

NAG Fortran Library Routine Document

F06UMF

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

F06UMF 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 complex n by n upper Hessenberg matrix.

2 Specification

double precision FUNCTION F06UMF (NORM, N, A, LDA, WORK)

INTEGER	N, LDA
<i>double precision</i>	WORK(*)
<i>complex*16</i>	A(LDA,*)
CHARACTER*1	NORM

3 Description

None.

4 References

None.

5 Parameters

- | | | |
|----|--|--------------|
| 1: | NORM – CHARACTER*1 | <i>Input</i> |
| | <i>On entry:</i> 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). | |
| | <i>Constraint:</i> NORM = '1', 'O', 'I', 'F', 'E' or 'M'. | |
| 2: | N – INTEGER | <i>Input</i> |
| | <i>On entry:</i> n , the order of the matrix A . | |
| | <i>Constraint:</i> $N \geq 0$. | |
| 3: | A(LDA,*) – <i>complex*16</i> array | <i>Input</i> |
| | Note: the second dimension of the array A must be at least $\max(1, N)$. | |
| | <i>On entry:</i> the n by n upper Hessenberg matrix A ; elements of the array below the first sub-diagonal are not referenced. | |
| 4: | LDA – INTEGER | <i>Input</i> |
| | <i>On entry:</i> the first dimension of the array A as declared in the (sub)program from which F06UMF is called. | |
| | <i>Constraint:</i> $LDA \geq \max(1, N)$. | |

5: WORK(*) – *double precision* array *Workspace*

Note: the dimension of the array WORK must be at least $\max(1, N)$ if NORM = 'I' and at least 1 otherwise.

6 Error Indicators and Warnings

None.
