

NAG Library Routine Document

F06UAF

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

F06UAF 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 m by n matrix.

2 Specification

```
double precision FUNCTION F06UAF(NORM, M, N, A, LDA, WORK)
INTEGER                                M, N, LDA
double precision                     WORK(*)
complex*16                           A(LDA,*)
CHARACTER*1                           NORM
```

3 Description

None.

4 References

None.

5 Parameters

- | | | |
|----|--|--------------|
| 1: | NORM – CHARACTER*1
<i>On entry:</i> specifies the value to be returned.
NORM = '1' or 'O'
The 1-norm.
NORM = 'I'
The ∞ -norm.
NORM = 'F' or 'E'
The Frobenius (or Euclidean) norm.
NORM = 'M'
The value $\max_{i,j} a_{ij} $ (not a norm).
<i>Constraint:</i> NORM = '1', 'O', 'I', 'F', 'E' or 'M'. | <i>Input</i> |
| 2: | M – INTEGER
<i>On entry:</i> m , the number of rows of the matrix A .
When M = 0, F06UAF is set to zero.
<i>Constraint:</i> $M \geq 0$. | <i>Input</i> |
| 3: | N – INTEGER
<i>On entry:</i> n , the number of columns of the matrix A . | <i>Input</i> |

When $M = 0$, F06UAF is set to zero.

Constraint: $N \geq 0$.

4: $A(LDA,*)$ – **complex*16** array *Input*

Note: the second dimension of the array A must be at least N .

On entry: the m by n matrix A .

5: LDA – INTEGER *Input*

On entry: the first dimension of the array A as declared in the (sub)program from which F06UAF is called.

Constraint: $LDA \geq \max(1, M)$.

6: $WORK(*)$ – **double precision** array *Workspace*

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

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

None.
