

Using the New LSO Calibration sheet – General instructions

The LSO calibration spreadsheet is provided to LSOs to record the zero and span values on the analyser, and certain diagnostics and also provide a record of what actions took place (eg filter changes). We have to refer to these months after the calibration, so it is important all relevant records are entered. The spreadsheet is read automatically by Ricardo’s software; therefore, it’s important the format is preserved. The “NETCEN” tab is where the data is read from, but the LSO enters the information in the other tabs as appropriate; the “NETCEN” tab is write-protected and automatically populated from the other sheets. Do not attempt to unprotect this tab.

The current (as at May 2018) contains no macros, and should work on laptops, ipads and other devices using Microsoft Excel. It may not work with other spreadsheet software. It is read-only to prevent overwriting the master copy. However, it cannot be tested on every combination of device and software.

If you use a laptop with a small screen, some of the boxes will not initially be visible on the screen. Scroll down to see the rest of the cells which need to be completed.

1. Open the file and select the Intro page (if not already selected)
2. Enter all the basic info: Click on the site box, select your site from the drop down menu, enter your name, date and time and select the reason for visit from the drop down menu. Do not overwrite drop-down boxes.
3. Select the Pre Cal page. Confirm that there is no pollution episode occurring before proceeding. For the analysers you have on site, select the analyser types from the drop-down menus. A series of specific diagnostic parameters will then appear – having consulted the relevant sections of the LSO Manual, enter the required values as appropriate. Scroll down for the PM diagnostics tables. If you haven’t got values for any of the parameters (software versions vary) just leave the box blank.
4. Select the Cal page. Turn on any Status Flags or out of service switches (consult the LSO Manual for details) and click on the box next to the “Turn all status flags on:” message. The calibration tables will now appear. If the monitoring station records data through an external datalogger, click the “External Datalogger present?” box, for another set of tables to appear.

Zero (Analyser Front Panel)				Zero (external logger if fitted)				
	1	2	3		1	2	3	
NOx:				(ppb/ppm)				(mV)
NO:				(ppb/ppm)				(mV)
CO:				(ppb/ppm)				(mV)
SO2:				(ppb/ppm)				(mV)
O3:				(ppb/ppm)				(mV)
Cal Cylinder (Analyser Front Panel)				Cal Cylinder (external logger if fitted)				
	1	2	3		1	2	3	
NOx:				(ppb/ppm)				(mV)
NO:				(ppb/ppm)				(mV)
NO2:				(ppb/ppm)				(mV)
CO:				(ppb/ppm)				(mV)
SO2:				(ppb/ppm)				(mV)
O3:				(ppb/ppm)				(mV)
NO2 Cylinder (Analyser Front Panel)				NO2 Cylinder (external logger if fitted)				
	1	2	3		1	2	3	
NOx:				(ppb/ppm)				(mV)
NO:				(ppb/ppm)				(mV)
NO2:				(ppb/ppm)				(mV)

Cylinders

5. Perform zero and cylinder calibrations as described in the LSO Manual. Once each calibration point is stable, take three replicate measurements for each pollutant species at about 1 minute apart – this will help to prove that the analyser has stabilised. The zeros for NO_x and NO go in rows 8 and 9 (For NO_x), NO cylinder span in rows 17 and 18 (and NO₂ in row 19).
6. Enter all the cylinder details, cylinder number, pressure and units, not forgetting any zero cylinders that may be present at site. The zero cylinder number is not required.
7. Once the calibration is complete, return the calibration gases to their as-found condition and change the sample inlet filters.
8. Change the PM analyser filters and clean the heads only after instruction from the Management Unit.
9. Enter any comments you have in the boxes provided at the bottom of the Cal page
10. Select the Post Cal page and fill in the appropriate diagnostics.
11. For EA-funded sites, enter the site electricity meter reading on the “Intro” tab
12. Select the Final Page. Complete all the questions, enter the end time and fill in any final comments.
13. Save the spreadsheet with a unique file name “Site Name dd-mm-yy.xls” The file will be saved in the default folder for Excel file saves. To change this folder, in Excel 2007 on, go to “Office Button”, Excel Options, Save and change the default file location. For earlier versions of Excel, go to Tools, Options, General and change the default file location.
14. Press the Save File button and close Excel. Email the file to the contacts on the Intro page.