

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

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

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

4 References

None.

5 Parameters

- | | | |
|----|--|--------------|
| 1: | SCAL – REAL (KIND=nag_wp)
<i>On entry:</i> the scaling factor α , returned by F06FJF or F06KJF.
<i>Constraint:</i> SCAL \geq 0.0. | <i>Input</i> |
| 2: | SSQ – REAL (KIND=nag_wp)
<i>On entry:</i> the scaled sum of squares ξ , returned by F06FJF or F06KJF.
<i>Constraint:</i> SSQ \geq 1.0. | <i>Input</i> |

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Parallelism and Performance

Not applicable.

9 Further Comments

None.

10 Example

None.
