

# NEVADA<sup>TM</sup>

NET ENERGY VERIFICATION AND DETERMINATION ANALYZER

**FAST. POWERFUL. PROVEN.**

## *Product Line*

### **NEVADA REF** (RADIATION EXCHANGE FACTOR)

NEVADA REF is a full featured radiation analysis tool. NEVADA REF calculates both view and interchange factors for a variety of radiation problems. Your radiation model can be built from a few basic surface types that include quads, triangles, disks, and polygons. These exchange factors can then be used as input for common thermal analyzers such as SINDA.

Surface properties include absorptance, emittance, transmittance with refraction or translucency, percent specularity, and can be angular dependent. NEVADA REF also accounts for phenomena such as critical angle reflections and absorbing or participating media.

Nodes can be grouped for form nodal sets and can be masked to create "holes" in radiation nodes.

All though NEVADA has its roots in the aerospace industry, NEVADA REF has many uses in other fields such as high vacuum contamination analysis, optics, and disciplines dealing with high temperature environments.

The package comes with a model builder/viewer, solver, and postprocessor for creating SINDA input files.

### **NEVADA EHL** (ENVIRONMENTAL HEAT LOADS)

All of the features of NEVADA REF including the Environmental Heat Load module for orbital heating analysis. Heat load sources can be solar, Earthshine, or albedo or any combination thereof. Heat loads can be calculated for a user defined orbit or from a list of defined solar vectors. The solar source can be collimated (point at infinity) or divergent (actual size and distance). Your radiation model can have articulating surfaces and can have one of four different orbit orientations. Models may be stationary, spinning about an axis or "piloted" to perform a set of user defined maneuvers.

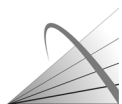
Albedo and Earthshine can be a function of longitude and latitude; an important feature for Low Earth Orbits.

### **NEVADA Pro**

All of the features of NEVADA EHL with true curved surface types. While the other editions of NEVADA are limited to the basic flat surfaces types, NEVADA Pro comes with 22 true surfaces shapes. These additional surface types include advanced shapes such as scarfed cones and cylinders, lines of extrusion and revolution, and off-set paraboloids. These true curved surfaces allow for incredibly accurate specular analysis and solutions.

The Professional Edition also allows for separate surface properties on each side of a radiation node. NEVADA Pro is the most complete radiation analysis tool available.

Continued...



**TAC TECHNOLOGIES**

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## *Features at a glance*

| Feature                                | NEVADA Edition |     |     |
|--|----------------|-----|-----|
|  | REF            | EHL | Pro |
| Geometric view factors                 | ✓              | ✓   | ✓   |
| Interchange factors                    | ✓              | ✓   | ✓   |
| Nodal sets                             | ✓              | ✓   | ✓   |
| Spinning nodes                         | ✓              | ✓   | ✓   |
| Absorbing/Participating media          | ✓              | ✓   | ✓   |
| Angular dependent surface properties   | ✓              | ✓   | ✓   |
| Integrates with SINDA/ATM              | ✓              | ✓   | ✓   |
| Solar, Earthshine, & Albedo heat loads |                | ✓   | ✓   |
| Variable planetary properties          |                | ✓   | ✓   |
| Orbital maneuvering                    |                | ✓   | ✓   |
| Orbit plotting and visualization       |                | ✓   | ✓   |
| Sun-locked surfaces                    |                | ✓   | ✓   |
| Determination of eclipse points        |                | ✓   | ✓   |
| 4 surface types                        | ✓              | ✓   |     |
| 22 surface types                       |                |     | ✓   |
| Line of extrusion/revolution           |                |     | ✓   |
| Scarfed cones/cylinders                |                |     | ✓   |
| True curved surfaces                   |                |     | ✓   |
| Dual surface properties                |                |     | ✓   |
| Available for MS Windows               | ✓              | ✓   | ✓   |
| Available for UNIX                     |                |     | ✓   |

Contact TAC Technologies today to order your copy of NEVADA.

Trusted since 1974.

**TAC TECHNOLOGIES**  
PO Box 6949  
Incline Village, NV 89450

775-833-1111 : Phone  
775-831-7400 : Fax

**www.tac1.com**  
info@tac1.com