NAG Library Routine Document

X02AHF

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

X02AHF returns the largest positive argument for which the Fortran intrinsic functions SIN and COS return a result with some meaningful accuracy.

2 Specification

```
FUNCTION X02AHF (X)
REAL (KIND=nag_wp) X02AHF
REAL (KIND=nag_wp) X
```

3 Description

The trigonometric functions sin and cos supplied in some compiler run-time libraries do not return accurate results when their argument is large. Often the related accuracy of a result gets progressively worse as the argument gets larger. X02AHF gives a value beyond which the compiler run-time library returns results with no relative accuracy at all. Note that some run-time libraries do return accurate results for all arguments to sin and cos.

4 References

None.

5 Arguments

1: X – REAL (KIND=nag_wp) *Dummy*

6 Error Indicators and Warnings

None.

7 Accuracy

None.

8 Parallelism and Performance

X02AHF is not threaded in any implementation.

9 Further Comments

None.

10 Example

See Section 10 in X02AJF.