

NAG Fortran Library Routine Document

F06RNF

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

F06RNF returns, via the function name, the value of the 1-norm, the ∞ -norm, the Frobenius norm, or the maximum absolute value of the elements of a real n by n tridiagonal matrix A .

2 Specification

```
double precision FUNCTION F06RNF (NORM, N, DL, D, DU)
  INTEGER                                N
  double precision                    DL(*), D(*), DU(*)
  CHARACTER*1                            NORM
```

3 Description

None.

4 References

None.

5 Parameters

- 1: NORM – CHARACTER*1 *Input*
On entry: specifies the value to be returned:
 if NORM = '1' or 'O', the 1-norm;
 if NORM = 'I', the ∞ -norm;
 if NORM = 'F' or 'E', the Frobenius (or Euclidean) norm;
 if NORM = 'M', the value $\max_{i,j} |a_{ij}|$ (not a norm).
Constraint: NORM = '1', 'O', 'I', 'F', 'E' or 'M'.
- 2: N – INTEGER *Input*
On entry: n , the order of the matrix A .
Constraint: $N \geq 0$.
- 3: DL(*) – **double precision** array *Input*
Note: the dimension of the array DL must be at least $\max(1, N - 1)$.
On entry: the $(n - 1)$ sub-diagonal elements of A .
- 4: D(*) – **double precision** array *Input*
Note: the dimension of the array D must be at least $\max(1, N)$.
On entry: the n diagonal elements of A .

5: DU(*) – *double precision* array

Input

Note: the dimension of the array DU must be at least $\max(1, N - 1)$.

On entry: the $(n - 1)$ super-diagonal elements of A .

6 Error Indicators and Warnings

None.
