NAME
pdfblur - generate views for depth-of-field blurring

SYNOPSIS
pdfblur aperture distance nsamp viewfile

DESCRIPTION
Pdfblur takes the given *viewfile* and computes *nsamp* views based on a focus distance of *distance* and an aperture diameter of *aperture* (both in world coordinate units). When rendered and averaged together, these views will result in a picture with the specified depth of field. Either *pinterp(1)* or *rpict(1)* may be called to do the actual work. (The given *viewfile* must also be passed on the command line to the chosen renderer, since *pdfblur* provides supplemental view specifications only.)

For *pinterp,* feed the output of *pdfblur* to the standard input of *pinterp* and apply the −*B* option to blur views together. In most cases, a single picture with z-buffer is all that is required to get a satisfactory result, though the perfectionist may wish to apply three pictures arranged in a triangle about the aperture, or alternatively apply the −*ff* option together with the −*fr* option of *pinterp.* (The latter may actually work out to be faster, since rendering three views takes three times as long as a single view, and the −*fr* option will end up recomputing relatively few pixels by comparison.)

To use *pdfblur* with *rpict,* apply the −*S* option to indicate a rendering sequence, and set the −*o* option with a formatted file name to save multiple output pictures. When all the renderings are finished, combine them with the *pcomb(1)* program, using appropriate scalefactors to achieve an average. Note that using *rpict* is MUCH more expensive than using *pinterp,* and it is only recommended if the scene and application absolutely demand it (e.g. there is prominent refraction that must be modeled accurately).

For both *pinterp* and *rpict,* the computation time will be proportional to the number of views from *pdfblur.* We have found a *nsamp* setting somewhere between 5 and 10 to be adequate for most images. Relatively larger values are appropriate for larger aperatures.

EXAMPLES
To use *pinterp* to simulate an aperture of 0.5 inches on a lens focused at a distance of 57 inches:

    rpict -vf myview -x 640 -y 480 -z orig.zbf scene.oct > orig.pic
    pdfblur 0.5 57 8 orig.pic | pinterp -B -vf orig.pic -x 640 -y 480 orig.pic orig.zbf > blurry.pic

To use *rpict* exclusively to do the same:

    pdfblur .5 57 5 myview | rpict -S 1 -vf myview -x 640 -y 480 -o view%d.pic scene.oct
    pcomb -s .2 view1.pic -s .2 view2.pic -s .2 view3.pic -s .2 view4.pic -s .2 view5.pic > blurry.pic

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BUGS
This program really only works with perspective views.

SEE ALSO
pcomb(1), pinterp(1), pmblur(1), rcalc(1), rpict(1), vwright(1)