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# European Roulette Tables in Online and Live Casinos

## Executive summary

European roulette is defined by a **single-zero wheel (0–36)** with **37 equally likely pockets**, giving a **uniform house edge of  $1/37 \approx 2.70\%$**  on all standard bets when paid at conventional odds. <sup>1</sup>

Modern “European roulette tables” encompass (a) **physical casino tables** with a wheel, layout, chips, and dealer procedures, and (b) **online implementations**: RNG (software) roulette, live dealer roulette (streaming a physical wheel), and faster formats such as **Speed Roulette** and automated wheels (“Auto Roulette”). Limits (min/max) are **table- and operator-configurable**, and are often **lower for inside bets** than for outside bets. <sup>2</sup>

Manufacturer and rules documentation indicate that casino-grade wheels are typically around **80–83 cm diameter** (e.g., a 830 mm wheel specification; a “standard” 80 cm wheel; and a 60 cm “mini” wheel used to increase games per hour). Ball and wheel materials in modern installations frequently involve **synthetic balls** (e.g., Ivorine/Teflon) and **durable engineered tracks** (e.g., engineered stone or “Garnite” racetracks), with many premium wheels incorporating sensors and security features (e.g., in-rim sensors; random rotor speed). <sup>3</sup>

Standard bet payouts are fixed (e.g., **Straight Up 35:1**, **Split 17:1**, **Street 11:1**, **Corner 8:1**, **Six Line 5:1**, **Dozen/Column 2:1**, **Even-money 1:1**), and the probabilities follow directly from coverage/37. Announced (racetrack/sector) bets such as **Voisins du Zéro**, **Tiers du Cylindre**, **Orphelins**, **Jeu Zéro**, and **Finales** are structured bundles of standard bets; under standard payouts their combined expected loss still equals **2.70% of total staked**, although the *distribution* of outcomes differs. <sup>4</sup>

Online limits vary widely by operator and table: examples include **penny-level minima (e.g., £0.01)** in some RNG titles, **low-stake live minima (e.g., 10p–50p)**, and **high-roller live minima (e.g., £100)**. Published maxima often distinguish **straight-up caps** from **even-money caps** (e.g., a published example of **£50 maximum straight-up** and **£10,000 cap** for “50/50” bets on a live table). Where published operator-specific numbers are unavailable, limits should be treated as unspecified. <sup>5</sup>

## Wheel and table specifications

European roulette uses a **single green 0** and numbers **1–36**, with **18 red and 18 black numbers**. This configuration (and its colour mapping) is stated in operator rules for live roulette and in casino rules guides. <sup>6</sup>

A common European wheel numbering sequence (clockwise, starting at 0) is: 0, 32, 15, 19, 4, 21, 2, 25, 17, 34, 6, 27, 13, 36, 11, 30, 8, 23, 10, 5, 24, 16, 33, 1, 20, 14, 31, 9, 22, 18, 29, 7, 28, 12, 35, 3, 26. <sup>7</sup>

Casino wheel diameters depend on model and installation. A casino equipment specification for the TCSJOHNHUXLEY <sup>8</sup> Saturn wheel lists a **diameter of 830 mm (32.67 in)**. <sup>9</sup> A manufacturer brochure for Cammegh <sup>10</sup> describes a standard **80 cm** wheel and a **75% scale** variant reducing diameter to **60**

cm to increase games per hour. <sup>11</sup> An academic “roulette physics” model explicitly analyses a **60 cm diameter** wheel configuration, consistent with the existence of smaller-footprint wheels. <sup>12</sup>

Wheel construction in modern casinos commonly blends traditional aesthetics and engineered components: examples include **wood veneers, metal turrets, and durable racetrack materials**. The Cammegh brochure describes a “Classic” wheel incorporating a **Garnite racetrack** and a Mercury 360 wheel example with **stainless steel ball stops**. <sup>11</sup> The TCS Saturn specification states a **wear-resistant engineered stone solid surface ball track**. <sup>9</sup>

Ball materials are typically synthetic rather than metal or glass (to protect wheel surfaces and ensure consistent physics). Cammegh lists roulette balls available in **Ivory and Teflon**, with common sizes **18 mm and 21 mm**, and also lists “win markers” (dollies). <sup>13</sup>

Published numeric “spin speed” specs from manufacturers are uncommon; however, physics/engineering sources provide realistic ranges. A roulette physics model reports observed ball angular speed decaying from **~0.83 revolutions per second to ~0.45 rps over ~10 s** for a typical wheel/ball configuration, and uses a representative **rotor speed ~0.33 rps** for error analysis. <sup>14</sup> A roulette sensor patent gives an illustrative measurement example of **~18.2 rpm rotor speed and ~83.70 rpm ball speed** (values used within that system’s processing context), consistent with “wheel slower than ball” dynamics in practice. <sup>15</sup>

## Game procedures and table operations

### Round sequence and dealer calls

A typical live roulette round is: (1) betting opens, (2) dealer spins the wheel and launches the ball **in the opposite direction** of the wheel, (3) betting closes (“No more bets”), (4) ball settles, (5) result is announced and bets are settled, (6) next round begins. This sequence and the “opposite direction” convention are described explicitly in casino rules and operator live roulette rules. <sup>16</sup>

flowchart TD

A[Betting opens: players place chips/bets] --> B[Dealer spins wheel + launches ball opposite direction]

B --> C[Betting closes: "No more bets" / timer ends]

C --> D[Ball lands and settles in a pocket]

D --> E[Result confirmed/announced; marker (dolly) placed on layout]

E --> F[Settlement: losing bets collected; winning bets paid]

F --> G[Layout cleared; next betting window opens]

Some live-dealer rule sets include additional validity conditions. For example, a live roulette rules page states that **bets are valid only until “No More Bets” or the system timer closes**, and that **at least three complete revolutions** of the ball track are required for a spin to be deemed valid. <sup>17</sup>

### Chip handling and layout interaction

On physical tables, players typically place chips on the felt layout; for certain “announced” bets (racetrack/sector bets), procedure often requires the player to **announce the bet** and provide chips to the dealer/croupier for placement. A casino rulebook on announced bets states that the player must provide the **equivalent value in chips or euros**, and that an announced bet is considered accepted

only after the croupier repeats it and it is confirmed by floor supervision. <sup>18</sup> Another casino rules sheet similarly instructs players to give chips to the dealer for racetrack bets on the layout in front of the dealer. <sup>19</sup>

On online live roulette, chips are virtual but operationally similar: the player selects chip denomination and taps/clicks bet spots. A live roulette rules PDF describes a UI where the player selects chip values, can **repeat** previous bets, **double** bets up to table limits, **undo** bets, and uses a “bet limits” panel to see min/max for the table (with an illustrated example range of **\$5–\$1,000** for that table). <sup>20</sup>

## Table markings and common European/French labels

European layouts show the 0–36 grid (3 columns × 12 rows) plus outside betting areas (dozens, columns, even-money bets). Many European tables—especially those supporting racetrack bets—also use French labels, such as **Manque (1–18)**, **Passe (19–36)**, **Pair/Impair (even/odd)**, and red/black indicators. These markings and payouts are illustrated in a casino rules layout diagram. <sup>21</sup>

## Betting options and announced bets

### Standard bets

Standard bets are commonly grouped into **inside bets** (placed on the number grid) and **outside bets** (placed on the perimeter boxes). Definitions and coverage for the standard inside/outside set are provided in casino and live roulette rules documentation. <sup>22</sup>

Inside bets typically include Straight Up, Split, Street, Corner, and Six Line. Outside bets include Dozen, Column, Red/Black, Even/Odd, and 1–18/19–36. <sup>23</sup>

### Racetrack, neighbours, and announced bets

Racetrack (oval) betting interfaces support “announced” sector bets and neighbour bets—bets defined by **wheel adjacency** rather than table grid adjacency. Casino rules enumerate standard announced bets such as **Voisins du Zéro**, **Tiers du Cylindre**, **Orphelins**, **Finales**, **Jeu Zéro**, and also “numbers with up to four neighbours on both sides” (neighbour bets). <sup>24</sup>

A live roulette rules/feature PDF (racetrack interface) documents the canonical compositions used online for these bets, including: **Tiers du Cylindre** (six splits), **Voisins du Zéro** (nine chips arranged across a street, splits, and a corner), **Orphelins à Cheval** (one straight-up plus four splits), and **Jeu Zéro** (three splits plus a straight-up). <sup>25</sup> It also lists “special bets” menus for **Finale en plein** (final digit straight-up bundles) and **Finale à cheval** (final digit split bundles). <sup>26</sup>

### La Partage and En Prison rules

Some single-zero roulette tables (often marketed as “French Roulette”, but sometimes available within “European” live portfolios) apply **La Partage** or **En Prison** to even-money bets: when 0 hits, the player loses only **half** the even-money stake (La Partage), or the even-money bet is carried to the next spin (En Prison) with equivalent expected value. A live French roulette rules document explicitly states La Partage applies to even-money bets (red/black, even/odd, 1–18/19–36), and that only half is lost when 0 hits. <sup>27</sup>

## Odds, payouts, probabilities, and house edge

### Core assumptions for calculations

All probabilities below assume a **fair single-zero wheel with 37 equally likely outcomes** and **standard payouts** (35:1, 17:1, 11:1, 8:1, 5:1, 2:1, 1:1 as applicable). These standard payouts and the 37-pocket assumption are stated in live roulette rules and casino rules diagrams. <sup>28</sup>

Under these assumptions, the expected loss per unit stake for any standard bet equals **1/37**, producing a uniform **house edge of 2.70%** and theoretical **RTP of 97.30%** (before any La Partage/En Prison reduction). The RTP figure is also explicitly quoted in a live roulette rules PDF. <sup>29</sup>

### Standard bet comparison table

Probabilities and house edge values in the table below are calculated from **numbers covered ÷ 37**, and house edge = **1/37** for standard European roulette under standard payouts. <sup>28</sup>

Bet type	Numbers covered	Layout/placement	Payout (to 1)	Win probability	House edge
Straight up	1	Inside (single number, incl. 0)	35:1	$1/37 \approx 2.7027\%$	$1/37 \approx 2.7027\%$
Split	2	Inside (line between 2 numbers)	17:1	$2/37 \approx 5.4054\%$	$1/37 \approx 2.7027\%$
Street	3	Inside (end of a row / 3-number line)	11:1	$3/37 \approx 8.1081\%$	$1/37 \approx 2.7027\%$
Corner	4	Inside (intersection of 4 numbers)	8:1	$4/37 \approx 10.8108\%$	$1/37 \approx 2.7027\%$
Six line	6	Inside (line between two rows)	5:1	$6/37 \approx 16.2162\%$	$1/37 \approx 2.7027\%$
Dozen	12	Outside (1st/2nd/3rd 12)	2:1	$12/37 \approx 32.4324\%$	$1/37 \approx 2.7027\%$
Column	12	Outside (2-to-1 column)	2:1	$12/37 \approx 32.4324\%$	$1/37 \approx 2.7027\%$
Red/Black	18	Outside	1:1	$18/37 \approx 48.6486\%$	$1/37 \approx 2.7027\%$
Odd/Even	18	Outside	1:1	$18/37 \approx 48.6486\%$	$1/37 \approx 2.7027\%$
Low/High (1-18 / 19-36)	18	Outside	1:1	$18/37 \approx 48.6486\%$	$1/37 \approx 2.7027\%$

## Announced/racetrack bets

Announced bets are “bundles” of standard bets placed across wheel sectors. Casino rules and live roulette rules PDFs specify the canonical chip counts and placements for the main announced bets (Voisins, Tiers, Orphelins, Jeu Zéro) and Finales. <sup>30</sup>

Under standard payouts and a fair 37-pocket wheel, the **house edge on the total stake** remains **1/37**  $\approx$  **2.70%**, but the **net profit when you “hit”** varies by which underlying component wins (and whether any number is covered twice). This table summarises typical structures. <sup>31</sup>

Announced bet	Total units staked	Distinct numbers covered	Composition (standard bets)	Net profit on hit (units)	P(hit any)	House edge (per unit)
Neighbours (5 numbers)	5	5	5× straight-up	+31	$5/37 \approx 13.5135\%$	$1/37 \approx 2.7027\%$
Tiers du Cylindre	6	12	6× split	+12	$12/37 \approx 32.4324\%$	$1/37 \approx 2.7027\%$
Voisins du Zéro	9	17	2× street (0/2/3), 5× split, 2× corner	+15 if 0/2/3; +9 otherwise	$17/37 \approx 45.9459\%$	$1/37 \approx 2.7027\%$
Orphelins à Cheval	5	8	1× straight-up (1) + 4× split (17 is double-covered)	+31 if 1 or 17; +13 otherwise	$8/37 \approx 21.6216\%$	$1/37 \approx 2.7027\%$
Jeu Zéro	4	7	3× split + 1× straight-up (26)	+32 if 26; +14 otherwise	$7/37 \approx 18.9189\%$	$1/37 \approx 2.7027\%$
Finale en plein (0–6)	4	4	4× straight-up (e.g., 0+10+20+30)	+32	$4/37 \approx 10.8108\%$	$1/37 \approx 2.7027\%$
Finale en plein (7–9)	3	3	3× straight-up (e.g., 7+17+27)	+33	$3/37 \approx 8.1081\%$	$1/37 \approx 2.7027\%$
Finale à cheval	4	8	4× split (e.g., 0/3+10/13+20/23+30/33)	+14	$8/37 \approx 21.6216\%$	$1/37 \approx 2.7027\%$

## Example calculations

### Example A: expected value of a £10 Straight Up bet (standard European roulette).

Win probability is 1/37 and the net win is 35× stake. Expected value:

$EV = (1/37) \cdot (+£350) + (36/37) \cdot (-£10) = -£10/37 \approx -£0.27$  per £10 bet (house edge **2.70%**). Payout basis and 37-pocket structure are stated in live roulette rules and casino diagrams. <sup>28</sup>

### Example B: expected value of a £10 Red/Black bet under La Partage.

With La Partage, if 0 hits (1/37), you lose half the stake; otherwise the bet behaves like a standard

even-money bet.  $EV = (18/37) \cdot (+£10) + (18/37) \cdot (-£10) + (1/37) \cdot (-£5) = -£5/37 \approx -£0.14$ , i.e.,  $1/74 \approx 1.35\%$  **house edge** on these even-money bets. The La Partage half-loss rule is stated in a live French roulette rules document. <sup>27</sup>

## Online casino variants and typical limits

### Regulatory and compliance context for “how it works” online

Remote gambling in Great Britain is subject to the UK Gambling Commission <sup>32</sup> Remote gambling and software technical standards (RTS), which include requirements that games implement rules as described to the customer, and that mapping from random inputs to outcomes matches stated probabilities and pay tables. <sup>33</sup> The regulator also maintains an approach to testing and publishes guidance around compliance and testing strategy for RTS. <sup>34</sup>

For operators licensed in Malta, the Malta Gaming Authority <sup>35</sup> states that game rules must be **clearly accessible** to players (as a minimum, **no more than one click away** from the game page, with rules presented immediately on that click). <sup>36</sup>

These regulatory principles matter operationally because they shape what online roulette must disclose: rules, limits, and (for RNG) how outcomes are generated and mapped. <sup>37</sup>

### Variant mechanics and typical operational features

**RNG (software) roulette** renders a virtual wheel and selects outcomes via an RNG. Regulatory technical standards emphasise that the RNG-to-outcome mapping must match the published pay table and probabilities, and operator guidance discusses how the RNG number maps to wheel pockets. <sup>38</sup>

**Live dealer roulette** streams a physical wheel and dealer. Operationally, live games replace physical chip placement with a digital interface (chip selection, tap to bet, timers/traffic lights), while the dealer still performs the physical spin and result announcement; some live rule sets specify dolly placement and automated settlement after the dealer announces the winning number. <sup>39</sup>

**Auto roulette** uses a physical wheel with automated ball launch and/or automated result capture; it is typically positioned between live dealer and RNG in pace and “casino feel”. A live speed auto roulette page describes a **15-second betting window** and a round duration around **35 seconds**. <sup>40</sup>

**Speed roulette** is a live roulette format engineered for higher throughput. A press release from Evolution <sup>41</sup> states that Speed Roulette rounds take around **25 seconds from spin to spin**. <sup>42</sup>

### How bet limits are structured by bet type

Betting limits are typically expressed as: - **table minimum** (minimum stake per bet spot or per total bet), - **table maximum** (maximum stake per bet spot and/or total stake per round), and - sometimes **maximum win per round** (a cap on total payout). <sup>43</sup>

Some rule sets implement a “scaled” limit structure where maximums for bets covering more numbers are multiples of the Straight Up maximum. A published roulette rules page for Playtech <sup>44</sup> (live roulette rules) describes this multiplier approach (e.g., Split max = Straight Up max ×2; Street ×3; Corner ×4; Line ×6). <sup>45</sup>

A casino rules sheet also illustrates that maximum bets differ materially by bet type (e.g., even-money maxima far exceeding straight-up maxima), and explicitly lists maximums by bet category for a given table in euros. <sup>46</sup>

## Typical online limits observed and how they vary by operator

The table below summarises **publicly stated** limits from selected major operators and representative rule documents. Where a source does not publish a numeric max, it is marked **unspecified** (operator-configurable). <sup>47</sup>

Operator / source	Variant (example)	Minimum bet (example)	Maximum bet (example)	Per-bet / per-type notes
Ladbrokes <sup>48</sup>	Live Roulette (published example)	£0.50	Straight Up max £50; even-money max £10,000	Example explicitly distinguishes inside vs outside caps. <sup>49</sup>
	Live Roulette (overall range statement)	£0.10	"some tables" up to £10,000	Operator describes table-to-table variability; value given as an upper range example. <sup>50</sup>
	Penny Roulette	£0.01	up to £1,000	Extremely low minimum in an RNG title; max stated as "can go up to". <sup>51</sup>
Unibet <sup>52</sup>	Live roulette portfolio (selected tables)	£0.10 (Indian Roulette); £0.20 (Super Stake); £1 (Football Studio); £100 (Salon Privé)	unspecified	Public page lists multiple table minima including high-roller entry levels; maxima not stated there. <sup>53</sup>
Grosvenor Casinos <sup>54</sup>	Premium European Roulette (game info)	10p (min straight)	£25 (max straight)	Low-limit RNG table example; other bet-type maxima not shown on that page. <sup>55</sup>
	Live Speed Auto Roulette	unspecified	unspecified	Betting time stated as 15 seconds; limits not published on the excerpted page. <sup>40</sup>
Betfair <sup>56</sup>	Live casino limits framework	unspecified	unspecified	Bet limits vary by VIP/ Priority level with selectable min/max sets. <sup>57</sup>

Operator / source	Variant (example)	Minimum bet (example)	Maximum bet (example)	Per-bet / per-type notes
LeoVegas <sup>58</sup>	Live Roulette rules (general)	indicated in-game (not numeric in rules excerpt)	indicated in-game (not numeric in rules excerpt)	Rules describe where min/max are shown (in-game), bet validity by dealer call/timer, and dolly placement. <sup>17</sup>
Live roulette rules PDF (representative table)	Live European Roulette (example)	\$5	\$1,000	Example of a bet limits panel and chip denominations; operator/table-specific currency and values. <sup>20</sup>
bet365 <sup>59</sup>	Live French Roulette rules	unspecified	unspecified	Rules confirm La Partage for even-money bets and that table limits apply via a "Table Limits" panel. <sup>60</sup>
PokerStars <sup>61</sup>	Live roulette / RNG roulette explainers	unspecified	unspecified	Public guidance focuses on mechanics and fairness rather than publishing numeric limits universally. <sup>62</sup>

**Ranges typically implied by the published examples above (EUR/GBP): - RNG roulette:** minima can reach **£0.01–£0.10**, with published examples of straight-up maxima as low as **£25** on low-limit branded tables, while other RNG titles may allow higher. <sup>63</sup>

- **Live roulette:** published minima include **£0.10–£0.50**, and published maxima can be highly asymmetric (e.g., inside caps in tens of pounds vs even-money caps in thousands). <sup>64</sup>

- **High-roller live:** published entry minima can reach **£100** for "private/salon" tables (with maxima typically unspecified on public pages). <sup>53</sup>

- **Land-based euro illustration:** one casino rules sheet lists even-money maxima in the **thousands of euros**, with materially lower straight-up maxima, illustrating the common risk-management shape (outside >> inside). <sup>46</sup>

## Assumptions, unspecified details, and source links

**Assumptions used in the maths tables:** equal probability for each pocket (no wheel bias), single-zero (37 pockets), and standard payouts as shown in roulette rules documentation; announced bets treated as their documented component bets. <sup>65</sup>

**Unspecified / variable by operator or table:** - Exact **maximum bet per position** and **maximum win per round** are often displayed only inside the game UI (and may vary by VIP level, jurisdiction, or table).

<sup>66</sup> - Manufacturer pages rarely publish **target RPM**; speed ranges above are taken from physics/engineering sources and a technical patent example rather than vendor spec sheets. <sup>67</sup> - Online

“European roulette” naming is inconsistent: some operator portfolios separate “European” and “French” roulette, and only some tables apply La Partage/En Prison. <sup>68</sup>

**Key sources (direct links in a code block):**

UK Gambling Commission RTS (random outcomes / rules mapping):  
<https://www.gamblingcommission.gov.uk/standards/remote-gambling-and-software-technical-standards/rts-7-generation-of-random-outcomes>

Malta Gaming Authority FAQ (game rules must be one click away):  
<https://www.mga.org.mt/faqs/>

Spielbanken Bayern roulette rules PDF (layout, announced bets, max bets by type):  
[https://www.spielbanken-bayern.de/storage/filemanager/files/shares/Info-PDFs/Inernational/ROG\\_Roulette.pdf](https://www.spielbanken-bayern.de/storage/filemanager/files/shares/Info-PDFs/Inernational/ROG_Roulette.pdf)

TCSJOHNHUXLEY Saturn Roulette Wheel specification (diameter, ball track material):  
[https://tcsjohnhuxley.com/wp-content/uploads/2023/03/Saturn\\_Roulette\\_Wheel\\_CIS\\_11.24\\_-V1.1.pdf](https://tcsjohnhuxley.com/wp-content/uploads/2023/03/Saturn_Roulette_Wheel_CIS_11.24_-V1.1.pdf)

Cammegh brochure PDF (standard vs 75% scale wheel diameter; materials; security features):  
<https://pub-mediabox-storage.rxweb-prd.com/exhibitor/document/exh-330f4fc2-dd27-45ca-bead-23a8138f7847/abad03bb-04b3-4333-b4ca-6cc47a2a50d3.pdf>

Cammegh accessories (roulette balls: Ivorine/Teflon; 18mm/21mm; dollies):  
<https://www.cammegh.com/our-products/accessories/>

Evolution Speed Roulette press release (~25 seconds spin-to-spin):  
<https://www.evolution.com/news/evolution-launches-speed-roulette-worlds-fastest-live-roulette/>

LeoVegas live roulette rules (37 pockets; dealer procedure; dolly; timer rule):  
<https://help.leovegas.com/hc/en-gb/articles/6335889107346--Live-Roulette-Rules>

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<sup>1</sup> <sup>2</sup> <sup>6</sup> <sup>17</sup> <sup>28</sup> <sup>35</sup> <sup>39</sup> <sup>52</sup> <sup>54</sup> <sup>65</sup> <https://help.leovegas.com/hc/en-gb/articles/6335889107346--Live-Roulette-Rules>

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<sup>3</sup> <sup>9</sup> [https://tcsjohnhuxley.com/wp-content/uploads/2023/03/Saturn\\_Roulette\\_Wheel\\_CIS\\_11.24\\_-V1.1.pdf](https://tcsjohnhuxley.com/wp-content/uploads/2023/03/Saturn_Roulette_Wheel_CIS_11.24_-V1.1.pdf)

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<https://pub-mediabox-storage.rxweb-prd.com/exhibitor/document/exh-330f4fc2-dd27-45ca-bead-23a8138f7847/abad03bb-04b3-4333-b4ca-6cc47a2a50d3.pdf>
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