NAG Library Routine Document

F06BMF

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

F06BMF completes the safe computation of the Euclidean length of a vector, following a call to F06FJF or F06KJF.

2 Specification

```
FUNCTION F06BMF (SCAL, SSQ)
REAL (KIND=nag_wp) F06BMF
REAL (KIND=nag_wp) SCAL, SSQ
```

3 Description

F06BMF completes the safe computation of the Euclidean length of a vector, following a call to F06FJF or F06KJF which return values α and ξ such that

$$\|x\|_2^2 = \alpha^2 \xi.$$

F06BMF returns, via the function name, the value

$$\min\left(\alpha\sqrt{\xi}, \mathit{flmax}\right),$$

where flmax is the value given by $1/$(X02AMF).

4 References

None.

5 Arguments

1: SCAL – REAL (KIND=nag_wp) *Input*

On entry: the scaling factor α, returned by F06FJF or F06KJF.

Constraint: SCAL ≥ 0.0.

2: SSQ – REAL (KIND=nag_wp) *Input*

On entry: the scaled sum of squares ξ, returned by F06FJF or F06KJF.

Constraint: SSQ ≥ 1.0.

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Parallelism and Performance

F06BMF is not threaded in any implementation.

9 Further Comments

None.

10 Example

None.