



## UK Atmospheric Hi-Res Model



Atmospheric forecast data

## Met Office Unified Model

The flagship numerical weather prediction (NWP) model developed and used at the Met Office is called the Unified Model (UM). Unlike most other NWP centres, the same model is used for both weather and climate prediction. For weather forecasting the Met Office run several configurations of the UM as part of its operational NWP suite.

A global configuration provides the large-scale weather forecast and also supports the nested higher resolution regional models with boundary data. More detailed short-range forecasts are provided by these high-resolution models which are able to represent certain atmospheric processes more accurately, as well as having a more detailed representation of surface features such as coastlines and orography.

## Met Office UK Atmospheric Hi-Res Model

A post processed regional downscaled configuration of the Unified Model, covering the UK and Ireland, with hourly forecast data covering the period T+0 to T+48 hours, and 3 hourly forecasts out to T+120.

With a resolution of approximately 0.018 degrees hourly data is produced at surface level and at standard pressure levels eight times a day.

The model's initial state is kept close to the real atmosphere using incremental 3D-Var data assimilation.



### Resolution

Aprox 2km

## Un-split File 1 [yyyyymmddhhmm\_u1096\_ng\_umqv\_Wholesale1.grib]

Full domain, all available time steps and the following surface level parameters:

1. 1.5m temperature
2. 1.5m dew point
3. 1.5m visibility
4. 1.5m fog probability
5. 1.5m relative humidity
6. 10m wind speed
7. 10m wind direction
8. mean sea level pressure
9. total precipitation accumulation (accumulation periods: 60 mins up to T+48, 180 mins (3 hours) thereafter)
10. total precipitation rate
11. snow fraction
12. surface (skin) temperature

## Un-split File 2 [yyyyymmddhhmm\_u1096\_ng\_umqv\_Wholesale2.grib]

Full domain, all available time steps and the following surface level parameters:

1. low cloud amount
2. medium cloud amount
3. high cloud amount
4. convective cloud base height
5. convective cloud top height
6. cloud fraction below 1000ft AGL
7. height lowest cloud base > 3 oktas
8. snow depth (metres)
9. wet bulb freezing level height AGL
10. short wave radiation
11. long wave radiation
12. total cloud cover
13. dry bulb freezing level height AGL

## Un-split File 3 [yyyyymmddhhmm\_u1096\_ng\_umqv\_Wholesale3.grib]

Full domain, all available time steps and the following multi-level parameters:

1. temperature
2. wind speed
3. wind direction
4. relative humidity
5. geometric height

Standard Pressure Levels (hPa):

30, 70, 100, 150, 200, 250, 300, 400, 500, 600, 700, 850, 925, 950, 1000

## Un-split File 4 [yyyyymmddhhmm\_u1096\_ng\_umqv\_Wholesale4.grib]

Full domain, T+0 to T+36 (hourly) time steps and the following surface level parameters:

1. 10m wind gust
2. 10m maximum wind gust in hour

## Un-split File 5 [yyyyymmddhhmm\_u1096\_ng\_umqv\_Wholesale5.grib]

Full domain, all available time steps and the following surface level parameters:

1. lightning risk

## Un-split File 6 [constant\_u1096\_ng\_umqv\_Wholesale.grib]

Full domain, fixed ancillary files

1. land-sea mask
2. orographic height



## Domain

The United Kingdom domain is a 1,096km x 1,408km ~2km resolution grid.  
The OS National Grid corners of the domain are:

NW corner	1223km North	-239km East	60.375N 13.643W
SW corner	-185km North	-239km East	47.926N 10.562W
SE corner	-185km North	857km East	48.081N 4.137E
NE corner	1223km North	857km East	60.622N 6.371E
Extreme values	1223km North	857km East	60.884N 6.371E
	-185km North	-239km East	47.926N 13.643W



## Time steps

Hourly covering the period T+0 to T+48, then 3 hourly to T+120 (Unless stated)



## Model Run Times

00, 03\*, 06, 09, 12, 15\*, 18 & 21 UTC  
All runs to T+54, \*Extended runs to T+120



## Format

GRIB2