

# Weibull Toolbox™

**Weibull Toolbox™** consists of Life Data Analysis (LDA), Recurring Data Analysis (RDA) and Accelerated Life Test Analysis (ALTA) modules.

LDA and ALTA are used for analyzing the failure rate behavior of non-repairable items. While RDA is used for analyzing the failure rate behavior of repairable items.

## Applications

- Quantify the reliability performance at actionable item level.
- Justify improvement program with statistical evidence.
- Optimize maintenance resources.
- Compare suppliers or designs based on statistical evidence.
- Verify failure trends of maintainable items/equipment.
- Perform Accelerated Life Test Analysis

## ***AssetStudio***

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Free resources:  
<https://assetstudio.net/Resources.html>

Led by industry veterans with "been there, done that" experience, peace of mind is assured:

- More than 40 years of combined consulting experiences
- Hands-on project experiences gained from past projects
- Sound competency in reliability engineering
- Highly competent in process & manufacturing industries

# Life Data Analysis

## Data Type

- Complete, Right Censored, Left Censored and Interval.
- Probability vs Time format

## Distributions

- Weibull, Normal, Lognormal and Exponential.

## Analysis Types

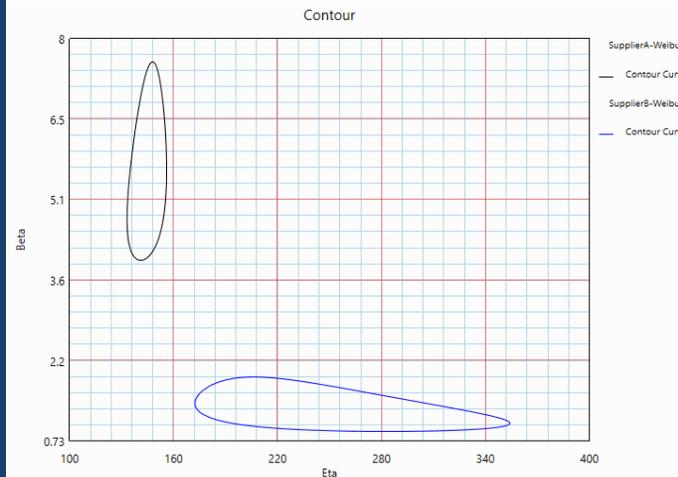
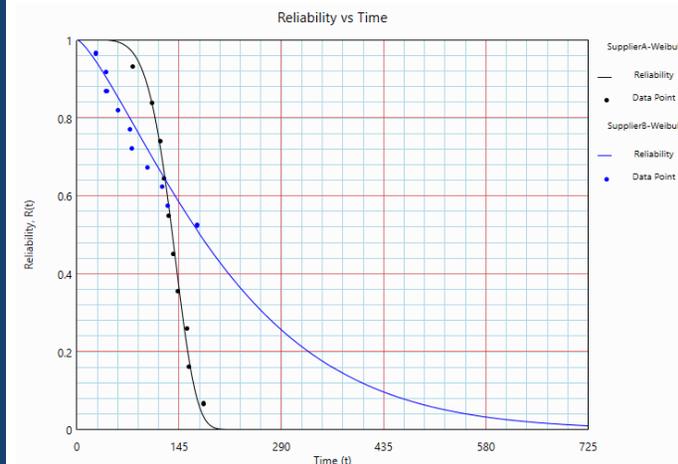
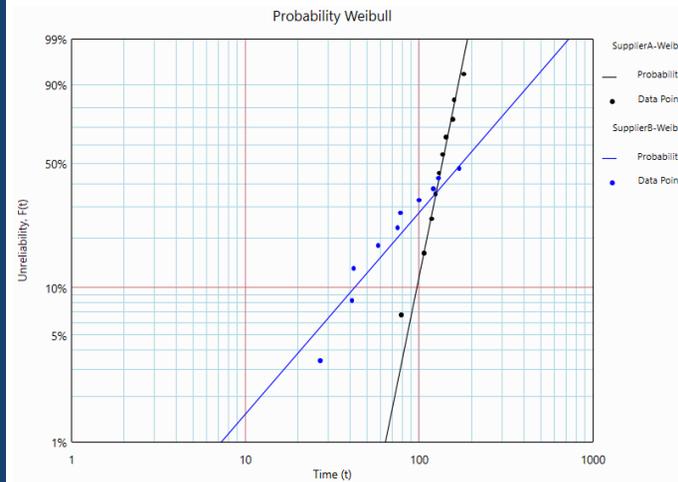
- Rank Regression (RRX, RRY)
- Maximum Likelihood (MLE)

## Confidence Bounds Methods

- Fisher Matrix
- Likelihood Ratio

## Plot Types

- Probability
- Reliability vs. Time
- Unreliability vs. Time
- Failure Rate vs. Time
- PDF
- Contour Plot

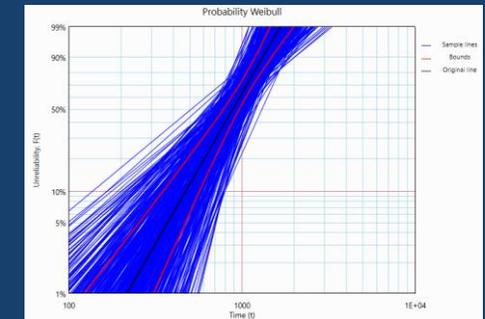


# Features

## Intuitive and compact user-interface

## Supporting tool

- **Calculator** allows you to query commonly requested reliability results based on your analysis together with required inputs.
- **Overlay plot** for comparing plots.
- **Random number generator.**
- **Simulation** to visualize the biasing effect of sample sizes and censoring schemes on analysis methods (MLE and Regression)



- Reliability Test for designing reliability test scheme.

# Recurrent Data Analysis

Power Law or Crow-AMSAA (NHPP) models for repairable system analysis.

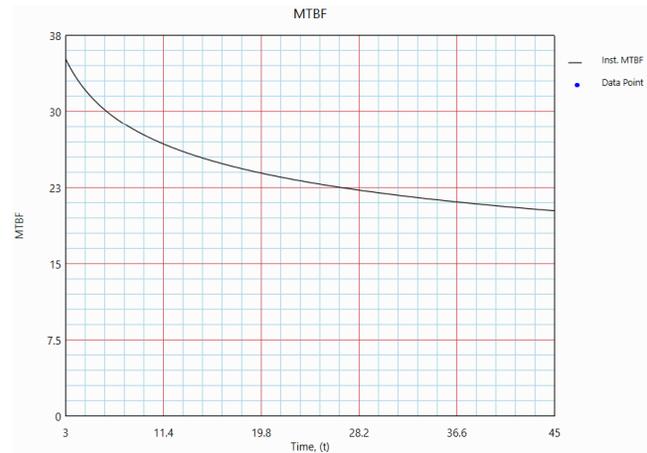
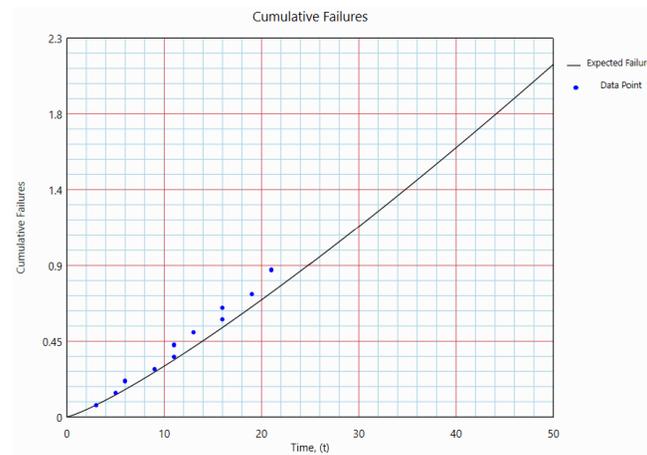
Support Single System, Multiple Systems and Group Interval Data.

## Confidence Bounds Methods

- Fisher Matrix

## Plot Types

- Cumulative Failure
- Instantaneous MTBF
- Instantaneous Failure Intensity
- System Events



# Features

## Intuitive and compact user-interface

**Calculator** allows you to query commonly requested reliability results based on your analysis together with required inputs.

- Reliability
- Cumulative Number of Failures
- Instantaneous MTBF
- Instantaneous Failure Intensity
- Optimum Overhaul Interval

## Data entry format

- System View
- Worksheet View

# Accelerated Life Test Analysis

## Data Type

- Complete, Right Censored, Left Censored and Interval.

## Distributions

- Weibull, Lognormal.

## Analysis Types

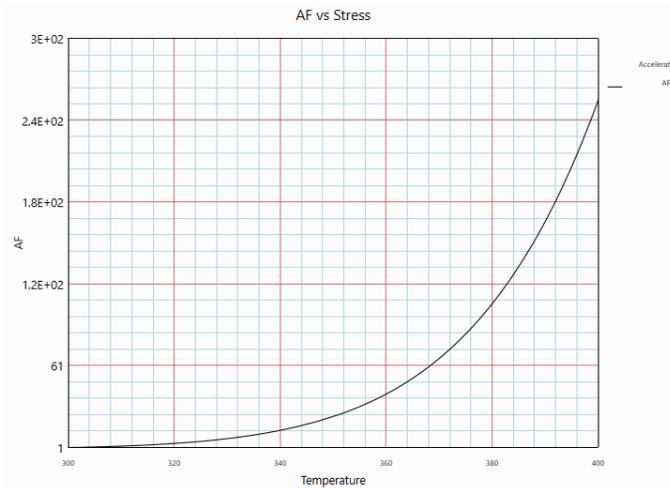
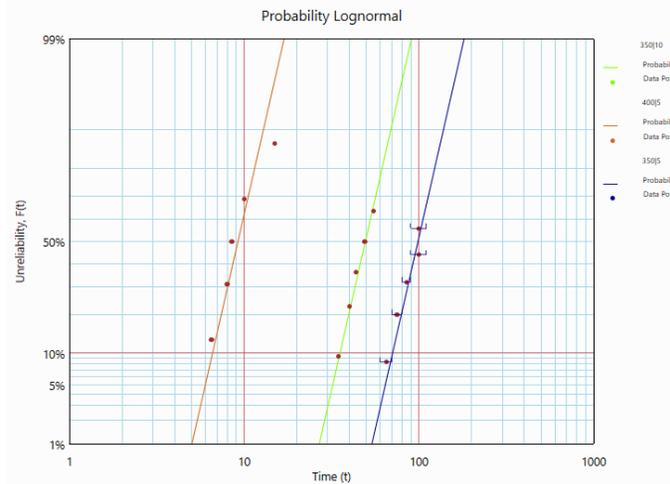
- Maximum Likelihood (MLE)

## Confidence Bounds Methods

- Fisher Matrix

## Plot Types

- Probability
- Reliability vs. Time
- Unreliability vs. Time
- Failure Rate vs. Time
- PDF
- Acceleration Factor vs. Stress
- Life vs. Stress



# Features

## Intuitive and compact user-interface

**Calculator** allows you to query commonly requested reliability results based on your analysis together with required inputs.

**Overlay plot** for comparing plots.

## Life Stress Model

- Arrhenius
- Inverse Power Low (IPL)
- Exponential

**Allow up to three simultaneous constant stresses**

Stress Model	Model	Value
<input checked="" type="checkbox"/> Temperature	Arrhenius	300
<input checked="" type="checkbox"/> Voltage	IPL	5
<input type="checkbox"/> Stress3	EXP	100