TSI Link™ Report Creator – A-B Comparison

Workbook Guide (US)

Contents

Overview

The A-B Comparison workbook contains a set of worksheets for **TSI Link™** Report Creator that support comparative analyses. A-B comparisons are useful to compare two events, conditions, or locations. Some examples include:

- Before and after an engineering control is installed
- Upstream and downstream of an air filter
- Indoor versus outdoor
- Summer versus winter
- With a machine in operation versus not in operation
- Sample point versus an established baseline

The templates in this workbook are designed to make comparative analysis between any two studies efficient and insightful. It supports a variety of measurements including sound, particulate matter, and gases. Each worksheet is described below.

If you are new to Report Creator, check out the Report Creator Product Page for more guides and videos including: setting up an account, installing the application, using the study manager, using the layout view, customizing report creator templates, etc. This application guide builds upon and supplements those guides. This guide does not duplicate all of the content on those guides.

A-B Comparison Worksheets

The table below lists the worksheets available in the A-B comparison workbook.

Worksheet Template	Supported Measurements	Supported Instruments	Examples of Needs/Applications
General A-B Report	Select up to 3 measurements in a study from 60+ options.	**OmniTrak™** Solution **DustTrak™** Monitors **Q-Trak™** XP Monitor	✓ How do different areas compare? ✓ Before vs after analyses
PM - Mass Concentration	PM 1.0 PM 2.5 PM 4.0 PM 10	**OmniTrak™** Solution **Q-Trak™** XP Monitor **DustTrak™** Monitors **SidePak™** AM520 Monitor	✓ Remediation Analysis ✓ Proactive IAQ checking of schools, commercial buildings and office buildings with and without people
PM - Number Conc H&S	NC 0.3 – 0.5 um NC 0.5 – 1.0 um NC 1.0 – 2.5 um NC 2.5 – 4.0 um NC 4.0 – 10 um	**OmniTrak™** Solution	✓ Industrial Hygiene analysis ✓ Checking of manufacturing cleanliness ✓ Studies of working environment adjustments

Worksheet Steps

This workbook and its worksheets leverage the common Report Creator Functions – Customizing, Study Manager, Importing Tests, Layout View, etc. – for instructions on those functions see the Report Creator Product Page.

The worksheet templates within this workbook has a similar structure. This section outlines the basic operating steps for all of them. Unique analyses for different worksheets are discussed in Step 5 Analyze Data.

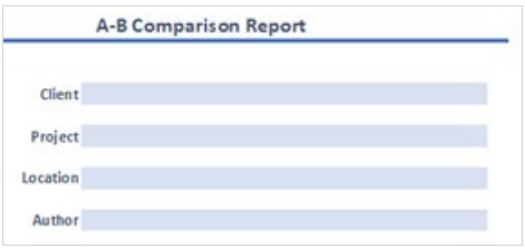
Step 1 Select a Worksheet

The A-B Comparison workbook is one of many that are available. An overview of the workbooks available is on the Report Creator product page.

The overview of worksheets in the prior section provides guidance on the A-B Comparison Worksheets.

Step 2 Cover Sheet

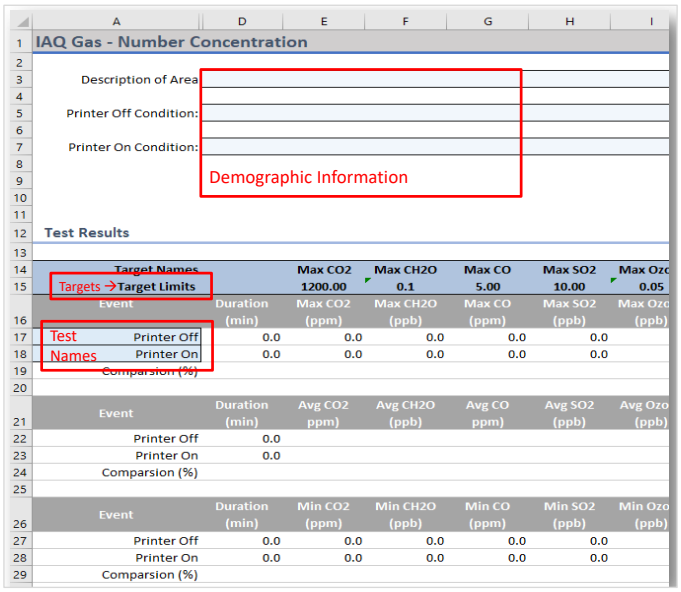
This workbook contains a very simple Cover sheet that can be customized to suit your needs. See the *Customizing Report Creator Templates* to learn how. Other sheets can be added to your workbook, if desired.



The bottom of the Cover sheet includes information for the **General A-B Report**. **If the Cover sheet is deleted from the workbook, the General A-B Report will not function.**

Step 3 Enter Demographic Information and Test Names

After you have created a blank worksheet, you can enter whatever demographic information you want into your report. Start by changing the default *Test 1* and *Test 2* to something more meaningful, if desired. These names are highlighted in blue in the Test Results table. In the example picture, we have changed the names to *Printer Off* and *Printer On*. All the other headers are automatically updated with the new labels.



You can also add or edit target maximum limits for each gas in Row 15. If you do not want to display a target limit, simply leave the cell blank.

NOTICE

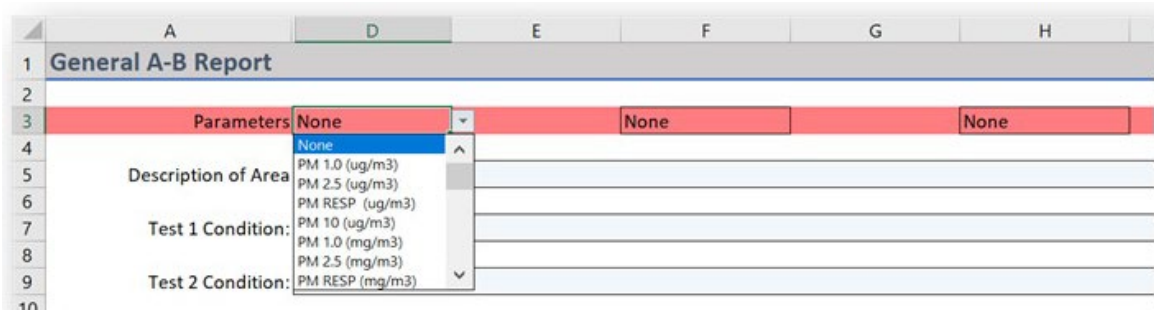
You can also enter target limits into the worksheet templates if you want to make them static and avoid re-entering them. Refer to the *Customizing Report Creator Templates* in the RESOURCES section of the Report Creator Product Page

For General A-B Report, Select Parameters

The TSI® instrument portfolio can generate a wide range of measurements. It would be impractical to create templates for all possible permutations. The *General A-B Report* provides a way for you to define an A-B comparison for any five measurements you like.

After you have created a blank A-B General Report worksheet, you can enter the parameters desired.

You must select between one and five parameters before importing any measurement data. The Parameter row is colored red to remind you of this.



Step 4 Load Study Data

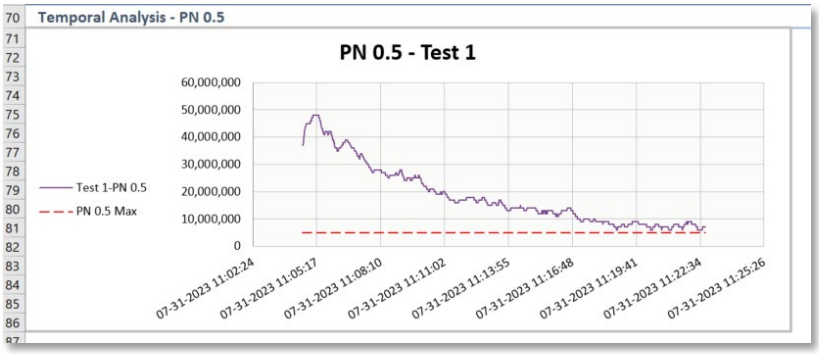
Load up to two studies using *STUDY MANAGER* or *File Import. For background see the* Study Manager Guide.

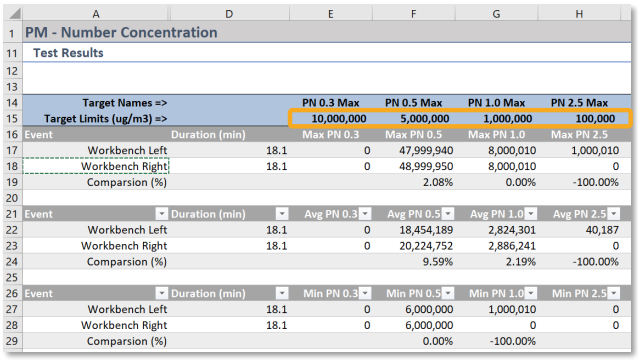
Make sure the study names match the labels you added above. Swap them if necessary. When ready, click **Add Data** to import data into the worksheet.

Step 5 Analyze Data

Target Limits

Target limits for the maximum values, as highlighted above, may be changed. These limits will be displayed on the chart to provide context.





PM - Number Concentration

Test Results

Target Names =>		PN 0.3 Max	PN 0.5 Max	PN 1.0 Max	PN 2.5 Max
Target Limits (ug/m3) =>		10,000,000	5,000,000	1,000,000	100,000
Event	Duration (min)	Max PN 0.3	Max PN 0.5	Max PN 1.0	Max PN 2.5
Workbench Left	18.1	0	47,999,940	8,000,010	1,000,010
Workbench Right	18.1	0	48,999,950	8,000,010	0
Comparsion (%)			2.08%	0.00%	-100.00%
Event	Duration (min)	Avg PN 0.3	Avg PN 0.5	Avg PN 1.0	Avg PN 2.5
Workbench Left	18.1	0	18,454,189	2,824,301	40,187
Workbench Right	18.1	0	20,224,752	2,886,241	0
Comparsion (%)			9.59%	2.19%	-100.00%
Event	Duration (min)	Min PN 0.3	Min PN 0.5	Min PN 1.0	Min PN 2.5
Workbench Left	18.1	0	6,000,000	1,000,010	0
Workbench Right	18.1	0	6,000,000	0	0
Comparsion (%)			0.00%	-100.00%	

Each measure and the target limit are displayed in a chart, along with the target limits defined in the data summary table.

Test Results

The Test Results section includes one or more tables to display maximum, average, and minimum values for each measurement. If you have added a target limit, the summary measurement will turn red if the target was exceeded.

The percentage comparison is also calculated for each measurement.

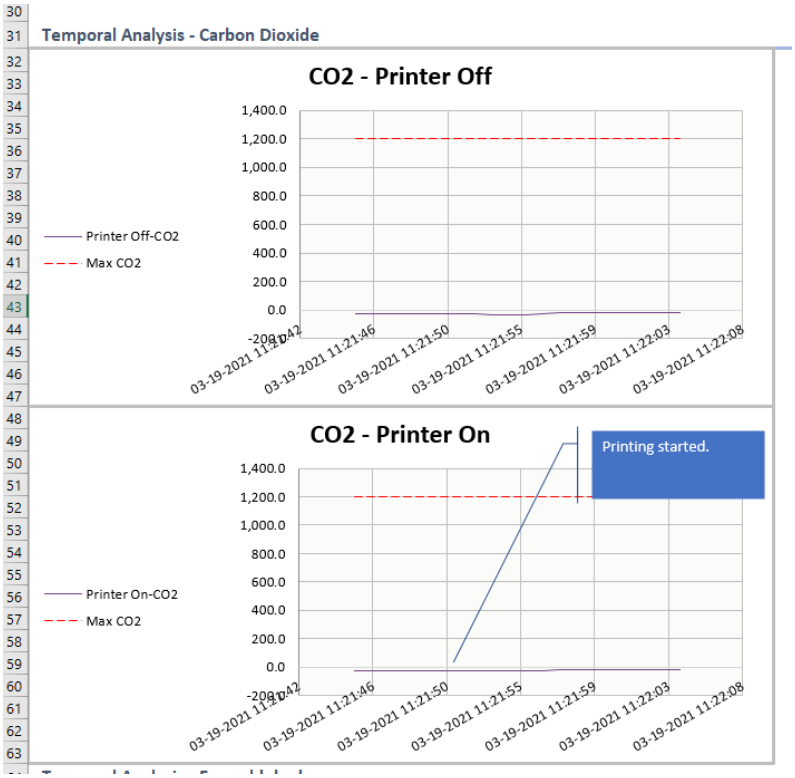
Test Results

Target Names		Max CO2	Max CH2O	Max CO	Max SO2	Max Ozone	Max NO2	Max CL	Max NH3	Max VOC Low	Max VOC High
Target Limits		1200.00	0.1	5.00	10.00	0.05	20.00	0.1	5.00	1000.00	100.00
Event	Duration (min)	Max CO2 (ppm)	Max CH2O (ppb)	Max CO (ppm)	Max SO2 (ppb)	Max Ozone (ppb)	Max NO2 (ppb)	Max CL (ppm)	Max NH3 (ppm)	Max VOC (ppb)	Max VOC ppm)
Printer Off	0.3	-15.0	0.0	144.2	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Printer On	0.3	-15.0	0.0	144.2	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Comparsion (%)		0.0		0.0					0.0		

Event	Duration (min)	Avg CO2 ppm)	Avg CH2O (ppb)	Avg CO ppm)	Avg SO2 (ppb)	Avg Ozone (ppb)	Avg NO2 (ppb)	Avg CL (ppm)	Avg NH3 (ppm)	Avg VOC Low (ppb)	Avg VOC High (ppm)
Printer Off	0.3	-23.9	0.0	129.4	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Printer On	0.3	-23.9	0.0	129.4	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Comparsion (%)		0.0		0.0					0.0		

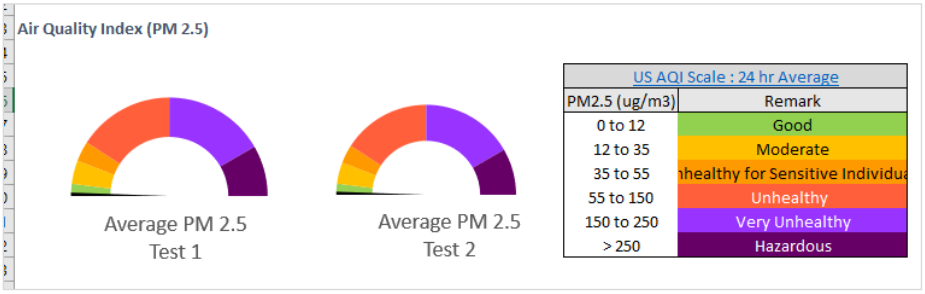
Event	Duration (min)	Min CO2 (ppm)	Min CH2O (ppb)	Min CO (ppm)	Min SO2 (ppb)	Min Ozone (ppb)	Min NO2 (ppb)	Min CL (ppm)	Min NH3 (ppm)	Min VOC Low (ppb)	Min VOC High (ppm)
Printer Off	0.3	-30.0	0.0	117.3	0.0	0.0	0.0	0.0	2.3	0.0	0.0
Printer On	0.3	-30.0	0.0	117.3	0.0	0.0	0.0	0.0	2.3	0.0	0.0
Comparsion (%)		0.0		0.0					0.0		

Time charts are also displayed for each gas, along with the target limits. You can use Excel's drawing tools to highlight or annotate the charts if desired. See *Getting Started with TSI Link Report Creator for more information on annotation.*



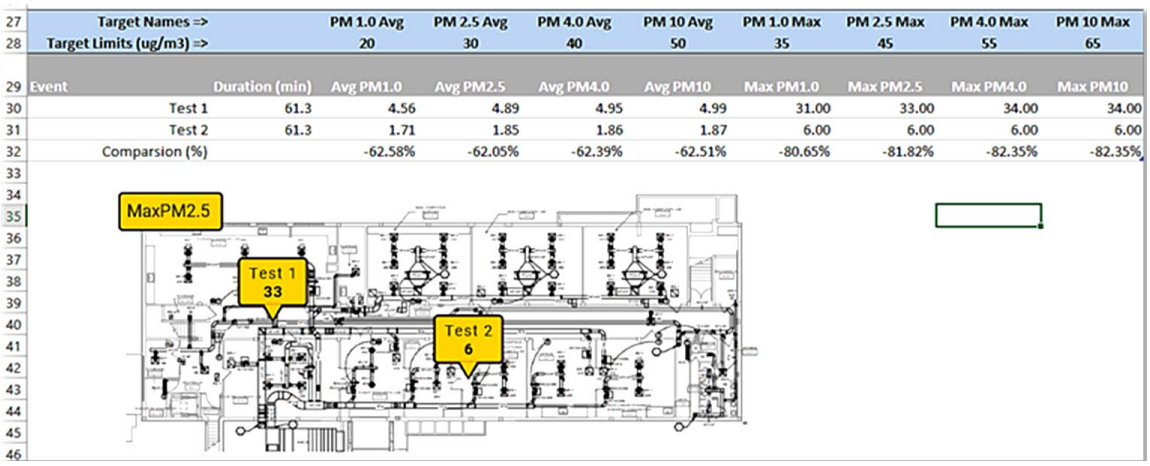
PM – Mass Concentration

The PM – Mass Concentration worksheet includes a speedometer chart visualization to help readers better contextualize the numbers. This is based on the US Air Quality Index scale. This visualization can be removed from your template if it is not useful.



Layout View Analysis

The Layout View provides the ability to compare both studies spatially. In the example below, the Maximum PM2.5 measurements are displayed on a building floorplan. A photo, diagram, map, or any image can be used as the background.



The Layout View is supported in all A-B Comparison worksheets except the *General A-B Report*. But keep in mind that there are only two locations available in these worksheets. If you would like to analyze more locations, consider using the *Spatial Analysis* workbook instead.

Step 6 Complete the Assessment

To complete the report, you can add recommendations under the Conclusions section.

The print layout for this sheet does not include the measurement data in the blue tables at the bottom of the sheet. They will not appear in a PDF export either.

Appendix A – Available Parameters

Below is a list of the 30 parameters available for the General AB Report worksheet.

Metric	Units
PM 1.0 (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM 2.5 (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM RESP (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM 10 (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM Total (ug/m^3)	MICROGRAMS_PER_CUBIC_METER
PM 1.0 (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
PM 2.5 (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
PM RESP (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
PM 10 (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
PM Total (mg/m^3)	MILLIGRAMS_PER_CUBIC_METER
NC 0.3 - 0.5 (#/m^3)	COUNT_PER_CUBIC_METER
NC 0.5 - 1.0 (#/m^3)	COUNT_PER_CUBIC_METER
NC 1.0 - 2.5 (#/m^3)	COUNT_PER_CUBIC_METER
NC 2.5 - 4.0 (#/m^3)	COUNT_PER_CUBIC_METER
NC 4.0 - 10 (#/m^3)	COUNT_PER_CUBIC_METER
NC 0.3 - 0.5 (#/ft^3)	COUNT_PER_CUBIC_FOOT
NC 0.5 - 1.0 (#/ft^3)	COUNT_PER_CUBIC_FOOT
NC 1.0 - 2.5 (#/ft^3)	COUNT_PER_CUBIC_FOOT
NC 2.5 - 4.0 (#/ft^3)	COUNT_PER_CUBIC_FOOT
NC 4.0 - 10 (#/ft^3)	COUNT_PER_CUBIC_FOOT
CO_2 (ppm)	PARTS_PER_MILLION
Formaldehyde (ppb)	PARTS_PER_BILLION
CO (ppm)	PARTS_PER_MILLION
SO_2 (ppb)	PARTS_PER_BILLION
Ozone (ppb)	PARTS_PER_BILLION
NO_2 (ppb)	PARTS_PER_BILLION
CL (ppm)	PARTS_PER_MILLION
NH^3 (ppm)	PARTS_PER_MILLION
VOC (ppm)	PARTS_PER_MILLION
VOC (ppb)	PARTS_PER_BILLION

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