Kaiko

MIGRATION GUIDE

Realized Volatility Cones

Amberdata → Kaiko

2026

www.kaiko.com

1 At a glance

What this endpoint gives you: for each realized-volatility window (1, 7, 14, 30, 90 and 180 days), this endpoint returns the **current** value together with its distribution (**minimum, 25th percentile, median, 75th percentile and maximum**) over a date range of your choice, for one spot pair on one exchange. This is the data behind the classic "volatility cone" chart.

What changes for you

- You will call a new endpoint, `/analytics/volatility/cones`, using your Kaiko API key in the `X-Api-Key` header (§2).
- The pair is now expressed with two lowercase parameters: `pair=btc_usd` becomes `base_asset=btc` and `quote_asset=usd`. Exchange codes also change, for example `gdax` becomes `cbse` (§3, §6).
- Dates are now expressed as full timestamps: `startDate` and `endDate` become `start_time` and `end_time`, for example `2026-07-01T00:00:00Z`. The window itself stays the same: `[start, end)`.
- Values are now returned as decimals, for example `0.3475` where Amberdata returned `34.75` (percent). To keep Amberdata's scale, simply multiply by 100.
- Field names have been updated, for example `current_30days` becomes `realized_volatility_30d` and `p25_30days` becomes `realized_volatility_30d_p25` (§5).
- The methodology and the default range remain the same: a request without dates covers the last 7,320 days (20 years). See §3 and §7.

Coverage & distribution

Data type: A realized-volatility distribution per window, returned as one row per request

Estimator: Parkinson (daily high and low), annualised by √365

Source: Spot exchange daily OHLC · one exchange and one pair per request

Exchanges: 26 spot exchanges, including the Amberdata venues listed in §6

History: From 2016-01-01 (later for pairs with a shorter trading history), with daily observations stamped 00:00 UTC

Maximum range: 7,320 days (20 years) per request

Distribution: REST API

2 Endpoint & authentication

	Amberdata (today)	Kaiko (new)
Method	GET	GET
Base URL	`https://api.amberdata.com`	`https://api.kaiko.io`
Path	`/markets/derivatives/analytics/realized-volatility/cones`	`/analytics/volatility/cones`
Auth	API key header `x-api-key`	API key header `X-Api-Key` (your Kaiko key)

Header names are not case-sensitive, so `x-api-key` and `X-Api-Key` refer to the same header: only the key itself changes. **Versioning:** Amberdata reported its version in `payload.metadata.api-version` (`2023-09-30`). Kaiko accepts an optional `api_version` query parameter (the default and current version is `2026-10-01`) and returns it in `meta.api_version` .

3 Request parameters

Amberdata param	Kaiko param	Change	Notes
`exchange` (required)	`exchange` (required)	RENAMED	The name is unchanged, but the values are now Kaiko codes (§6), for example `gdax` → `cbse` . Codes must be lowercase: `CBSE` returns a 400 error (Amberdata accepted any case).
`pair` (required)	`base_asset` + `quote_asset` (both required)	RENAMED	`btc_usd` becomes `base_asset=btc` and `quote_asset=usd` . Both must be lowercase: `BTC` returns a 400 error.
`startDate` (optional)	`start_time` (optional)	RENAMED	**Inclusive**, as before. Please use an RFC 3339 timestamp with a time zone, for example `2026-07-01T00:00:00Z` (fractional seconds are optional). A date on its own (`2026-07-01`), which Amberdata accepted, returns a 400 error.
`endDate` (optional)	`end_time` (optional)	RENAMED	**Exclusive**, as before: the range covers `[start_time, end_time)` . The same format rule as for `start_time` applies.
`timeFormat` (optional)	None	REMOVED	This parameter had no effect on this endpoint, since the row carries no timestamp. You can simply remove it from your requests.
None	`api_version` (optional)	NEW	Lets you pin the response format. The default is `2026-10-01` .

Defaults and limits

- **No dates:** if you include no dates, the last 7,320 days (20 years) up to now are used for the computation, exactly as on Amberdata.
- **One date only:** if you only provide a start date, the range runs from that date up to now. If you only provide an end date, the 7,320 days (20 years) before it are used. Both cases behave as they did on Amberdata.
- **Checks:** the start date must be before the end date, and the range cannot exceed 7,320 days. Otherwise, both APIs return a 400 error: the range is never shortened automatically.

4 Response envelope & metadata

These are the fields around the data, in other words the wrapper your parser reads before reaching the numbers. This envelope is **identical on every Amberdata endpoint**.

Amberdata field	Kaiko field	Change	Notes
`status`	None	REMOVED	Please use the HTTP status code (200) instead.
`title`	None	REMOVED	There is no equivalent on success.
`description`	None	REMOVED	There is no equivalent on success.

Amberdata field	Kaiko field	Change	Notes
`payload.data`	`data`	RENAMED	Now at the top level. An **array** with one row, or empty.
`payload.metadata`	`meta`	RENAMED	Now at the top level.
`api-version`	`api_version`	RENAMED	`2026-10-01` (Amberdata: `2023-09-30`).
None	`count`	NEW	The number of rows in `data`.
None	`next_url`	NEW	Always `null`, since there is a single row.
None	`url`	NEW	Your request URL, including `api_version`.

On Amberdata, `api-version` sits inside `payload.metadata`. On Kaiko, `api_version`, `count`, `next_url` and `url` all sit inside `meta`.

Errors and empty results

- **Pair not available on the exchange:** Amberdata returned a 400 error. Kaiko returns a **404** error with the code `unknown_instrument` (for example "cbse does not publish doge-chf").
- **Valid pair, but no observation in the range** (for example, a range before the pair's history starts): Amberdata returned a 400 error. Kaiko returns a **200** response with an empty `data` array and `meta.count` = 0.
- **Missing or invalid parameter:** both APIs return a 400 error. Kaiko errors are `application/problem+json` (RFC 9457) bodies that include `status`, `title`, a `detail` message naming the parameter, and the code `invalid_parameter`.

5 Response data fields

Each window returns the same six statistics. Amberdata named them `{stat}_{window}`, while Kaiko names them `realized_volatility_{window}` for the current value and `realized_volatility_{window}_{stat}` for the others. On Kaiko the windows are `1d`, `7d`, `14d`, `30d`, `90d` and `180d` (on Amberdata: `1day`, then `7days` to `180days`). The table below uses the 30-day family as an example.

Amberdata field	Kaiko field	Type	Change	Notes
`current_30days`	`realized_volatility_30d`	number	RENAMED	Last day before `end_time`.
`min_30days`	`realized_volatility_30d_min`	number	RENAMED	Lowest in the range.
`p25_30days`	`realized_volatility_30d_p25`	number	RENAMED	25th percentile.
`p50_30days`	`realized_volatility_30d_p50`	number	RENAMED	Median.
`p75_30days`	`realized_volatility_30d_p75`	number	RENAMED	75th percentile.
`max_30days`	`realized_volatility_30d_max`	number	RENAMED	Highest in the range.
The same six statistics are available for 1, 7, 14, 90 and 180 days, for example `p25_1day` → `realized_volatility_1d_p25` and `current_180days` → `realized_volatility_180d`.				
`exchange`	`exchange`	string	RENAMED	Kaiko code: `cbse`.

Amberdata field	Kaiko field	Type	Change	Notes
`pair`	`base_asset` , `quote_asset`	string	RENAMED	`btc` , `usd` .

Units: values are annualised realized volatility. Amberdata expressed them in percent (`34.75` = 34.75%), while Kaiko uses decimals (`0.3475` = 34.75%). When a window has no observation in the range (a history shorter than the window), Kaiko returns `null` for it.

6 Exchange & venue names

For this endpoint, the venue is a **spot exchange** (not a derivatives venue). Please map the identifier you send and receive as follows:

Amberdata name	Kaiko code	Exchange
gdax	cbse	Coinbase
binance	binc	Binance
kraken	krkn	Kraken
bitstamp	stmp	Bitstamp
gemini	gmni	Gemini
okex	okex	OKX
bithumb	bthb	Bithumb
poloniex	polo	Poloniex
deribit	drbt	Deribit

Kaiko also publishes this endpoint on 17 additional spot exchanges: `arkm` `bnus` `bfnx` `gpsp` `btmt` `btmx` `bvav` `bull` `bbsp` `gate` `huob` `kcon` `lmax` `merc` `mexc` `okcn` `upbt` . Amberdata's codes (for example `gdax`) return a 400 error. Amberdata's `/cones/information` (list of pairs) has no equivalent: if Kaiko does not publish a pair on the exchange, the request returns a 404 error (§4).

7 Will your values change?

Short answer

The calculation and the default range are the same: once divided by 100, the values are directly comparable with Amberdata's. The only exception concerns OKX, Bithumb and Deribit (see Daily bars below).

- **Same methodology:** both use the Parkinson estimator on each day's high and low, annualised by √365. The N-day value uses N consecutive daily bars, the range is `[start, end)` , the current value is the last day before the end of the range, and percentiles are interpolated linearly.
- **Daily bars:** Kaiko cuts every daily bar at 00:00 UTC, on all exchanges. On some venues, Amberdata used the exchange's own trading day instead: 16:00 UTC on OKX, 15:00 UTC on Bithumb and 08:00 UTC on Deribit. On these exchanges the bars cover a different 24-hour window, so the values may differ from Amberdata's.
- **Units:** Amberdata used percent, while Kaiko uses decimals (§5).

- **History:** Kaiko's daily observations start on 2016-01-01, or later for pairs with a shorter trading history. A range that ends before a pair's first observation returns an empty `data` array.
- **Default range:** without dates, the last 7,320 days (20 years) are used, as on Amberdata (§3).
- **Precision:** Amberdata rounded the current, minimum and maximum values to single precision, whereas Kaiko returns full double precision. The difference only appears around the seventh significant digit.

8 Before / after example

Request

Amberdata

```
GET https://api.amberdata.com
    /markets/derivatives/analytics
    /realized-volatility/cones
    ?exchange=gdax
    &pair=btc_usd
    &startDate=2026-07-01
    &endDate=2026-07-30
x-api-key: <your-amberdata-key>
```

Kaiko

```
GET https://api.kaiko.io
    /analytics/volatility/cones
    ?exchange=cbse
    &base_asset=btc
    &quote_asset=usd
    &start_time=2026-07-01T00:00:00.000Z
    &end_time=2026-07-30T00:00:00.000Z
X-Api-Key: <your-kaiko-key>
```

Response (real responses for the same range; values rounded, fields ordered by window)

Amberdata


```
{
  "status": 200,
  "title": "OK",
  "description": "Successful request",
  "payload": {
    "data": [ {
      "current_1day": 26.40,
      "min_1day": 11.74,
      "p25_1day": 21.09,
      "p50_1day": 30.57,
      "p75_1day": 37.63,
      "max_1day": 68.86,
      "current_7days": 28.76,
      "min_7days": 26.35,
      "p25_7days": 28.76,
      "p50_7days": 32.75,
      "p75_7days": 40.08,
      "max_7days": 49.10,
      "current_14days": 27.64,
      "min_14days": 27.25,
      "p25_14days": 30.77,
      "p50_14days": 36.90,
      "p75_14days": 44.82,
      "max_14days": 48.81,
      "current_30days": 34.75,
      "min_30days": 34.72,
      "p25_30days": 40.30,
      "p50_30days": 41.26,
      "p75_30days": 42.36,
      "max_30days": 49.39,
      "current_90days": 38.37,
      "min_90days": 38.34,
      "p25_90days": 38.64,
      "p50_90days": 39.12,
      "p75_90days": 39.91,
      "max_90days": 40.59,
      "current_180days": 49.44,
      "min_180days": 49.44,
      "p25_180days": 49.86,
      "p50_180days": 49.94,
      "p75_180days": 50.06,
      "max_180days": 50.18,
      "exchange": "gdax",
      "pair": "btc_usd"
    } ],
    "metadata": {
      "api-version": "2023-09-30"
    }
  }
}
```


Kaiko


```
{
  "data": [ {
    "exchange": "cbse",
    "base_asset": "btc",
    "quote_asset": "usd",
    "realized_volatility_1d": 0.2640,
    "realized_volatility_1d_min": 0.1174,
    "realized_volatility_1d_p25": 0.2109,
    "realized_volatility_1d_p50": 0.3057,
    "realized_volatility_1d_p75": 0.3763,
    "realized_volatility_1d_max": 0.6886,
    "realized_volatility_7d": 0.2876,
    "realized_volatility_7d_min": 0.2635,
    "realized_volatility_7d_p25": 0.2876,
    "realized_volatility_7d_p50": 0.3275,
    "realized_volatility_7d_p75": 0.4008,
    "realized_volatility_7d_max": 0.4910,
    "realized_volatility_14d": 0.2764,
    "realized_volatility_14d_min": 0.2725,
    "realized_volatility_14d_p25": 0.3077,
    "realized_volatility_14d_p50": 0.3690,
    "realized_volatility_14d_p75": 0.4482,
    "realized_volatility_14d_max": 0.4881,
    "realized_volatility_30d": 0.3475,
    "realized_volatility_30d_min": 0.3472,
    "realized_volatility_30d_p25": 0.4030,
    "realized_volatility_30d_p50": 0.4126,
    "realized_volatility_30d_p75": 0.4236,
    "realized_volatility_30d_max": 0.4939,
    "realized_volatility_90d": 0.3837,
    "realized_volatility_90d_min": 0.3834,
    "realized_volatility_90d_p25": 0.3864,
    "realized_volatility_90d_p50": 0.3912,
    "realized_volatility_90d_p75": 0.3991,
    "realized_volatility_90d_max": 0.4059,
    "realized_volatility_180d": 0.4942,
    "realized_volatility_180d_min": 0.4942,
    "realized_volatility_180d_p25": 0.4985,
    "realized_volatility_180d_p50": 0.4993,
    "realized_volatility_180d_p75": 0.5005,
    "realized_volatility_180d_max": 0.5017
  } ],
  "meta": {
    "api_version": "2026-10-01",
    "count": 1,
    "next_url": null,
    "url": "https://api.kaiko.io/analytics/
volatility/cones?
exchange=cbse&base_asset=btc&quote_asset=usd&start
_time=2026-07-01T00:00:00.000Z&end_time=2026-07-30
T00:00:00.000Z&api_version=2026-10-01"
  }
}
```