

NAG Toolbox for MATLAB

g05yc

1 Purpose

g05yc initializes the Faure generator. It must be called before using g05yd and is required if a Faure sequence is wanted from g05yj or g05yk.

2 Syntax

```
[iref, ifail] = g05yc(idim)
```

3 Description

g05yc places vital initialization information into the array **iref** for subsequent use by the generator functions.

4 References

None.

5 Parameters

5.1 Compulsory Input Parameters

1: **idim** – int32 scalar

the number of dimensions required.

Constraint: $1 \leq \text{idim} \leq 40$.

5.2 Optional Input Parameters

None.

5.3 Input Parameters Omitted from the MATLAB Interface

None.

5.4 Output Parameters

1: **iref(406)** – int32 array

Contains initialization information for use with the generator functions. **iref** should not be altered in any way between initialization and calls of the generator functions.

2: **ifail** – int32 scalar

0 unless the function detects an error (see Section 6).

6 Error Indicators and Warnings

Errors or warnings detected by the function:

ifail = 1

On entry, **idim** < 1 or **idim** > 40.

ifail = 2

There has been a serious malfunction of the initialization function. Please contact NAG.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

```
n = int32(2);
idim = int32(15);
[iref, ifail] = g05yc(idim);
if (ifail == 0)
    sm = 0;
    for i = 1:5000
        [quasi, iref, ifail] = g05yd(n, iref);
        if ifail ~= 0, break, end;
        f = abs(4*quasi-2);
        sm = sm + prod(f(1,1:15)) + prod(f(2,1:15));
    end
    if (ifail == 0)
        vsbl = sm/2/5000;
        fprintf('\nValue of integral = %10.4f\n', vsbl);
    end
end

Value of integral =      0.9541
```