European Atmospheric Hi-Res Model

Met Office

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.

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A regional downscaled configuration of the Unified Model, covering a European domain, with hourly forecast data covering the period T+1 to T+54 hours.

With a resolution of approximately 0.04 degrees it is able to produce selected hourly data covering the first 48 hours at surface level and at standard pressure levels four times a day.

The model's initial state is kept close to the real atmosphere by starting from a downscaled global starting condition.

Surface Level Parameters		Time Steps	Code
1.	1.5m temperature	Hourly	11
2.	1.5m dew point	Hourly	17
3.	1.5m visibility	Hourly	20
4.	1.5m specific humidity	Hourly	51
5.	1.5m fog fraction	Hourly	138
6.	1.5 m relative humidity	Hourly	52
7.	10m wind u-component	Hourly	33
8.	10m wind v-component	Hourly	34
9.	10m wind gust	Hourly	149
10.	max wind u-component	Hourly	33
11.	max wind v-component	Hourly	34
12.	max wind ICAO height (kft)	Hourly	5
13.	0°C isotherm ICAO height	Hourly	5
14.	0°C isotherm geopotential height	Hourly	7
15.	minus 20°C level ICAO height	Hourly	5
16.	mean sea level pressure	Hourly	2
17.	surface pressure	Hourly	1
18.	surface temperature	Hourly	11
19.	maximum surface temperature	6 Hourly	15
20.	minimum surface temperature	6 Hourly	16
21.	high cloud amount	Hourly	75
22.	medium cloud amount	Hourly	74
23.	low cloud amount	Hourly	73
24.	total cloud	Hourly	71

25.	convective cloud amount	Hourly	72
26.	convective cloud base (hPa)	Hourly	153
27.	convective cloud top (hPa)	Hourly	154
28.	cloud fraction (below 1000ft ASL)	Hourly	207
29.	height lowest cloud base > 2.5 (oktas)	Hourly	151
30.	dynamic rain rate	Hourly	143
31.	convective rain rate	Hourly	144
32.	dynamic rain accumulation	Hourly	62
33.	convective rain accumulation	Hourly	140
34.	convective snow accumulation	Hourly	79
35.	dynamic snow accumulation	Hourly	78
36.	dynamic snow rate	Hourly	146
37.	convective snow rate	Hourly	147
38.	total precipitation accumulation	Hourly	61
39.	total precipitation rate	Hourly	59
40.	snow depth	Hourly	65
41.	wet bulb freezing level height ASL	Hourly	152
42.	downward surface long wave flux	Hourly	112
43.	downward surface short wave flux	Hourly	116
44.	direct surface short wave flux	Hourly	204
45.	diffuse surface short wave flux	Hourly	205
46.	Land/Sea mask		81
47.	roughness length		83
48.	orography		148

Multi Level Parameters

Standard Pressure Levels (hPa): 30, 70, 100, 150, 200, 250, 300, 400, 500, 600, 700, 850, 925, 950, 1000

1.	temperature	Hourly	11
2.	wind U	Hourly	33
3.	wind V	Hourly	34
4.	wind W	Hourly	40
5.	relative humidity	Hourly	52
6.	geopotential height	Hourly	7

Model Level Parameters

Model Levels: 3, 4, 5, 6, 7, 8, 9, 11, 13, 15, 18, 25

1.	wind U	Hourly	33
2.	wind V	Hourly	34
3.	wind W	Hourly	40
4.	temperature	Hourly	11
5.	specific humidity	Hourly	52
6.	cloud amount	Hourly	71

Wind (u & v)	Model Level	Temperature, Specific Humidity, Cloud Amount & wind w
33m	3	45m
60m	4	75m
93m	5	111m
133m	6	155m
180m	7	205m
233m	8	262m
293m	9	325m
433m	11	472m
600m	13	645m
793m	15	845m
1,133m	18	1,195m
2,160m	25	2,245m

Time steps

T+1 to T+54 as stated

Model Run Times

00UTC, 06UTC, 12UTC & 18UTC

Domain

Latitude: 68.00°N to 33.00°N
Longitude: 14.00°W to 37.00°E

Resolution

0.04° (~4km)

Format

GriB1