



Supplement of

The KNMI Large Ensemble Time Slice (KNMI–LENTIS)

Laura Muntjewerf et al.

Correspondence to: Laura Muntjewerf (laura.muntjewerf@knmi.nl)

The copyright of individual parts of the supplement might differ from the article licence.

table	variable	dimensions	long_name	unit	comment
3hr 164.128	clt	longitude latitude time	Total Cloud Cover Percentage	%	ifs code name =
3hr 147.128	hfls	longitude latitude time	Surface Upward Latent Heat Flux	W m-2	ifs code name =
3hr 146.128	hfss	longitude latitude time	Surface Upward Sensible Heat Flux	W m-2	ifs code name =
3hr 81.129,	huss	longitude latitude time1 height2m	Near-Surface Specific Humidity	1	ifs code name =
3hr 81.129,	expression = 1./((1.+1.608*(var134*exp(-17.62*(var168-273.15)/(var168-30.03))/611.-1.))				
3hr mrro ifs	code name = 205.128	longitude latitude time	Total Runoff	kg m-2 s-1	lpjg code name =
3hr mrsos ifs	mrsos	longitude latitude time1 sdepth1	Moisture in Upper Portion of Soil Column	kg m-2	lpjg code name =
3hr 228.128	pr	longitude latitude time	Precipitation	kg m-2 s-1	ifs code name =
3hr 143.128	prc	longitude latitude time	Convective Precipitation	kg m-2 s-1	ifs code name =
3hr 144.128	prsn	longitude latitude time	Snowfall Flux	kg m-2 s-1	ifs code name =
3hr ps ifs	code name = 134.128	longitude latitude time1	Surface Air Pressure	Pa	tm5 code name =
3hr 175.128	rlds	longitude latitude time	Surface Downwelling Longwave Radiation	W m-2	ifs code name =
3hr 104.129,	rldscs	longitude latitude time	Surface Downwelling Clear-Sky Longwave Radiation	W m-2	ifs code name =
3hr 96.129,	expression = var211-var177+var175				
3hr 169.128	rlus	longitude latitude time	Surface Upwelling Longwave Radiation	W m-2	ifs code name =
3hr 132.129,	expression = var177-var175				
3hr 95.129,	rsds	longitude latitude time	Surface Downwelling Shortwave Radiation	W m-2	ifs code name =
3hr 131.129,	rsdscs	longitude latitude time	Surface Downwelling Clear-Sky Shortwave Radiation	W m-2	ifs code name =
3hr 95.129,	expression = (var176<=1e-10)*var210+(var176>1e-10)*var210*var169/var176				
3hr 131.129,	rsus	longitude latitude time	Surface Upwelling Shortwave Radiation	W m-2	ifs code name =
3hr 167.128	expression = var176-var169				
3hr 165.128	rsuscs	longitude latitude time	Surface Upwelling Clear-Sky Shortwave Radiation	W m-2	ifs code name =
3hr 166.128	expression = (var176>1e-10)*var210*(1-var169/var176)				
3hr 167.128	tas	longitude latitude time1 height2m	Near-Surface Air Temperature	K	ifs code name =
3hr 165.128	uas	longitude latitude time1 height10m	Eastward Near-Surface Wind	m s-1	ifs code name =
3hr 166.128	vas	longitude latitude time1 height10m	Northward Near-Surface Wind	m s-1	ifs code name =
SImon siage	siage	longitude latitude time	Age of Sea Ice	s	nemo code name =
SImon siconc	siconc	longitude latitude time typesi	Sea-Ice Area Percentage (Ocean Grid)	%	nemo code name =
SImon siconca	siconca	longitude latitude time typesi	Sea-Ice Area Percentage (Atmospheric Grid)	%	ifs code name =
31.129,	expression = var31 / (var172<=0.5)				
SImon simass	simass	longitude latitude time	Sea-Ice Mass per Area	kg m-2	nemo code name =
SImon sithick	sithick	longitude latitude time	Sea Ice Thickness	m	nemo code name =
SImon sivol	sivol	longitude latitude time	Sea-Ice Volume per Area	m	nemo code name =
Amon 79.128	clivi	longitude latitude time	Ice Water Path	kg m-2	ifs code name =
Amon 164.128	clt	longitude latitude time	Total Cloud Cover Percentage	%	ifs code name =
Amon 116.129,	clwvi	longitude latitude time	Condensed Water Path	kg m-2	ifs code name =
Amon 182.128	expression = var78+var79				
Amon 147.128	evspsbl	longitude latitude time	Evaporation Including Sublimation and Transpiration	kg m-2 s-1	ifs code name =
Amon 146.128	hfls	longitude latitude time	Surface Upward Latent Heat Flux	W m-2	ifs code name =
Amon 157.128	hfss	longitude latitude time	Surface Upward Sensible Heat Flux	W m-2	ifs code name =
Amon 80.129,	hur	longitude latitude plev19 time	Relative Humidity	%	ifs code name =
Amon 133.128	hurs	longitude latitude time height2m	Near-Surface Relative Humidity	%	ifs code name =
Amon 133.128	expression = 100.*exp(17.62*((var168-273.15)/(var168-30.03))-(var167-273.15)/(var167-30.03))				
Amon 81.129,	hus	longitude latitude plev19 time	Specific Humidity	1	ifs code name =
Amon 81.129,	huss	longitude latitude time height2m	Near-Surface Specific Humidity	1	ifs code name =
Amon 81.129,	expression = 1./((1.+1.608*(var134*exp(-17.62*(var168-273.15)/(var168-30.03))/611.-1.))				

Amon	pr	longitude latitude time	Precipitation	kg m-2 s-1	ifs code name =
228.128					
Amon	prc	longitude latitude time	Convective Precipitation	kg m-2 s-1	ifs code name =
143.128					
Amon	prsn	longitude latitude time	Snowfall Flux	kg m-2 s-1	ifs code name =
144.128					
Amon	prw	longitude latitude time	Water Vapor Path	kg m-2	ifs code name =
137.128					
Amon	ps	longitude latitude time	Surface Air Pressure	Pa	tm5 code name =
ps ifs code name = 134.128					
Amon	psl	longitude latitude time	Sea Level Pressure	Pa	ifs code name =
151.128					
Amon	rlds	longitude latitude time	Surface Downwelling Longwave Radiation	W m-2	ifs code name =
175.128					
Amon	rldscs	longitude latitude time	Surface Downwelling Clear-Sky Longwave Radiation	W m-2	ifs code name =
104.129, expression = var211-var177+var175					
Amon	rflus	longitude latitude time	Surface Upwelling Longwave Radiation	W m-2	ifs code name =
96.129, expression = var177-var175					
Amon	rlut	longitude latitude time	TOA Outgoing Longwave Radiation	W m-2	ifs code name =
179.128					
Amon	rlutcs	longitude latitude time	TOA Outgoing Clear-Sky Longwave Radiation	W m-2	ifs code name =
209.128					
Amon	rsds	longitude latitude time	Surface Downwelling Shortwave Radiation	W m-2	ifs code name =
169.128					
Amon	rsdscs	longitude latitude time	Surface Downwelling Clear-Sky Shortwave Radiation	W m-2	ifs code name =
132.129, expression = (var176<=1e-10)*var210+(var176>1e-10)*var210*var169/var176					
Amon	rsdt	longitude latitude time	TOA Incident Shortwave Radiation	W m-2	ifs code name =
212.128					
Amon	rsus	longitude latitude time	Surface Upwelling Shortwave Radiation	W m-2	ifs code name =
95.129, expression = var176-var169					
Amon	rsuscs	longitude latitude time	Surface Upwelling Clear-Sky Shortwave Radiation	W m-2	ifs code name =
131.129, expression = (var176>1e-10)*var210*(1-var169/var176)					
Amon	rsut	longitude latitude time	TOA Outgoing Shortwave Radiation	W m-2	ifs code name =
97.129, expression = var178-var212					
Amon	rsutcs	longitude latitude time	TOA Outgoing Clear-Sky Shortwave Radiation	W m-2	ifs code name =
103.129, expression = var208-var212					
Amon	rtmt	longitude latitude time	Net Downward Radiative Flux at Top of Model	W m-2	ifs code name =
98.129, expression = var178+var179					
Amon	sbl	longitude latitude time	Surface Snow and Ice Sublimation Flux	kg m-2 s-1	ifs code name =
44.128					
Amon	sfcWind	longitude latitude time height10m	Near-Surface Wind Speed	m s-1	ifs code name =
214.129, expression = sqrt(sqrt(var165)+sqrt(var166))					
Amon	ta	longitude latitude plev19 time	Air Temperature	K	ifs code name =
130.128					
Amon	tas	longitude latitude time height2m	Near-Surface Air Temperature	K	ifs code name =
167.128					
Amon	tasmax	longitude latitude time height2m	Daily Maximum Near-Surface Air Temperature	K	ifs code name =
201.128					
Amon	tasmin	longitude latitude time height2m	Daily Minimum Near-Surface Air Temperature	K	ifs code name =
202.128					
Amon	ts	longitude latitude time	Surface Temperature	K	ifs code name =
139.128					
Amon	ua	longitude latitude plev19 time	Eastward Wind	m s-1	ifs code name =
131.128					
Amon	uas	longitude latitude time height10m	Eastward Near-Surface Wind	m s-1	ifs code name =
165.128					
Amon	va	longitude latitude plev19 time	Northward Wind	m s-1	ifs code name =
132.128					
Amon	vas	longitude latitude time height10m	Northward Near-Surface Wind	m s-1	ifs code name =
166.128					
Amon	wap	longitude latitude plev19 time	Omega (=dp/dt)	Pa s-1	ifs code name =
135.128					
Amon	zg	longitude latitude plev19 time	Geopotential Height	m	ifs code name =
129.128					
Omon	evs	longitude latitude time	Water Evaporation Flux Where Ice Free Ocean over Sea	kg m-2 s-1	nemo code name =
evs					
Omon	friver	longitude latitude time	Water Flux into Sea Water from Rivers	kg m-2 s-1	nemo code name =
friver					
Omon	fsitherm	longitude latitude time	Water Flux into Sea Water Due to Sea Ice Thermodynamics	kg m-2 s-1	nemo code name =
fsitherm					
Omon	hfbasin	latitude basin time	Northward Ocean Heat Transport	W	nemo code name =
hfbasin					
Omon	hfds	longitude latitude time	Downward Heat Flux at Sea Water Surface	W m-2	nemo code name =
hfds					
Omon	hfevapds	longitude latitude time	Temperature Flux Due to Evaporation Expressed as Heat Flux out of Sea Water	W m-2	nemo code name =

hfevapds						
Omon	hfgeou	longitude latitude time	Upward Geothermal Heat Flux at Sea Floor	W m-2		nemo code name =
hfgeou						
Omon	hfrainds	longitude latitude time	Temperature Flux Due to Rainfall Expressed as Heat Flux into Sea Water	W m-2		nemo code name =
hfrainds						
Omon	htovgyre	latitude basin time	Northward Ocean Heat Transport Due to Gyre	W		nemo code name =
htovgyre						
Omon	htovovrt	latitude basin time	Northward Ocean Heat Transport Due to Overturning	W		nemo code name =
htovovrt						
Omon	masso	time	Sea Water Mass	kg		nemo code name =
masso						
Omon	m1otst	longitude latitude time	Ocean Mixed Layer Thickness Defined by Sigma T	m		nemo code name =
m1otst						
Omon	msftbarot	longitude latitude time	Ocean Barotropic Mass Streamfunction	kg s-1		nemo code name =
msftbarot						
Omon	msftyz	gridlatitude olevel basin time	Ocean Y Overturning Mass Streamfunction	kg s-1		nemo code name =
msftyz						
Omon	pbo	longitude latitude time	Sea Water Pressure at Sea Floor	Pa		nemo code name =
pbo						
Omon	pso	longitude latitude time	Sea Water Pressure at Sea Water Surface	Pa		nemo code name =
pso						
Omon	rsntds	longitude latitude time	Net Downward Shortwave Radiation at Sea Water Surface	W m-2		nemo code name =
rsntds						
Omon	sfdsi	longitude latitude time	Downward Sea Ice Basal Salt Flux	kg m-2 s-1		nemo code name =
sfdsi						
Omon	sltovgyre	latitude basin time	Northward Ocean Salt Transport Due to Gyre	kg s-1		nemo code name =
sltovgyre						
Omon	sltovovrt	latitude basin time	Northward Ocean Salt Transport Due to Overturning	kg s-1		nemo code name =
sltovovrt						
Omon	soga	time	Global Mean Sea Water Salinity	0.001		nemo code name =
soga						
Omon	sos	longitude latitude time	Sea Surface Salinity	0.001		nemo code name =
sos						
Omon	thetaoga	time	Global Average Sea Water Potential Temperature	degC		nemo code name =
thetaoga						
Omon	tos	longitude latitude time	Sea Surface Temperature	degC		nemo code name =
tos						
Omon	tosga	time	Global Average Sea Surface Temperature	degC		nemo code name =
tosga						
Omon	tossq	longitude latitude time	Square of Sea Surface Temperature	degC2		nemo code name =
tossq						
Omon	volo	time	Sea Water Volume	m3		nemo code name =
volo						
Omon	wfo	longitude latitude time	Water Flux into Sea Water	kg m-2 s-1		nemo code name =
wfo						
Omon	wfonocorr	longitude latitude time	Water Flux into Sea Water Without Flux Correction	kg m-2 s-1		nemo code name =
wfonocorr						
Omon	zhalfo	longitude latitude olevelhalf time	Depth Below Geoid of Interfaces Between Ocean Layers	m		nemo code name =
zhalfo						
Omon	zos	longitude latitude time	Sea Surface Height Above Geoid	m		nemo code name =
zos						
Omon	zossq	longitude latitude time	Square of Sea Surface Height Above Geoid	m2		nemo code name =
zossq						
Omon	zostoga	time	Global Average Thermosteric Sea Level Change	m		nemo code name =
zostoga						
fx	areacella	longitude latitude	Grid-Cell Area for Atmospheric Grid Variables	m2		ifs code name =
129.128						
fx	orog	longitude latitude	Surface Altitude	m		ifs code name =
129.128						
fx	sftlf	longitude latitude	Percentage of the Grid Cell Occupied by Land (Including Lakes)	%		ifs code name =
172.128						
6hrPlev	wap4	longitude latitude plev4 time	Omega (=dp/dt)	Pa s-1		ifs code name =
135.128						
6hrPlev	wsgmax10m	longitude latitude time height10m	Maximum Wind Speed of Gust at 10m	m s-1		ifs code name =
49.128						
day	clt	longitude latitude time	Total Cloud Cover Percentage	%		ifs code name =
164.128						
day	hfls	longitude latitude time	Surface Upward Latent Heat Flux	W m-2		ifs code name =
147.128						
day	hfss	longitude latitude time	Surface Upward Sensible Heat Flux	W m-2		ifs code name =
146.128						
day	hur	longitude latitude plev8 time	Relative Humidity	%		ifs code name =
157.128						

day	hurs	longitude latitude time height2m	Near-Surface Relative Humidity	%	ifs code name =
80.129,	expression = 100.*exp(17.62*((var168-273.15)/(var168-30.03))-(var167-273.15)/(var167-30.03))				
day	hursmax	longitude latitude time height2m	Daily Maximum Near-Surface Relative Humidity	%	ifs code name =
80.129,	expression = 100.*exp(17.62*((var168-273.15)/(var168-30.03))-(var167-273.15)/(var167-30.03))				
day	hursmin	longitude latitude time height2m	Daily Minimum Near-Surface Relative Humidity	%	ifs code name =
80.129,	expression = 100.*exp(17.62*((var168-273.15)/(var168-30.03))-(var167-273.15)/(var167-30.03))				
day	hus	longitude latitude plev8 time	Specific Humidity	1	ifs code name =
133.128					
day	huss	longitude latitude time height2m	Near-Surface Specific Humidity	1	ifs code name =
81.129,	expression = 1./(1.+1.608*(var134*exp(-17.62*(var168-273.15)/(var168-30.03))/611.-1.))				
day	mrro	longitude latitude time	Total Runoff	kg m-2 s-1	lpjg code name =
mrro ifs	code name = 205.128				
day	mrso	longitude latitude time	Total Soil Moisture Content	kg m-2	lpjg code name =
mrso ifs	code name = 43.129, expression = 70*var39+210*var40+720*var41+1890*var42				
day	mrso	longitude latitude time sdepth1	Moisture in Upper Portion of Soil Column	kg m-2	lpjg code name =
mrso ifs	code name = 99.129, expression = 70*var39+30*var40				
day	pr	longitude latitude time	Precipitation	kg m-2 s-1	ifs code name =
228.128					
day	prc	longitude latitude time	Convective Precipitation	kg m-2 s-1	ifs code name =
143.128					
day	prsn	longitude latitude time	Snowfall Flux	kg m-2 s-1	ifs code name =
144.128					
day	psl	longitude latitude time	Sea Level Pressure	Pa	ifs code name =
151.128					
day	rlds	longitude latitude time	Surface Downwelling Longwave Radiation	W m-2	ifs code name =
175.128					
day	rhus	longitude latitude time	Surface Upwelling Longwave Radiation	W m-2	ifs code name =
96.129,	expression = var177-var175				
day	rlut	longitude latitude time	TOA Outgoing Longwave Radiation	W m-2	ifs code name =
179.128					
day	rsds	longitude latitude time	Surface Downwelling Shortwave Radiation	W m-2	ifs code name =
169.128					
day	rsus	longitude latitude time	Surface Upwelling Shortwave Radiation	W m-2	ifs code name =
95.129,	expression = var176-var169				
day	sfcWind	longitude latitude time height10m	Daily-Mean Near-Surface Wind Speed	m s-1	ifs code name =
214.129,	expression = sqrt(sqrt(var165)+sqrt(var166))				
day	sfcWindmax	longitude latitude time height10m	Daily Maximum Near-Surface Wind Speed	m s-1	ifs code name =
214.129,	expression = sqrt(sqrt(var165)+sqrt(var166))				
day	snc	longitude latitude time	Snow Area Percentage	%	ifs code name =
119.129,	expression = 100*(var141>0)				
day	snw	longitude latitude time	Surface Snow Amount	kg m-2	ifs code name =
141.128					
day	ta	longitude latitude plev8 time	Air Temperature	K	ifs code name =
130.128					
day	tas	longitude latitude time height2m	Near-Surface Air Temperature	K	ifs code name =
167.128					
day	tasmax	longitude latitude time height2m	Daily Maximum Near-Surface Air Temperature	K	ifs code name =
201.128					
day	tasmin	longitude latitude time height2m	Daily Minimum Near-Surface Air Temperature	K	ifs code name =
202.128					
day	tslsi	longitude latitude time	Surface Temperature Where Land or Sea Ice	K	ifs code name =
235.128					
day	ua	longitude latitude plev8 time	Eastward Wind	m s-1	ifs code name =
131.128					
day	uas	longitude latitude time height10m	Eastward Near-Surface Wind	m s-1	ifs code name =
165.128					
day	va	longitude latitude plev8 time	Northward Wind	m s-1	ifs code name =
132.128					
day	vas	longitude latitude time height10m	Northward Near-Surface Wind	m s-1	ifs code name =
166.128					
day	wap	longitude latitude plev8 time	Omega (=dp/dt)	Pa s-1	ifs code name =
135.128					
AERmon	lwp	longitude latitude time	Liquid Water Path	kg m-2	ifs code name =
78.128					
Emon	mrso	longitude latitude sdepth time	Total Water Content of Soil Layer	kg m-2	lpjg code name =
mrso ifs	code name = 118.129, expression = merge(70*var39,210*var40,720*var41,1890*var42)				
Emon	rls	longitude latitude time	Net Longwave Surface Radiation	W m-2	ifs code name =
177.128					
Emon	rss	longitude latitude time	Net Shortwave Surface Radiation	W m-2	ifs code name =
176.128					
CFday	clivi	longitude latitude time	Ice Water Path	kg m-2	ifs code name =
79.128					
CFday	clwvi	longitude latitude time	Condensed Water Path	kg m-2	ifs code name =

116.129, expression = var78+var79

Oday tos	tos	longitude latitude time	Sea Surface Temperature	degC	nemo code name =
Lmon 85.129, expression = 1000*(0.07*var39*((var139<270.16)+0.5*(var139<274.16 && var139>270.16)*(1-sin(0.785*(var139-272.16)))) + 0.21*var40*((var170<270.16)+0.5*(var170>270.16)*(1-sin(0.785*(var170-272.16)))) + 0.72*var41*((var183<270.16)+0.5*(var183>274.16 && var183>270.16)*(1-sin(0.785*(var183-272.16)))) + 1.89*var42*((var236<270.16)+0.5*(var236>270.16)*(1-sin(0.785*(var236-272.16))))	longitude latitude time	Soil Frozen Water Content	kg m-2	ifs code name =	
Lmon mrro ifs code name = 205.128	mrro	longitude latitude time	Total Runoff	kg m-2 s-1	lpjg code name =
Lmon mrros ifs code name = 8.128	mrros	longitude latitude time	Surface Runoff	kg m-2 s-1	lpjg code name =
Lmon mrso ifs code name = 43.129, expression = 70*var39+210*var40+720*var41+1890*var42	mrso	longitude latitude time	Total Soil Moisture Content	kg m-2	lpjg code name =
Lmon mrsos ifs code name = 99.129, expression = 70*var39+30*var40	mrsos	longitude latitude time sdepth1	Moisture in Upper Portion of Soil Column	kg m-2	lpjg code name =
Lmon tsl ifs code name = 117.129, expression = merge(var139,var170,var183,var236)	tsl	longitude latitude sdepth time	Temperature of Soil	K	lpjg code name =
LImon 120.129, expression = (var141>0)*(var146+var147+var176+var177)	hfdsn	longitude latitude time	Downward Heat Flux into Snow Where Land over Land	W m-2	ifs code name =
LImon 44.128	sbl	longitude latitude time	Surface Snow and Ice Sublimation Flux	kg m-2 s-1	ifs code name =
LImon 119.129, expression = 100*(var141>0)	snc	longitude latitude time	Snow Area Percentage	%	ifs code name =
LImon 115.129, expression = 1000*var141/var33	snd	longitude latitude time	Snow Depth	m	ifs code name =
LImon 45.128	snm	longitude latitude time	Surface Snow Melt	kg m-2 s-1	ifs code name =
LImon 141.128	snw	longitude latitude time	Surface Snow Amount	kg m-2	ifs code name =
LImon 238.128	tsn	longitude latitude time	Snow Internal Temperature	K	ifs code name =
Ofx areacello	areacello	longitude latitude	Grid-Cell Area for Ocean Variables	m2	nemo code name =
Ofx basin	basin	longitude latitude	Region Selection Index	1	nemo code name =
Ofx Bathymetry	deptho	longitude latitude	Sea Floor Depth Below Geoid	m	nemo code name =
Ofx hfgeou	hfgeou	longitude latitude	Upward Geothermal Heat Flux at Sea Floor	W m-2	nemo code name =
Ofx sftof	sftof	longitude latitude	Sea Area Percentage	%	nemo code name =
6hrPlevPt 151.128	psl	longitude latitude time1	Sea Level Pressure	Pa	ifs code name =
6hrPlevPt 138.128	rv850	longitude latitude time1 p850	Relative Vorticity at 850hPa	s-1	ifs code name =
6hrPlevPt 130.128	ta	longitude latitude plev3 time1	Air Temperature	K	ifs code name =
6hrPlevPt 131.128	ua	longitude latitude plev3 time1	Eastward Wind	m s-1	ifs code name =
6hrPlevPt 132.128	va	longitude latitude plev3 time1	Northward Wind	m s-1	ifs code name =
6hrPlevPt 129.128	zg500	longitude latitude time1 p500	Geopotential Height at 500hPa	m	ifs code name =
Eday 137.128	prw	longitude latitude time	Water Vapor Path	kg m-2	ifs code name =
Eday 159.128	zmla	longitude latitude time	Height of Boundary Layer	m	ifs code name =
Heuristic volume estimate for the raw EC-Earth3 IFS output on the T255L91 grid:			19.2 GB per year		
Heuristic volume estimate for the raw EC-Earth3 IFS output on the T511L91 grid:			73.6 GB per year		
Heuristic volume estimate for the raw EC-Earth3 NEMO output on the ORCA1L75 grid:			0.6 GB per year		
Heuristic volume estimate for the raw EC-Earth3 NEMO output on the ORCA025L75 grid:			8.2 GB per year		
Heuristic volume estimate for the raw EC-Earth3 TMS output on the TMS 3x2 deg grid:			0.0 GB per year		
Heuristic volume estimate for the raw EC-Earth3 LPJG output on the T255 grid:			0.0 GB per year		