NAG Library Routine Document

F06HDF

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

F06HDF multiplies a complex vector by a scalar, preserving the input vector.

2 Specification

```
SUBROUTINE F06HDF (N, ALPHA, X, INCX, Y, INCY)

INTEGER                 N, INCX, INCY
COMPLEX (KIND=nag_wp) ALPHA, X(*), Y(*)
```

3 Description

F06HDF performs the operation

$$y \leftarrow \alpha x$$

where x and y are n-element complex vectors scattered with stride INCX and INCY respectively, and α is a complex scalar.

4 References

None.

5 Parameters

1: N – INTEGER *Input*

On entry: n, the number of elements in x and y.

2: ALPHA – COMPLEX (KIND=nag_wp) *Input*

On entry: the scalar α.

3: X$(*)$ – COMPLEX (KIND=nag_wp) array *Input*

Note: the dimension of the array X must be at least $\max(1, 1 + (\text{N} - 1) \times |\text{INCX}|)$.

On entry: the n-element vector x.

If INCX > 0, x_i must be stored in X$(1 + (i - 1) \times \text{INCX})$, for $i = 1, 2, \ldots, \text{N}$.

If INCX < 0, x_i must be stored in X$(1 - (\text{N} - i) \times \text{INCX})$, for $i = 1, 2, \ldots, \text{N}$.

Intermediate elements of X are not referenced.

4: INCX – INTEGER *Input*

On entry: the increment in the subscripts of X between successive elements of x.

5: Y$(*)$ – COMPLEX (KIND=nag_wp) array *Output*

Note: the dimension of the array Y must be at least $\max(1, 1 + (\text{N} - 1) \times |\text{INCY}|)$.

On exit: the vector y.

If INCY > 0, y_i will be stored in Y$(1 + (i - 1) \times$ INCY$)$, for $i = 1, 2, \ldots,$ N.

If INCY < 0, y_i will be stored in Y$(1 - ($N$ - i) \times$ INCY$)$, for $i = 1, 2, \ldots,$ N.

Intermediate elements of Y are unchanged.

6: INCY – INTEGER *Input*

On entry: the increment in the subscripts of Y between successive elements of y.

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

None.