

100x Lucky Pyramid

Kobow Original · eInstant Cert Pack v1

Pollard analog: Egyptian Oasis (VA #710) + VIP Riches (K.A.R. 111-23-11) — pyramid climb + key-num

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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)	\$100,000
Bonus engine	pyramid_climb

1. Paytable (12 tiers, synthesized)

Multiplier	Count in pool	Odds (1 in)
x50000	1	1,000,000.00
x5000	8	125,000.00
x1000	41	24,390.24
x250	332	3,012.05
x100	664	1,506.02
x50	1,328	753.01
x25	3,320	301.20
x10	9,960	100.40
x5	19,920	50.20
x2	49,800	20.08
x1	83,000	12.05
x0.5	136,800	7.31

2. Bonus engine — pyramid_climb

5-level pick-em pyramid ($x_1 \rightarrow x_2 \rightarrow x_5 \rightarrow x_{10} \rightarrow x_{100}$). Each level: pick 1 of 3 hieroglyphs (2 ADVANCE / 1 STOP).

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/LUCKY_PYRAMID_100X/paytable
POST /api/ilottery/games/LUCKY_PYRAMID_100X/open-pool
POST /api/ilottery/games/LUCKY_PYRAMID_100X/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/lucky_pyramid_100x/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-----
```