an assumption about the data, not applied here). No weighted quantiles, no confidence intervals, no streaming estimate. "Exact" refers to the floats supplied.

- `quantile(values, q)` is definition 7 of Hyndman and Fan (linear interpolation between order statistics at position (n - 1) q), the default of R and NumPy; `median` is the 0.5 quantile; `iqr` is the 0.75 quantile minus the 0.25 quantile; `mad` is the median of the absolute deviations from the median, not scaled.
- Each result is the float nearest to the exact value of its definition on the numbers given (q included, as the exact value of its float); the order of the values does not matter.
- Measured on 500 datasets of 1 to 60 values (2000 values): every value identical to the exact rational value (SymPy) rounded once; NumPy, SciPy and CPython's `statistics` within 7e-16 of the largest |value|.
- Every function returns a float or raises `ValueError`: data that are not a list or tuple of 1 to 100000 finite numbers within 1e150 (booleans refused), q outside [0, 1] or not a finite number.

6. Export, use and certification

The package is published and freely available. That usually takes software out of export-control lists, but not every use of it: read the page on space activities and export control before using it in a controlled programme. It is not certified or qualified for flight; the evidence describes what was tested and how.

7. Citation and bill of materials

```
@software{cavazzini_star_quantile_0_1_0,
  author  = {Cavazzini, Andrea},
  title   = {{star-quantile}: Median, quantiles, IQR and MAD, correctly rounded},
  version = {0.1.0},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_quantile/},
  note    = {Apache-2.0. Source: https://github.com/Andrea07072000/S.T.A.R.-, commit dc09f61d}
}
```

CITATION.cff · BibTeX · SBOM CycloneDX 1.5 · SBOM SPDX 2.3

8. Warranty and liability

Provided "as is", without warranties or conditions of any kind (Apache License 2.0, sections 7 and 8), to the extent the law allows. This never excludes liability that the law does not allow to exclude.

Related: space activities and export control · acceptable use · evidence and limits · licence texts