NAG Library Routine Document

X02AMF

Note: before using this routine, please read the Users' Note for your implementation to check the interpretation of ***bold italicised*** terms and other implementation-dependent details.

1 Purpose

X02AMF returns the **safe range** of floating-point arithmetic.

2 Specification

```
FUNCTION X02AMF ()
REAL (KIND=nag_wp) X02AMF
```

3 Description

X02AMF is defined to be the smallest positive model number z such that for any x in the range $[z, 1/z]$ the following can be computed without undue loss of accuracy, overflow, underflow or other error:

$-x$

$1/x$

$-1/x$

$\sqrt{x}$

$\log(x)$

$\exp(\log(x))$

$y^{(\log(x)/\log(y))}$ for any y

4 References

None.

5 Parameters

None.

6 Error Indicators and Warnings

None.

7 Accuracy

None.

8 Parallelism and Performance

Not applicable.

9 Further Comments

None.

10 Example

See Section 10 in X02AJF.