BLACKCHART SUITE · USER GUIDE

Wave Engine

A volumetric wave analyst. It draws the waves, measures each one — how far, how long, how much volume — and compares it with the previous wave in the same direction. No signals. The interpretation is yours.

Platform TradingView · Pine v6 | **Analysis** pure volumetric waves | Overlay + pane

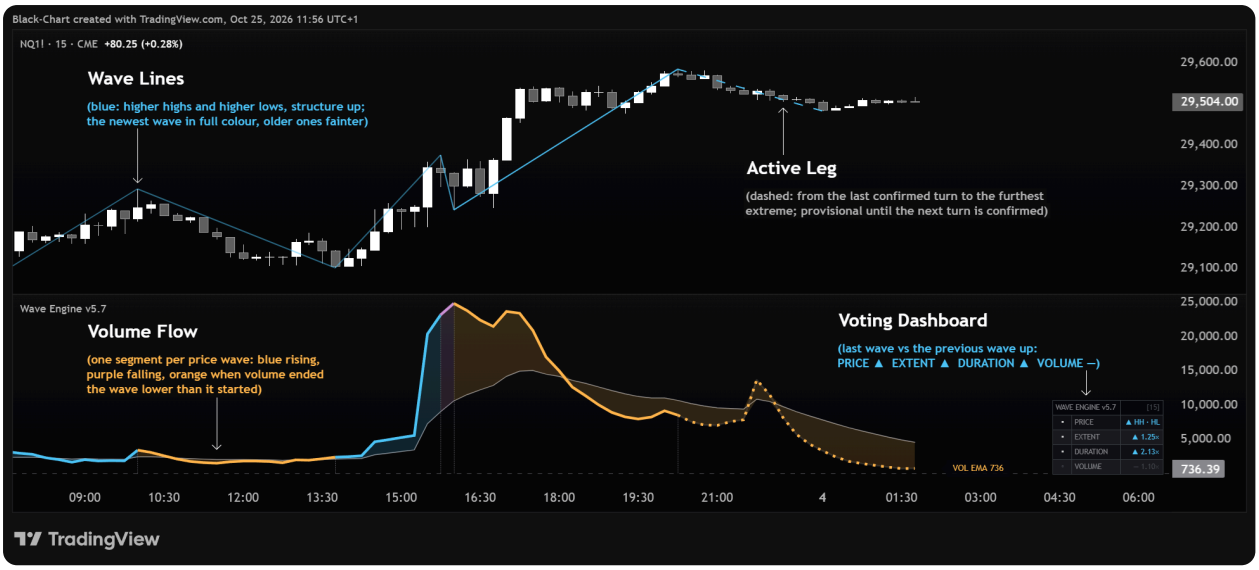
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WHAT IT IS

Measurements, not signals

Most wave tools tell you what a wave "means" — accumulation, exhaustion, a phase. Wave Engine does not. It draws the wave structure and measures each completed wave: **distance** (how far price travelled), **duration** (how many bars it took) and **volume** (how much traded). It then compares that wave with the **previous wave in the same direction** and shows the comparison as plain ratios.

Those are the raw materials a tape reader works from. What they add up to — strength, weakness, a turning point — is a judgement, and the Suite leaves that judgement to you and to the Suite's context engine. Wave Engine's job is to make sure the numbers you judge from are clean.



The full view. Nasdaq 100 futures (NQ1!), 15-minute chart, bar replay stopped at 01:45 on 4 September 2026 (chart time, UTC+2), with the default settings. **Wave Lines**: from 10:00 every wave sets a higher high and a higher low against the previous wave in its direction, so the structure is up (blue); the newest wave is in full colour, older ones fainter. **Active Leg**: the last confirmed wave rose from 29,241.75 at 16:00 to 29,584.25 at 20:15; the dashed line runs from that high to the lowest point reached since, provisional until the next turn is confirmed. **Volume Flow**: the smoothed volume curve in the lower pane, cut at every turning point — blue rising, purple falling, orange when volume ended the wave lower than it started; the short purple segment is the brief fall from 15:45 to 16:00. **Voting Dashboard**: PRICE ▲, EXTENT ▲, DURATION ▲, VOLUME — — the rise to 29,584.25 started and ended above the previous rising wave, travelled 1.25 times as far and lasted 2.13 times as long; its volume per bar was 1.10 times the previous one, close enough to read as neutral.

The rise that enters from the left edge started at the 07:15 low and keeps the up structure already recognised.

SETUP

Three steps

01

Add it — the anchor is already set. Every wave and every volume total is measured inside an **anchored range**. By default (`Reference Period: Week Open`) measurement starts at the **open of the current week**, in the instrument's exchange timezone rather than yours, and restarts on its own every week — there is nothing to set. To read the day, the month, or a point of your own choosing, the dropdown's other three entries do exactly that: `Today`, `Month Open`, `Manual (drag)`.

02 **Pick your Wave Preset.** In **Wave Detection**, the `Wave Preset` menu sets wave sensitivity — **Scalping · Day Trading · Intraday · Swing · Position** (default: Day Trading) — and it works on **any instrument** with no retuning, because it adapts to volatility on its own. Prefer not to think about it? Choose `Auto`: it picks the level from the chart timeframe.

03 **Choose what you want to see.** In the pane, `Pane View` switches between **Volume Flow** (default), **Wave Volume** and **Wave Boxes**. Wave lines on the chart, per-wave labels and the dashboard each toggle independently in **Display** and **Dashboard**.

WAVE PRESET	AUTO PICKS IT ON	WAVES
Scalping	Charts up to 5m	Finest
Day Trading	Up to 15m	Fine
Intraday	Above 15m, up to 1h	Medium
Swing	Up to 1D	Wide
Position	Above 1D	Widest

i **Why does a preset work everywhere?** It sizes the swing by the instrument's **volatility**, not by a fixed percentage: so the same choice yields consistent waves on FX, indices, gold or crypto, with no per-market retuning. The table shows the level `Auto` picks on each timeframe; any level can also be chosen by hand on any chart.

! **Early in a period you may see little — that's normal.** Waves and volumes are measured from the anchor, and with the default `Week Open` the anchor restarts at the **open of the week**: on Monday morning the range still holds very few bars. On **high timeframes** (H4, Daily) Wave Engine may show few waves or none. **Three ways to see more right away: (1) drop to a lower timeframe** (e.g. from Daily/H4 to H1/M15) — the same period holds many more bars, so waves appear instantly; **(2)** pick a wider window with `Month Open`; **(3)** or set the dropdown to `Manual (drag)` and **drag the anchor** further back. ⚠ **Dragging counts ONLY in Manual (drag):** the handle stays visible and draggable under the other entries too — TradingView draws it, not the indicator — but the value is ignored and the anchor does not move.



The default view. Crude oil futures (CL1!), 15-minute chart, live on 25 October 2026 (the last session, Friday 23 October, chart time UTC+2), with the indicator just added and no setting changed: Day Trading preset, Week Open anchor, Volume Flow pane, voting dashboard; the view leaves empty space to the right of the last candle, so the dashboard covers no part of the curve. **Active Leg**: dashed, provisional until the next turn is confirmed. **Volume Flow**: one segment per price wave — blue rising, purple falling, orange when volume ended the wave lower than it started; dotted for the leg still in progress. **Voting Dashboard**: the last confirmed wave is the dip from 103.30 to 102.41 between 18:15 and 18:45. It started and ended above the previous dip, so PRICE reads ▲ HH · HL; it travelled about as far (1.14×, neutral) in half the time (DURATION ▲ 0.50×: a short pullback reads in favour of buyers); it traded 1.46 times the volume per bar, but with the extent only about the same, VOLUME stays neutral.

`VOL EMA` at the right end of the curve is its current value. With the chart scrolled to the last candle, the dashboard in the bottom-right corner can sit over that label: `Dashboard` → `Position` moves it.

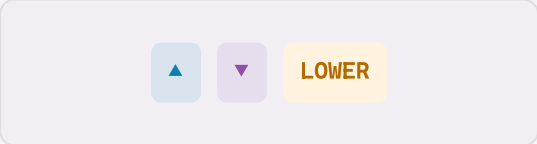
ON THE CHART

What Wave Engine draws



Wave lines & telemetry

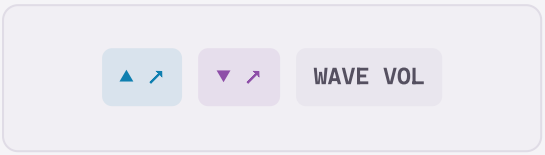
A ZigZag of completed waves, coloured by **structure**: cyan while highs and lows are rising, violet while they are falling, grey until the first structure of the range is recognised — a mixed wave keeps the colour of the last structure. Optional labels give each wave's **volume, bar count and distance**. The active leg — still forming — is dashed, so you never confuse it with confirmed history.



Volume Flow — the default pane view

A smoothed curve of traded volume that restarts at the anchor, with a thin average line and a filled band between the two. The curve is cut into **one segment per price wave**, and each segment is coloured by how volume ended compared with how it started: **cyan** — a rising wave that ends with higher volume; **violet** — a falling wave that ends with higher volume; **amber** — volume lower at the end of the wave, in either direction; **grey** — the same, or no data. The active leg is dotted. A dashed zero line is labelled `0 · VOLUME` and a tag on the right shows the current value (`VOL EMA`). With the dashboard in its default bottom-right position the tag sits under it: move the dashboard (`Dashboard` → `Position`) to read it. A thin dotted vertical mark sits on the bar of every price pivot, where one wave ends and the next begins (`Pivot Marks`, on by default). The peak of the curve can fall before or after the mark: the bar with the most volume is not always the bar of the price high or low — and that gap is part of the reading (see below).

Wave Volume — the volume of each wave as it builds



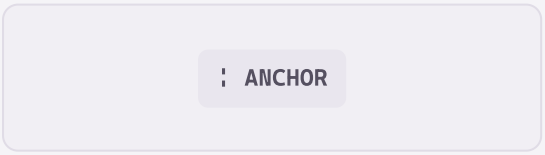
Set `Pane View` to **Wave Volume** and the line shows the **volume of each price wave, added up bar by bar** from the pivot where the wave starts. It restarts at every pivot, so it turns exactly where the price wave turns; at the end of a wave its height is the wave's total volume — the same figure the Wave Boxes view draws as a box. Cyan for up waves, violet for down waves; the active leg is dotted and a tag on the right shows its volume so far (`WAVE VOL`), in the same place as the Volume Flow tag. A longer wave adds up more volume simply because it lasts longer: read it next to `DURATION`.

Wave Boxes — the Weis view

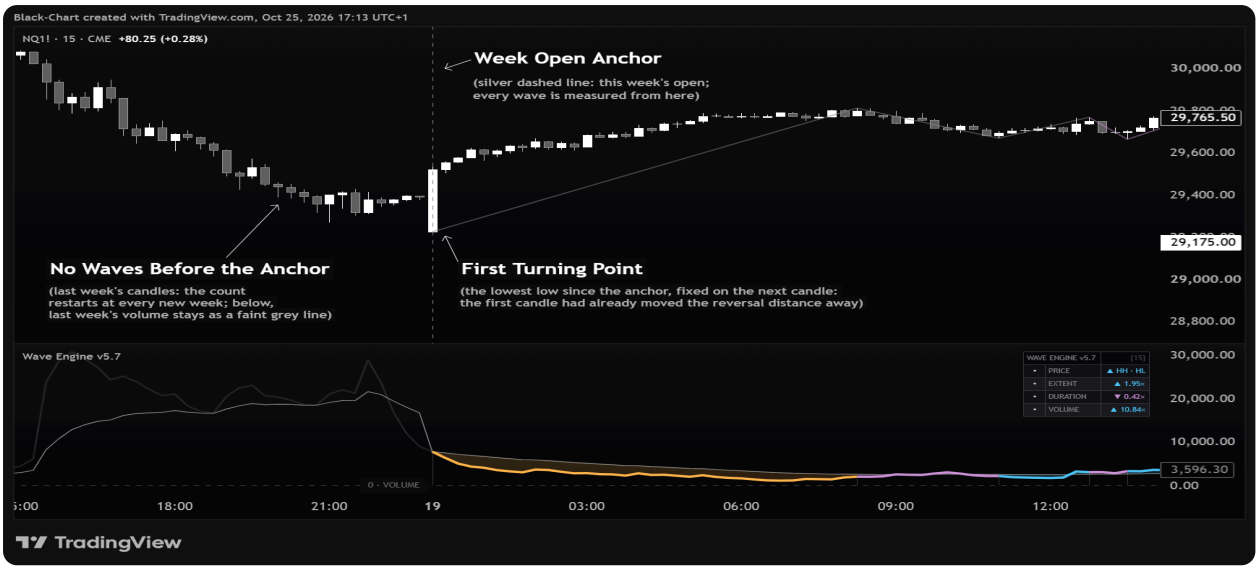


Set `Pane View` to **Wave Boxes** and each wave becomes a box whose **height is its volume** — the classic Weis read: taller box, more volume behind the move. The **colour intensity is efficiency** (Effort vs Result): saturated = a thrust that covered ground cheaply, pale = churning, much volume for little progress. Intensity is relative to the waves currently drawn. Optional volume labels sit on each box.

Anchor line



A **silver dashed vertical line** marks the anchor in use — the point where the whole analysis begins: waves, anchored volume and dashboard. It shows you exactly where Wave Engine is measuring from. It follows the entry chosen in `Reference Period` and moves on its own when a new period starts; under `Manual (drag)` it is the handle you drag. It is always drawn, in every mode.

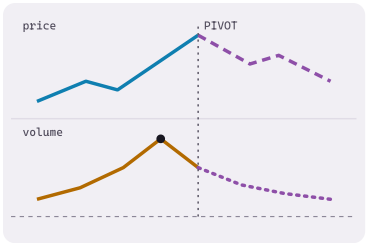


Waves and the anchored range. Nasdaq 100 futures (NQ1!), 15-minute chart, live on 25 October 2026, scrolled back to the change of week from Friday 16 to Monday 19 October (chart time, UTC+2), with the default settings except the dashboard, moved to the top right (`Dashboard` → `Position`) so that it does not cover the end of the volume curve. **Week Open Anchor**: the silver dashed line marks this week's open, 00:00 on 19 October; every wave is measured from here. **No Waves Before the Anchor**: Friday's decline has no wave lines, because the count restarts at every new week; in the pane, last week's volume stays as a faint grey line. **First Turning Point**: the first candle of the week traded down to 29,226 and closed at 29,521.5, so its low became the first turning point on the next candle, without the confirmation wait of later turns; the first wave runs from there to 29,813.5 at 08:15.

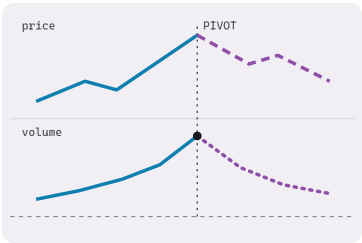
The first waves of the week are grey because no structure has been recognised yet; the short fall from 12:45 to 13:30 is the first to start and end below the previous falling wave, and turns purple. The rise at the right edge stays purple too: it goes above the previous high but starts below the previous rise's start, a mixed wave. The dashboard and the filled white price label (29,175) belong to the live chart (Friday 23 October), not to the waves in this window.

Why the volume peak and the pivot rarely sit on the same bar

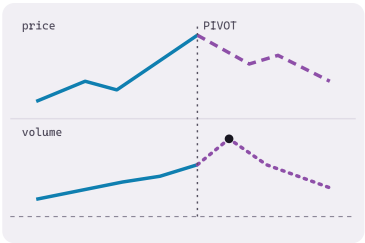
The Volume Flow curve is **volume**; the pivot is **price**. Price turns on the bar of its high or low, while the curve peaks where the most volume traded — and those are often different bars. This is not a lag and not an error: **the distance between the peak of the curve and the pivot mark is a reading of effort against result**, and it is drawn on the chart for you. The thin dotted `Pivot Marks` show exactly where each price wave ends, so the gap is visible at a glance. The dot in each sketch is the peak of the curve.



Peak before the mark. Volume peaked one or more bars before price turned: the last push to the high (or the low) traded less. The effort came before the result.

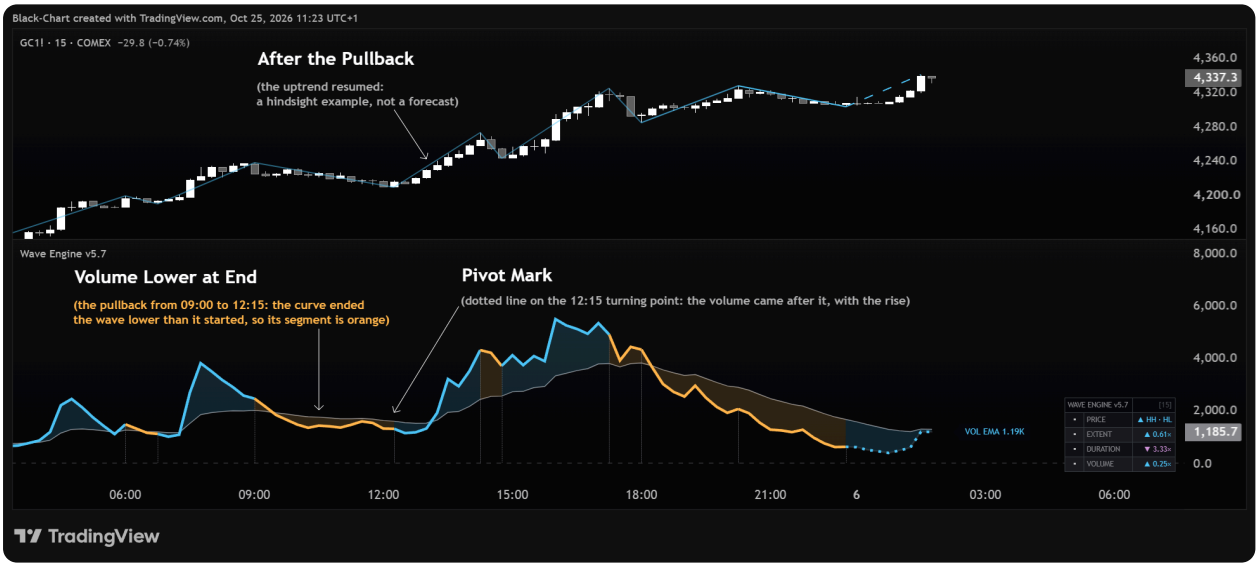


Peak on the mark. The bar with the most volume is the bar where price turned: effort and result on the same bar.



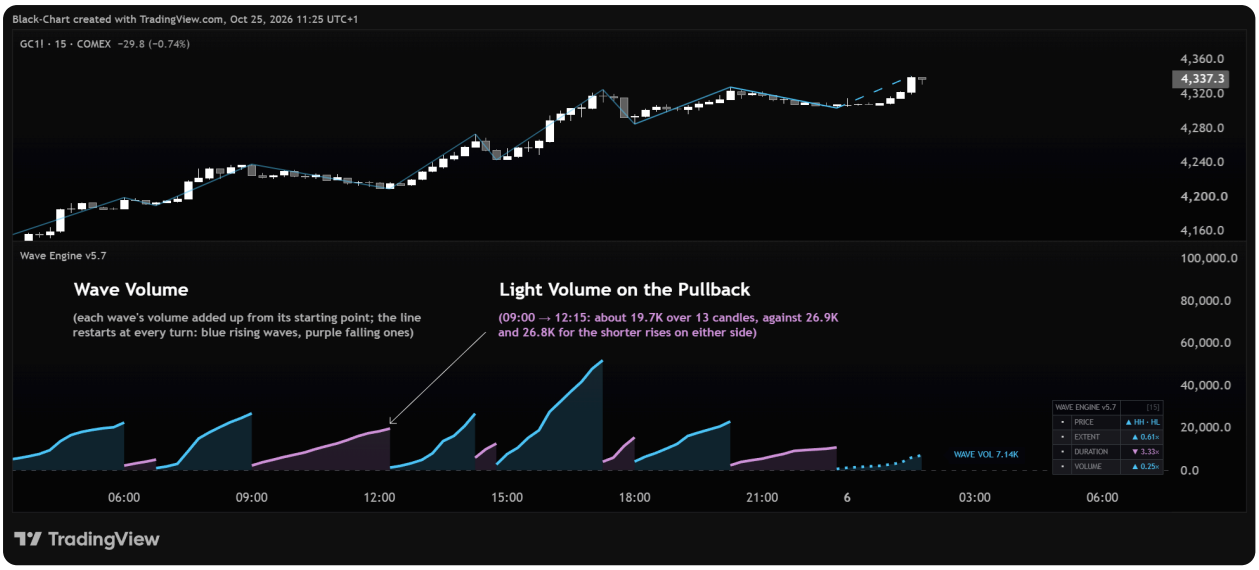
Peak after the mark. The heaviest volume arrives with the first bars of the new wave: the turn is met by volume, not by price alone.

These describe what happened; they are not signals. Read them with the panel — `PRICE`, `EXTENT`, `DURATION`, `VOLUME` — and with the structure around the pivot. **Wave Volume**, by contrast, turns exactly on the pivot by construction: use it when you want each wave's total, not the shape of volume inside the wave.



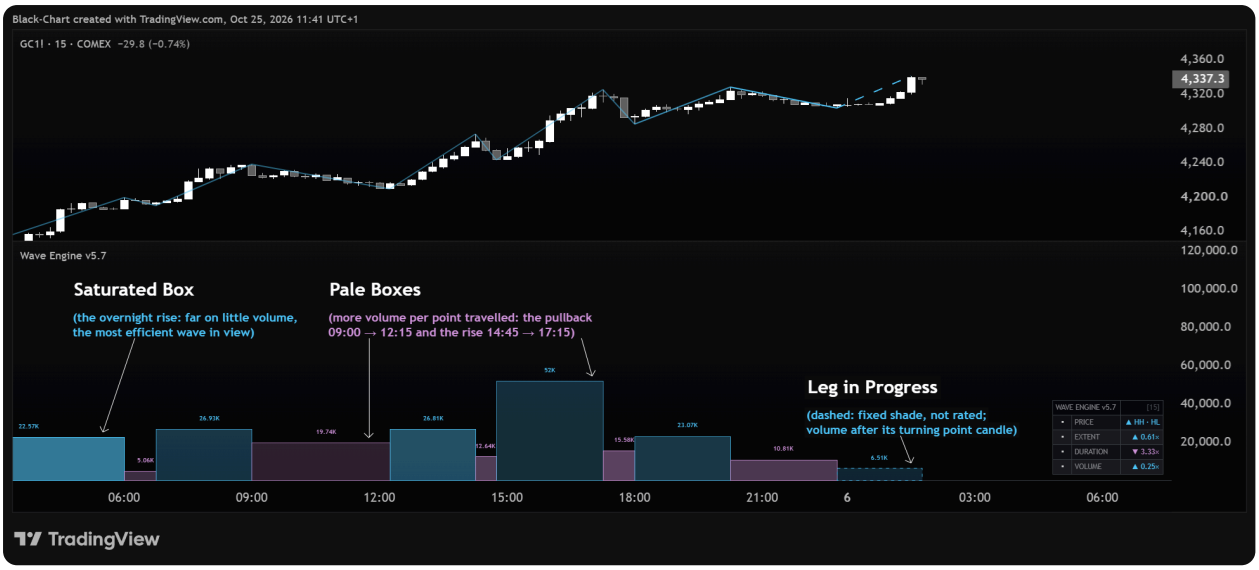
Volume Flow: the volume of each wave. Gold futures (GC1!), 15-minute chart, bar replay stopped at 01:45 on 6 August 2026 (chart time, UTC+2), with the default settings; the lower pane is taller than the default to give the curve room. **Volume Lower at End**: in the pullback from 09:00 to 12:15 price eased from 4,238.5 to 4,209.1 in thirteen bars while the volume curve kept sinking, so the segment is orange. **Pivot Mark**: the dotted line on the 12:15 turning point; the curve turns up only after the mark, as the next rise gets under way — the volume came after the turn. **After the Pullback**: the rise from 12:15 reached 4,273.6, and the waves that followed set higher highs and higher lows — a hindsight example, not a forecast.

The dotted segment on the right is the volume of the leg still in progress, and `VOL EMA` at the right edge gives its current value. The dashboard reads the last confirmed wave, the dip from 20:15 to 22:45.



Wave Volume. The same chart as the Volume Flow image, with `Pane View` set to Wave Volume. **Wave Volume**: each wave's volume added up from its starting point; the line restarts at every turn — blue for rising waves, purple for falling ones. **Light Volume on the Pullback**: 09:00 → 12:15, about 19.7K over 13 candles, against 26.9K and 26.8K for the shorter rises on either side — the pullback from the Volume Flow image, measured as a total, lighter in total and per candle than the rises around it.

`WAVE VOL` at the right edge is the running total of the leg in progress.



Wave Boxes. The same chart, with `Pane View` set to Wave Boxes; the figure above each box is its volume. **Saturated Box**: the overnight rise, far on little volume — the most efficient wave in view. **Pale Boxes**: the pullback 09:00 → 12:15 and the rise 14:45 → 17:15, the two palest boxes of the day — more volume per point travelled; the boxes in between have intermediate shades. **Leg in Progress**: dashed, with a fixed shade (it is not rated for efficiency), as tall as the volume traded after its turning point candle.

The shade is relative to all the waves drawn this week, including those to the left of the window.

THE DASHBOARD

Reading the panel

Four rows. Each one compares the **last confirmed wave** with the **previous wave in the same direction** — the last up wave with the up wave before it, the last down wave with the down wave before it. The rows change only when a new wave is confirmed.

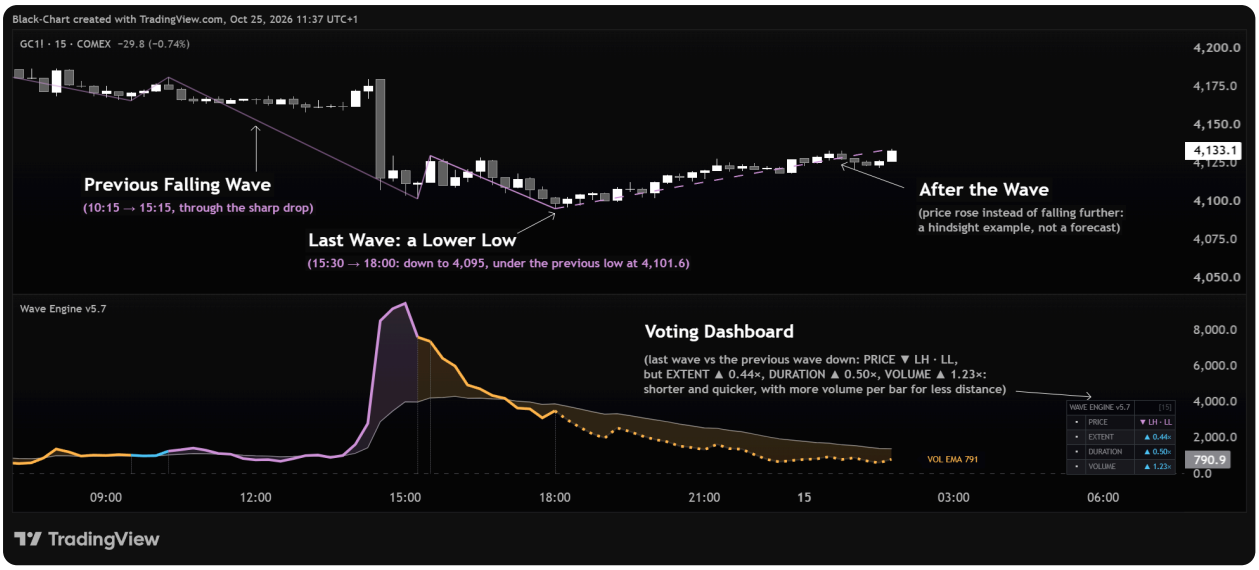
WAVE ENGINE	[15]
PRICE	▲ HH · HL
EXTENT	▲ 1.35×
DURATION	– 1.05×
VOLUME	▲ 1.42×

ROW	WHAT IT TELLS YOU
PRICE	The structure of the ZigZag. `▲ HH · HL` when the last wave starts and ends above the wave two positions earlier, `▼ LH · LL` when both are below, `– NO STRUCTURE` until one appears. It stays until the opposite structure forms.
EXTENT	**Distance.** The price distance of the wave divided by the distance of the previous wave in the same direction. `1.35×` = the wave travelled 35% further.
DURATION	**Time.** The number of bars of the wave divided by the bars of the previous wave in the same direction.
VOLUME	**Volume.** The wave's volume intensity compared with the previous wave in the same direction.

ℹ **How to read the arrows.** The number is the ratio. The arrow shows which side the reading leans to — `▲` the upside, `▼` the downside — **not** "more" or "less". When the two waves are about equal the row shows `–`. **EXTENT and DURATION:** a clearly larger wave points with the wave, a clearly smaller one against it — so a *down* wave shorter than the previous down wave shows `▲`. **VOLUME:** clearly less volume points against the wave; clearly more volume takes the arrow of EXTENT — more volume with more ground goes with the wave, more volume with less ground goes against it.

ℹ The four rows are **never added into a score**: they are four separate comparisons, shown side by side. They describe the last confirmed wave — not a forecast. Until there is a previous wave to compare with, a row shows `–`.

ℹ **The classic panel is still there.** Turn `Voting Dashboard` off (group **Pane View & Wave Reading**) to get it back: **THRUST ANALYSIS** with DURATION and EXTENT, **LAST WAVES** with the last up and down wave as volume | ticks | bars, **ACTIVE LEG** with the leg in progress, and **PRESET** with the active level. ⚠ In the classic panel DURATION and EXTENT carry the same names but a different calculation: the last two up waves against the last two down waves.



The rows can disagree. Gold futures (GC1!), 15-minute chart, bar replay stopped at 01:45 on 15 October 2026 (chart time, UTC+2), with the default settings. **Previous Falling Wave**: 10:15 → 15:15, through the sharp drop, from 4,180.9 down to 4,101.6 — the reference for the comparison. **Last Wave: a Lower Low**: 15:30 → 18:00, down to 4,095; it started below the previous wave's start and ended below its end, so PRICE reads ▼ LH · LL. **Voting Dashboard**: EXTENT ▲ 0.44×, DURATION ▲ 0.50×, VOLUME ▲ 1.23× — the new low came with a much shorter and quicker wave, and its heavier volume per bar did not produce a longer move, so those three rows read against the sellers. **After the Wave**: price rose instead of falling further — a hindsight example, not a forecast; the dashed active leg climbs from 4,095 to 4,134 at the stop.

The active leg is purple, the colour of the down structure, because no rising wave has yet confirmed a change of structure. The structure is still down while the other three rows read against the falling wave: the dashboard shows both and leaves the reading to you.

SETTINGS

What to touch, what to leave

This edition exposes only the essential controls: the structural engine is **pre-configured at validated values** and not exposed. In practice you pick **preset**, **anchor** and visuals; the rest runs on its own.

> **Changed too many settings, or is the indicator behaving oddly?** No problem: open the indicator's Settings (Inputs) and click **Reset settings** — the button at the bottom-left of the dialog — to return everything to the correct defaults.

GROUP	WHAT IT DOES	ADVICE
Wave Detection	**Wave Preset** (Auto / Scalping / Day Trading / Intraday / Swing / Position) — how waves are built. **Auto** picks the level from the chart timeframe on its own.	**Pick the preset**
Anchored Range	**Reference Period** — the dropdown that chooses where the engine starts counting: **Today**, **Week Open** (default), **Month Open**, **Manual (drag)** — plus the **Start Date/Time**, read only by the manual entry. Everything measures from here; a silver dashed vertical line marks the point.	**Week Open**
Display	Wave lines, Weis boxes, box efficiency colouring, box labels, active leg, per-wave telemetry (**off by default**), ZigZag colouring and width.	Your preference
Dashboard	Show/hide, position, size.	Your preference
HTF Duration & Extent	Classic panel only (Voting Dashboard off): computes its **DURATION/EXTENT** on a higher timeframe. **Default OFF**.	Default (OFF)
Pane View & Wave Reading	**Pane View** (Volume Flow / Wave Volume / Wave Boxes); the Volume Flow options — colour by ZigZag, colours, transparency and pivot marks; and **Voting Dashboard**, which switches between the four-row panel (on) and the classic panel (off).	Defaults

The four Reference Period entries

The dropdown decides where the engine starts counting. Everything else follows from it: change it and the waves, the volumes and the readings change too, because you are asking the market a different question.

ENTRY	MEASURES FROM	WHEN TO USE IT
Today	The open of today's **regular session** — not the pre-market.	Intraday reading, one day at a time.
Week Open	The open of the **current week**, in the exchange timezone. *Default*.	Day-to-day context: it restarts on its own every week.
Month Open	The open of the **current month**.	A wide window, for moves that build over weeks.
Manual (drag)	The point you choose, which **stays put** until you move it.	Studying a historical schematic or a specific range.

> **Start Date/Time is a secondary control.** It counts **only** under `Manual (drag)`: under the other three entries the calendar computes the anchor and the input's value is never read. The **handle stays visible and draggable on the chart outside Manual too** — TradingView draws it, not the indicator — but dragging it has no effect: to move the anchor by hand, set the dropdown to `Manual (drag)` first.

Which entry on which timeframe

Each entry defines a window of fixed duration: on the wrong timeframe that window holds too few bars — or far too many. Below are the bar counts **at full period** on a continuous-session instrument; early in a period there are fewer. Highlighted are the combinations that give a sensible reading.

TIMEFRAME	TODAY	WEEK OPEN	MONTH OPEN
5m	**288 bars**	**~2,000 bars**	~8,900 — huge window
15m	**96 bars**	**672 bars**	~2,970 bars
1h	24 bars	**168 bars**	**~740 bars**
4h	6 bars — too few	**42 bars**	**~185 bars**

TIMEFRAME	TODAY	WEEK OPEN	MONTH OPEN
1D	1 bar — unusable	7 bars	**~31 bars**

PUTTING IT TOGETHER

A reading flow

How to look, and in what order. This describes how to read the panel — not what to trade.

Anchor the range

Choose where to measure from with the `Reference Period` dropdown. A wrong anchor produces clean-looking numbers that describe the wrong thing.

Read the structure

`PRICE` says whether the ZigZag is making higher highs and higher lows, lower highs and lower lows, or neither yet.

Compare the wave with the one before

`EXTENT`, `DURATION` and `VOLUME`: did the last wave travel further, take longer and trade with more intensity than the previous wave in the same direction? Read the three side by side — they are not a score.

Look at volume inside the wave

In `Volume Flow` the colour of each segment shows whether volume ended higher or lower than it started, and the pivot mark shows whether the peak of volume came before, on or after the turn. Then form your own read — or hand the context to the Suite's context engine.

BLACKCHART SUITE — WAVE ENGINE · COMMERCIAL EDITION V5.7

Wave Engine is a technical analysis tool. It reports measured wave facts; it does not provide financial advice, predictions or buy/sell recommendations, and none of its readings are a trade entry signal. Markets carry risk — every decision, and its outcome, is yours.