

# Readme file for the LUCAS 2015 Spectral data

(04/11/2020)

This package contains the spectral data of the LUCAS 2015 Soil survey (file *LUCAS2015\_Soil\_Spectra\_EU28*). Diffuse reflectance spectra were collected for **21782 samples** in the visible (400 to 780 nm) and the near infrared (780 to 2500 nm) regions with 0.5 nm spectral resolution. Measurements were carried out following the protocol of the Soil Spectroscopy Group <sup>(1)</sup> with a FOSS Rapid Content Analyzer <sup>(2)</sup>. Two spectra were collected per sample, rotating the sample container each time so that each measurement spots a different area of the soil sample. The values in the file are Absorbance.

The package contains one CSV file for each member state. Altogether, there are 28 CSV files, including UK. In the files, each sample is identified by its Point ID and Soil ID. Each row contains a spectrum. The data are absorbance in the vis-NIR regions.

Description of the fields in the 28 CSV files:

Field	Description	Units/ Values
Source	Unique identifier of the sample in the laboratory (for ESDAC internal purposes only)	LU_\$\$_\$\$\$.txt
SampleID <sup>(2)</sup>	Unique identifier of the two spectra collected per sample	Soil ID_1 Soil ID_2
PointID <sup>(1)</sup>	Unique identifier of the LUCAS survey point.	8 digits number
NUTS_0	ISO country code for each member state	2 letters
SampleN	Unique identifier of the soil sample	5 digits number
Spectrum between 400 – 2500 nm	Absorbance data in the vis-NIR regions (400 to 2500 nm) with 0.5 nm resolution	Absorbance

(1) In order to find the correspondence between the LUCAS 2015 spectral data and general LUCAS 2015 campaign data or LUCAS 2015 Topsoil data, you need to use the PointID values.

(2) For some samples there is only one spectrum.

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<sup>1</sup> <http://groups.google.com/group/soil-spectroscopy>

<sup>2</sup> XDSTM Rapid Content Analyzer User Manual, FOSS 2010



**Number of samples for which spectra exist:**

<b>NUTS_0</b>	<b>n</b>
AT	531
BE	145
BG	525
CY	76
CZ	439
DE	1686
DK	222
EE	194
EL	641
ES	4026
FI	1148
FR	3028
HR	114
HU	412
IE	196
IT	1641
LT	352
LU	13
LV	307
MT	3
NL	171
PL	1375
PT	447
RO	1083
SE	1890
SI	147
SK	228
UK	742
Total	21782