

## Name

clamp — constrain a value to lie between two further values

## Declaration

```
genType clamp( genType x,  
                genType minVal,  
                genType maxVal) ;
```

```
genType clamp( genType x,  
                float minVal,  
                float maxVal) ;
```

```
genDType clamp( genDType x,  
                 genDType minVal,  
                 genDType maxVal) ;
```

```
genDType clamp( genDType x,  
                 double minVal,  
                 double maxVal) ;
```

```
genIType clamp( genIType x,  
                 genIType minVal,  
                 genIType maxVal) ;
```

```
genIType clamp( genIType x,  
                 int minVal,  
                 int maxVal) ;
```

```
genUType clamp( genUType x,  
                 genUType minVal,  
                 genUType maxVal) ;
```

```
genUType clamp( genUType x,  
                 uint minVal,  
                 uint maxVal) ;
```

## Parameters

*x*

Specify the value to constrain.

*minVal*

Specify the lower end of the range into which to constrain *x*.

*maxVal*

Specify the upper end of the range into which to constrain *x*.

## Description

**clamp** returns the value of *x* constrained to the range *minVal* to *maxVal*. The returned value is computed as `min(max(x, minVal), maxVal)`.

## Version Support

Function Name	OpenGL Shading Language Version											
	1.10	1.20	1.30	1.40	1.50	3.30	4.00	4.10	4.20	4.30	4.40	4.50
clamp (genType)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
clamp (genIType)	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
clamp (genUType)	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
clamp (genDType)	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓

## See Also

[min](#), [max](#)

## Copyright

Copyright © 2011-2014 Khronos Group. This material may be distributed subject to the terms and conditions set forth in the Open Publication License, v 1.0, 8 June 1999. <http://opencontent.org/openpub/>.