

Chart Styles and Types

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About this Guide

This guide provides detailed information about the charts styles and types included in the ChartIQ library.

Audience

The *Chart Styles and Types* guide is intended for chart users, such as chartists and technical and data analysts. For information about the ChartIQ chart user interface, see the *ChartIQ User Guide*. For information about software application development, see the [charting library documentation](https://documentation.chartiq.com/).

Contents

[Chart Styles and Types 5](#_Toc129076652)

[Chart Styles 8](#_Toc129076653)

[Line 8](#_Toc129076654)

[Colored line 9](#_Toc129076655)

[Bar 10](#_Toc129076656)

[Colored bar 11](#_Toc129076657)

[Candle 12](#_Toc129076658)

[Hollow candle 13](#_Toc129076659)

[Volume candle 14](#_Toc129076660)

[Mountain 15](#_Toc129076661)

[Baseline delta 16](#_Toc129076662)

[Time series scatter 17](#_Toc129076663)

[HLC box chart 18](#_Toc129076664)

[Vertex line 19](#_Toc129076665)

[Colored HLC bars 20](#_Toc129076666)

[Histogram 21](#_Toc129076667)

[Step 22](#_Toc129076668)

[Chart Types 23](#_Toc129076669)

[Customizing chart types 23](#_Toc129076670)

[Heikin-Ashi 24](#_Toc129076671)

[Kagi 25](#_Toc129076672)

[Line break 26](#_Toc129076673)

[Point and figure 27](#_Toc129076674)

[Range bars 28](#_Toc129076675)

[Renko 29](#_Toc129076676)

[Additional Charts 30](#_Toc129076677)

[Term Structure 30](#_Toc129076678)

[Data Forecasting 31](#_Toc129076679)

# Chart Styles and Types

The charting library supports a variety of chart styles and types.

Chart styles are the various ways that a chart can visually represent data; for example, as a candle, line, or mountain graph.

Chart types are charts that display data that has been modified through aggregation or recalculation; for example, Heikin-Ashi, Kagi, and point and figure charts.

In some cases, a chart type includes a chart style. For instance, a point and figure chart aggregates data while requiring a specific display style.

You can switch between chart styles and types without disturbing the chart state. For example, drawings and studies are maintained as you change from chart to chart, enabling you to alter your view but keep your work. The charts automatically adjust the scale and positioning of drawings and study lines as appropriate for the chart type.

Chart, histogram

Description automatically generated

**Figure**. Candle chart with Alligator study and circle.

Chart, histogram

Description automatically generated

**Figure**. Baseline chart with Alligator study and circle.

Chart, histogram

Description automatically generated

**Figure**. Line break chart with Alligator study and circle.

Chart, histogram

Description automatically generated

**Figure.** Kagi chart with Alligator study and circle (on far right).

Chart, histogram

Description automatically generated

**Figure**. Point and figure chart with Alligator study and circle (on far right).

# Chart Styles

Line

A line chart consists of segments that connect at the close price for each time period. The line is a single color. Any value in your data that has a null value for close will result in a gap within the line.

Chart, line chart, histogram

Description automatically generated

Colored line

Like the line chart, the colored line is a line chart with segments of various colors. Each color indicates a price action. If the close for a period is higher than that of the previous close, the line between the periods is shaded green. If the close is lower than the previous close, the line between the periods is shaded red. If the close was equal to the previous close, the line between the periods is shaded gray. (The image below uses a step line drawing style.)

Graphical user interface, chart

Description automatically generated

Bar

Bar charts consist of vertical lines sandwiched between two shelves. One bar is created for each interval (period) on the chart. Each bar represents the OHLC (open, high, low, close) for the period. The top and bottom of the vertical line represent the high and low for the period. The left shelf is the opening price while the right shelf is the closing price. The bars are a single color.

Graphical user interface, chart

Description automatically generated

Colored bar

A colored bar chart draws a bar chart with the bars colored to indicate price action. The algorithm is the same as colored line (see below).

Chart

Description automatically generated

Candle

Like bar charts, candle charts represent OHLC, except in the form of colored rectangles called candles. When the open is lower than the close, the candle is shaded green. When the open is higher than the close, the candle is shaded red. If the open and close are the same, a thin horizontal line segment is drawn at that price (this type of candle is called a “doji”). Each candle has a “wick” that extends above and below the candle to indicate the high and low, respectively.

Chart

Description automatically generated

Hollow candle

Hollow candle charts are a special type of candle chart that displays additional information and changes the meaning of the colors. In a hollow candle chart, a green candle occurs when the closing price is higher than the prior bar’s closing price. It is red when the closing price is lower than the prior bar’s closing price.

The candles are either filled or hollow based on the price action within the candle. Hollow candles are drawn when the close is higher than the open (upward intra-session price action). The candle is filled when the close is lower than the open (downward intra-session price action). If the close is the same as the open, only a gray horizontal line is drawn.

Chart

Description automatically generated

Volume candle

A volume candle chart is a hollow candle chart where the width of a candle varies to indicate volume. Each candle’s shading and fill follow the same conventions as those in hollow candle charts. Wide candles indicate high volume while narrow candles indicate low volume.

Chart

Description automatically generated

Mountain

Mountain charts (sometimes called area charts) are line charts with a shaded section that extends to the bottom of the chart. The result is a chart which looks like a mountain.

Chart, line chart

Description automatically generated

Baseline delta

A baseline delta chart draws a line chart that oscillates across a dotted baseline. The area above the baseline is shaded green, and the area below the baseline is shaded red. The baseline initializes to the left most closing value on the chart but can be adjusted by dragging the handle located on the right side of the chart. This chart style is meant to highlight the positive and negative distance from the set baseline. It is typically used for intraday charts where the left side (baseline) is set to the opening of the market day.

Chart, histogram

Description automatically generated

Time series scatter

The time series scatter chart draws a single dot at every closing value for each time period and does not connect them.

Chart, line chart

Description automatically generated

HLC box chart

HLC box charts appear as a colored box with a line showing the close. The high price is the top of the box and the low is the bottom of the box. The intent of the HLC box design is to emphasize where the close is relative to high-low range. ChartIQ offers the ability to use different colors between the high-close and the close-low.

Graphical user interface, chart

Description automatically generated

Chart, histogram

Description automatically generated

Vertex line

A line chart consists of segments that connect at the close price for each time period. A vertex point is drawn at every data point along the line. The line is a single color. Any value in your data that has a null value for close will result in a gap within the line.

Chart, line chart

Description automatically generated

Colored HLC bars

A colored HLC bar chart draws a colored bar chart that only displays the high, low, and close of each bar. A green bar occurs when the closing price is higher than the prior bar’s closing price. It is red when the closing price is lower than the prior bar’s closing price. If the close was equal to the previous close, the line between the periods is shaded gray.

Chart

Description automatically generated

Histogram

A histogram chart consists of a series of colored vertical columns that extend upward to indicate the price at each time period. When the open is lower than the close, the column is shaded green. When the open is higher than the close, the column is shaded red.

Chart, bar chart, histogram

Description automatically generated

Step

A step chart consists of data points that connect at the close price for each time period. Instead of using a line that connects points using the shortest distance, step charts use a combination of horizontal and vertical lines to make right-angled steps to connect data points. The line is a single color. Any value in your data that has a null value for close will result in a gap within the line.

Chart

Description automatically generated

# Chart Types

Chart types offer alternative ways of viewing open-high-low-close (OHLC) data. Each chart type either aggregates data or applies a formula that transforms the data. Some charts are time independent, meaning that a single bar may encompass multiple bars of price movement, resulting in an x-axis that is not linear.

Customizing chart types

Most chart types can be customized. To customize a chart type:

1. Open the **Display** menu.
2. Select the gear icon next to the chart type.
3. Enter values in the dialog box that appears. For example, for Kagi charts:

Graphical user interface, application

Description automatically generated

Select the **AUTO SELECT** button to let the chart determine the setting.

Heikin-Ashi

Heikin-Ashi charts are time series charts that resemble candle charts. In a normal candle chart, each candle is calculated independent of the other candles. However, in Heikin-Ashi charts, the candles appear to link together because of how their OHLC values are calculated:

Open = the mean of the previous open and the previous close

High = the maximum of the current high, open, and close

Low = the minimum of the current low, open, and close

Close = the mean of the current open, close, high, and low

Upward trends are indicated by green candles with wicks on top, but almost no wick on bottom. Downward trends are indicated by red candles with wicks on the bottom and almost no wick on top. Reversal points are indicated by candles, red or green, with small bodies and wicks on top and bottom. This chart type can spot trends more clearly and easily than regular candle charts.

Chart

Description automatically generated

Kagi

Kagi charts appear as vertical bars connected by small horizontal segments at right angles. Kagi charts are independent of time; they progress forward based on price action. Thick green lines, called yang bars, indicate that a price has broken out above the previous yin’s high price. Thin red bars, called yin bars, indicate that the price has fallen below the previous yang’s low. Unlike the other chart types, the colors of kagi lines do not directly communicate upward or downward trends.

Bars move upward or downward depending on closing prices. A bar will shift direction when a reversal limit is reached. Reversal limits are input by the user as a fixed percentage of the price. For example, imagine you have a stock valued at $10 and you are drawing a kagi chart with a reversal of 10%. Depending on what trend was established, a cumulative $1 movement in the opposite direction will break the current trend and cause a reversal.

Kagi charts can be customized (see [Customizing chart types](#_heading=h.1ci93xb)). Pressing the **AUTO SELECT** button of the customization dialog box sets the reversal limit to one of two defaults: if the chart is daily, a reversal of 4% is set; if the chart is intraday, a reversal of 0.4%.

A picture containing graphical user interface

Description automatically generated

Line break

Line break charts appear as vertical bars that ascend and descend. These charts are time independent and are determined only by price action. Ascending bars are colored green and indicate upward price action. Descending bars are colored red and indicate downward price action.

Line break charts are constructed by looking at the close of a bar and comparing it to a previous bar’s close; which bar it is compared to is determined by the user (see below). If the current bar’s close is higher than the one it is being compared to, a green ascending bar is drawn. If the current bar’s close is lower than the one that it is being compared to, a red descending bar is drawn. If the current close is the same, or if the price does not move enough in one direction or the other to signify a reversal, then no bar is drawn.

Line break charts default to a value of three, meaning that it compares the current bar’s close to the bar that came two periods earlier.

Chart, line chart

Description automatically generated

Point and figure

Point and figure charts display an X for upward price action and an O for downward price movement. The X and O represent a specific price increment, known as the box size which is configured in properties by the user. The objective is to capture directional price trends without the impact of time. A new column is formed when price reverses a set number of boxes, that is a multiple of the box size. The reversal value is configured in properties by the user.

Chart

Description automatically generated

Range bars

Range bar charts appear as a series of equally sized candles. A new bar is formed when the price moves outside of the user defined range, which is configured in **Set Range.**

Chart, histogram

Description automatically generated

Renko

Renko charts appear as a series of equally sized blocks stepping diagonally upward or downward. This chart type, developed by the Japanese, measures price movement independent of time. The objective is to clearly see the market’s directional movement, persistence, and magnitude. Renko charts are constructed from a series of bricks placed sequentially upward using green blocks or downward based on user-defined fluctuations in price. The user can set the **Brick Size** using the **Set Range** property. Once price moves more than the user-defined range, a new brick is added to the chart in the corresponding direction.

Chart

Description automatically generated

# Additional Charts

Term Structure

Term structures are graphs of financial instrument values ordered by date of delivery. The Yield Curve chart, a type of term structure, compares U.S. Treasury yields at various maturity dates. The curve scales to show the relative time interval of maturity dates. Background shading highlights short-, mid-, and long-term instruments.

A computer screen capture

Description automatically generated with medium confidence

Data Forecasting

Data forecasting enables the visualization of predicted outcomes by connecting historical and forecast data sets. Forecasts are graphed in a variety of distinctive line styles and colors, clearly distinguishing the forecast portion of a series or study from the historical data. A forecast can include a range of outcomes which may be displayed as a projection cone. Forecasts can be appended to any date up to the present to show the accuracy of past forecasts.

Chart, histogram

Description automatically generated