Compliance sheet — star-ellipsoid

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

1. Identity

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

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_ellipsoid-
0.1.0-py3-none-any.whl
```

FILE	SHA-256
star_ellipsoid-0.1.0-py3-none-any.whl	2be5697ee4f378dde947eed9545899a9f1d1b8d597b191ea36f2e3df87e57d1f
star_ellipsoid.py	83607f7ebe9c08fb230906abcd647228f41034490cd9bb0789bb60120c637ba5
star_ellipsoid-0.1.0-source.zip	b45b3ff88512511a5e7d7e720e6912467155155b0f75bb94b7a0bfad877039a5

5. What it does, and its limits

Radii of curvature, geocentric radius, geocentric / parametric / rectifying latitude and meridian arc on WGS-84 at a geodetic latitude; agrees with pymap3d and PyGeodesy to rounding (arc within 4e-9 m) and refuses latitudes outside [-90, 90].

The ellipsoid, not the Earth: no geoid, no terrain height. WGS-84 only (GRS80 differs in the tenth digit of f).

- `meridian_radius`, `prime_vertical_radius`, `gaussian_radius`, `geocentric_radius` (metres) at a geodetic latitude in degrees; WGS-84 constants as published.
- `geocentric_latitude`, `parametric_latitude`, `rectifying_latitude` (degrees); `meridian_arc` (metres from the equator, negative in the south; Helmert's series to n^5) and `MERIDIAN_QUADRANT` = 10 001 965.729 m.
- Measured on 505 latitudes against pymap3d and PyGeodesy: radii within 5e-16 relative, auxiliary latitudes within 5e-14 deg, meridian arc within 4e-9 m.
- Every function returns a finite float or raises `ValueError`: non-numeric, boolean, NaN or infinite input, and any latitude outside [-90, 90] (not wrapped).

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_ellipsoid_0_1_0,
  author  = {Cavazzini, Andrea},
  title   = {{star-ellipsoid}: The WGS-84 ellipsoid as a surface},
  version = {0.1.0},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_ellipsoid/},
  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