

NAG Library Routine Document

F06FLF

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

F06FLF returns the absolutely largest and absolutely smallest values from a real vector.

2 Specification

```
SUBROUTINE F06FLF (N, X, INCX, XMAX, XMIN)
  INTEGER          N, INCX
  REAL (KIND=nag_wp) X(*), XMAX, XMIN
```

3 Description

F06FLF returns the values x_{\max} and x_{\min} given by

$$x_{\max} = \max_i |x_i|, \quad x_{\min} = \min_i |x_i|,$$

where x is an n -element real vector scattered with stride INCX. If $n < 1$, then x_{\max} and x_{\min} are returned as zero.

4 References

None.

5 Arguments

- | | | |
|----|---|---------------|
| 1: | N – INTEGER | <i>Input</i> |
| | <i>On entry:</i> n , the number of elements in x . | |
| 2: | X(*) – REAL (KIND=nag_wp) array | <i>Input</i> |
| | Note: the dimension of the array X must be at least $\max(1, 1 + (N - 1) \times \text{INCX})$. | |
| | <i>On entry:</i> the n -element vector x . x_i must be stored in $X(1 + (i - 1) \times \text{INCX})$, for $i = 1, 2, \dots, N$. | |
| | Intermediate elements of X are not referenced. | |
| 3: | INCX – INTEGER | <i>Input</i> |
| | <i>On entry:</i> the increment in the subscripts of X between successive elements of x . | |
| | <i>Constraint:</i> $\text{INCX} > 0$. | |
| 4: | XMAX – REAL (KIND=nag_wp) | <i>Output</i> |
| | <i>On exit:</i> the value $x_{\max} = \max_i x_i $. | |
| 5: | XMIN – REAL (KIND=nag_wp) | <i>Output</i> |
| | <i>On exit:</i> the value $x_{\min} = \min_i x_i $. | |

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Parallelism and Performance

F06FLF is not threaded in any implementation.

9 Further Comments

None.

10 Example

None.
