

NAME

pvalue - convert RADIANCE picture to/from alternate formats

SYNOPSIS

```
pvalue [ options ] [ file ]
pvalue -r [ options ] [ file1 [ file2 file3 ] ]
```

DESCRIPTION

Pvalue converts the pixels of a RADIANCE picture to or from another format. In the default mode, pixels are sent to the standard output, one per line, in the following ascii format:

```
      xpos   ypos   red   green   blue
```

If no *file* is given, the standard input is read.

The reverse conversion option (*-r*) may be used with a single input file or when reading from the standard input, but if the second form is used with three separate input files, the three primaries are presumed to be separated in these files.

- u** Print only unique values in the output, skipping runs of equal pixels. For reverse conversions, the *-u* option writes uncompressed output rather than the standard run-length RGBE encoding. Specifying *+u* turns this option off, which is the default.
- o** Print original values, before exposure compensation. If the input file is in XYZ format, the Y (green) channel will correspond to units of candelas/meter². Otherwise, the RGB values should be in spectral watts/steradian/meter². Specifying *+o* uses final exposed values, which is the default.
- h** Do not print header. Specifying *+h* causes the header to be printed, which is the default.
- H** Do not print the resolution string. (See also the *-r* option below.) Specifying an input resolution for reverse conversion also turns this option off. Specifying *+H* causes the resolution string to be printed, which is the default.
- s *nbytes*** Skip the specified number of bytes on the input header. This option is useful for skipping unintelligible headers in foreign file formats.
- e *exposure*** Adjust the exposure by the amount specified. If the exposure is being given as a conversion factor, use *+e* instead, so an EXPOSURE line will not be recorded in the header (if any).
- g *gamma*** Set gamma correction for conversion. When converting from a RADIANCE picture to another format, the inverse gamma is applied to correct for monitor response. When converting to a RADIANCE picture (*-r* option), the gamma is applied directly to recover the linear values. By default, *gamma* is set to 1.0, meaning no gamma correction is performed.
- d** Data only, do not print x and y pixel position.
- da** Same as *-d*.
- di** Print ascii integer values from 0 to 255+. If *+di* is given, the integer values will be preceded by the x and y pixel locations.
- db** Output binary byte values from 0 to 255.
- dw** Output binary 16-bit words from 0 to 65535.
- dW** Output binary 16-bit words from 0 to 65535, byte-swapped.
- df** Output binary float values.
- dF** Output byte-swapped binary float values.
- dd** Output binary double values.

- dD** Output byte-swapped binary double values.
- R** Reverse ordering of colors so that the output is blue then green then red. The default ordering (specified with *+R*) is red then green then blue.
- n** The RGB values are non-interleaved, meaning that all the red, green and blue data are stored together in separate chunks. Interleaving may be turned on with the *+n* option, which is the default.
- b** Print brightness values rather than RGB. Specifying *+b* turns this option off, which is the default.
- pP** Put out only the primary *P*, where *P* is one of upper or lower case 'R', 'G' or 'B' for red, green or blue, respectively. This option may be used to separate the Radiance primaries into three files with three separate runs of *pvalue*, or only one file when only one primary is needed. Note that there is no space between this option and its argument.
- r** Perform reverse conversion. Input is in the format given by the other options. The x and y resolution must be specified on the command line, unless the image file contains a Radiance resolution string at the beginning (see *-H* option above and *-y* option below). Specifying *+r* converts from a Radiance picture to other values, which is the default.
- p *xr yr xg yg xb yb xw yw***
On reverse conversion, RGB input uses the given set of color primaries. These are written into the output header with the PRIMARIES variable.
- pXYZ** On reverse conversion, input is in CIE XYZ coordinates, rather than RGB. The Y channel is assumed to be in candelas/meter².
- y *res*** Set the output y resolution to *res*. If *+y* is specified, then the scanlines are assumed to be in increasing order (ie. bottom to top). The default value for this option is 0, which means that the picture size and scanline order must appear as the first line after the header (if any) in the input file. Either an upper or lower case 'Y' may be used for this option. Since Radiance files always contain such a line, this option has no effect for forward conversions.
- +x *res*** Set the output x resolution to *res*. If *-x* is specified, then the scanlines are assumed to be in decreasing order (ie. right to left). The ordering of the *-y* and *+x* options determines whether the scanlines are sorted along x or along y. Most Radiance pictures are sorted top to bottom, then left to right. This corresponds to a specification of the form "*-y yres +x xres*". Either an upper or lower case 'X' may be used for this option. Like the *-y* option, *-x* options have no effect for forward conversions.

EXAMPLE

To look at the original, unique pixels in picture:

```
pvalue -o -u picture | more
```

To convert from a 512x400 8-bit greyscale image in bottom to top, left to right scanline ordering:

```
pvalue -r -db -b -h +y 400 +x 512 input.im > flipped.hdr
pflip -v flipped.hdr > final.hdr
```

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BUGS

Input pixel locations are ignored during a reverse conversion, so this information is not used in determining the scanline ordering or picture size.

SEE ALSO

getinfo(1), pcompos(1), pfilt(1), pflip(1), protate(1), ra_xyze(1), rpict(1), rtrace(1), rvu(1)