

NAME

findglare - locate glare sources in a RADIANCE scene

SYNOPSIS

```
findglare [ -v ] [ -ga angles ] [ -t threshold ] [ -r resolution ] [ -c ] [ -p picture ] [ view options ] [ rtrace options ] [ octree ]
```

DESCRIPTION

Findglare locates sources of glare in a specific set of horizontal directions by computing luminance samples from a RADIANCE picture and/or octree. *Findglare* is intended primarily as a preprocessor for glare calculation programs such as *glarendx(1)*, and is usually accessed through the executive script *glare(1)*.

If only an octree is given, *findglare* calls *rtrace* to compute the samples it needs. If both an octree and a picture are specified, *findglare* calls *rtrace* only for samples that are outside the frame of the picture. If *findglare* does not have an octree and the picture does not completely cover the area of interest, a warning will be issued and everything outside the picture will be treated as if it were black. It is preferable to use a picture with a fisheye view and a horizontal and vertical size of at least 180 degrees (more horizontally if the *-ga* option is used -- see below). Note that the picture file must contain correct view specifications, as maintained by *rpict(1)*, *rvu(1)*, *pfilt(1)* and *pinterp(1)*. Specifically, *findglare* will not work on pictures processed by *pcompos(1)* or *pcomb(1)*. It is also essential to give the proper *rtrace* options when an octree is used so that the calculated luminance values are correct.

The output of *findglare* is a list of glare source directions, solid angles and average luminances, plus a list of indirect vertical illuminance values as a function of angle. Angles are measured in degrees from the view center, with positive angles to the left and negative angles to the right.

By default, *findglare* only computes glare sources and indirect vertical illuminance for the given view (taken from the picture if none is specified). If the view direction is not horizontal to begin with (ie. perpendicular to the view up vector), *findglare* will substitute the closest horizontal direction as its view center. The *-ga* option can be used to specify a set of directions to consider about the center of view. This specification is given by a starting angle, ending angle, and step angle like so:

```
start-end:step
```

All angles must be whole degrees within the range 1 to 180. Multiple angle ranges may be separated by commas, and individual angles may be given without the ending and step angles. Note that *findglare* will complain if the same angle is given twice either explicitly or implicitly by two ranges.

Findglare normally identifies glare sources as directions that are brighter than 7 times the average luminance level. It is possible to override this determination by giving an explicit luminance threshold with the *-t* option. It usually works best to use the 'l' command within *ximage(1)* to decide what this value should be. Alternatively, one can use the 't' command within *rvu(1)*. The idea is to pick a threshold that is well above the average level but smaller than the source areas.

If the sources in the scene are small, it may be necessary to increase the default sample resolution of *findglare(1)* using the *-r* option. The default resolution is 150 vertical samples and a proportional number of horizontal samples. If besides being small, the sources are not much brighter than the threshold, the *-c* flag should be used to override *findglare's* default action of absorbing small sources it deems to be insignificant.

The *-v* flag switches on verbose mode, where *findglare* reports its progress during the calculation.

EXAMPLE

To calculate the glare sources in the image "scene.hdr":

```
findglare -p scene.hdr > scene.glr
```

To compute the Guth visual comfort probability from this result:

```
glarendx -t guth_vcp scene.glr
```

To compute the glare for a set of angles around the view "good.vp" from the octree "scene.oct" using an ambient level of .1:

```
findglare -vf good.vp -ga 10-60:10 -av .1 .1 .1 scene.oct > scene.glr
```

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SEE ALSO

getinfo(1), glare(1), glarendx(1), pfilt(1), rpict(1), rtrace(1), rvu(1), xglaresrc(1), ximage(1)