

Calavera Cascade

Kobow Original · eInstant Cert Pack v1

Pollard analog: Cauldron Me Crazy (K.A.R. 111-23-25) — symbol match cascade pattern

Issued: 2026-05-15T22:46:11.706000Z · Authority: Multi.Bingo iLottery RGS · Operator: Kobow
Signing key: Ed25519 · ID d651f1b9f793f40d

Important regulatory note: This game is a **Kobow proprietary design** derived from the cited Pollard analog pattern. The paytable below is **synthesized to hit 88.0% RTP** with the regulator-aligned top prize. For state cert submission, the paytable may be reviewed/replaced with a regulator-specific table; this v1 cert pack establishes the operational architecture (RNG, audit chain, verifier surface) which is shared with all K.A.R.-anchored games in this catalog.

Math (synthesized 88% RTP)

Pool size	1,000,000
RTP @ unit denom	88.0000%
Top prize (max denom)	\$80,000
Bonus engine	cascade_pick_em

1. Paytable (13 tiers, synthesized)

Multiplier	Count in pool	Odds (1 in)
x8000	1	1,000,000.00
x800	54	18,518.52
x250	174	5,747.13
x160	272	3,676.47
x100	697	1,434.72
x50	1,395	716.85
x40	1,090	917.43
x25	3,488	286.70
x10	10,464	95.57
x5	20,928	47.78
x2	52,320	19.11
x1	87,200	11.47
x0.5	140,820	7.10

2. Bonus engine — cascade_pick_em

Symbol-match cascade with WIN MULTIPLIER strip + SKULL REAPER pick-em (3 of 5 skulls reveal $\times 2$ - $\times 100$ multipliers).

3. Pool architecture

Each pool consists of 1,000,000 shares. RGS service multibingo-rng:9443 (RNG_STRICT=true) provides the server seed. mulberry32(SHA-256(seed)) Fisher-Yates shuffle deterministically orders the payable counts. Tickets consumed sequentially; outcome = multiplier at position.

4. Audit chain

Daily Merkle root signed Ed25519 (key ID d651f1b9f793f40d), WORM-locked in PG, audit blob persisted with prev_root chain. Per K.A.R. (h) compliance pattern.

5. Verifier endpoints

```
GET /api/ilottery/games/CALAVERA_CASCADE/paytable
POST /api/ilottery/games/CALAVERA_CASCADE/open-pool
POST /api/ilottery/games/CALAVERA_CASCADE/play
GET /api/ilottery/verify/:ticket_id
POST /api/ilottery/vector/replay
GET /api/ilottery/merkle/proof/:ticket_id
GET /api/ilottery/audit/public-key
```

6. Test vectors v1

URL: https://kobowlotto.com/mathforge/ilottery/gdd/calavera_cascade/vectors_v1.json
600 vectors \times 5 denoms (10/25/50/100/500c) = 3,000 prize data points.

7. Operator Ed25519 public key

```
-----BEGIN PUBLIC KEY-----
MCowBQYDK2VwAyEAU2k0zXnm09QHduKLSEQYUAFeACAEOTUceEuiRGLSiXs=
-----END PUBLIC KEY-----
```