Line Following Competition Rules

1. ROBOT CATEGORIES

The Line-following competitions are held in separate categories:

a. LEGO line-following robots.
b. Line-following robots that do not use EDF turbines to increase track grip.
c. Line-following robots that use EDF turbines to increase track grip.

Depending on the number of participants, organizers reserve the right to merge categories b and c.

2. COMPETITION FIELD

a. The competition field is a white synthetic board with an area of 3–10 m².
b. LEGO line-following robots compete on different track configurations.
c. The line marking the track is 15 mm wide (±3 mm).
d. The track may include sharp corners with angles ≥ 90°.
e. Minimum turning radius of the line: 7.5 cm.
f. There must be 25 cm of free space on both sides of the line, except at intersections.
g. Lines may intersect only at right angles. Before the intersection, lines must be straight for at least 20 cm.
h. At intersections, lines are perpendicular for at least 20 cm. The robot must follow the straight line at intersections (it cannot turn onto the intersection line, otherwise the attempt will not count).
i. The track is closed, with start and finish at the same point.
j. The track surface may consist of components joined so that gaps and irregularities are minimized as much as possible.

3. ROBOT REQUIREMENTS

The robot must be autonomous (self-operating).
Maximum dimensions: 25 cm × 25 cm × 25 cm (length × width × height).
Maximum weight: 1 kg.
Maximum allowed voltage: 48 V.
The robot must have a start/stop button or remote control (recommended).
Any other communication with the robot during the run is prohibited, except for remote start/stop.

The robot must be designed so that it can start after the referee's signal, with a 2s delay for the operator to step back.

The robot must not be sensitive to environmental conditions such as lighting, smoke, sound, laser effects, or other event elements.

During the event, camera flashes and other intense light sources are prohibited.

Note: The track may be illuminated with incandescent, halogen, CFL, CCFL, LED, and other light sources with dimming functions.

The robot is prohibited from:

a. changing its size.
b. damaging the track surface, barriers, timers, or injuring people.
c. emitting gases, liquids, or dust.

Additional requirements for LEGO robots:

The robot must be built only from licensed (certified) LEGO or original HiTechnic parts.

The robot must use only LEGO-recommended batteries.

LEGO robot dimensions are allowed a tolerance of +2 mm.

4. COMPETITION FORMAT

The competition format is determined by the tournament organizers based on the number of participants. The format is published on www.roboklubas.lt.

The competition consists of two stages:

a. Qualification stage: Participants may perform unlimited attempts in a live queue, taking one attempt at a time and then returning to the end of the line.

b. Final stage: The four fastest participants advance to the final. Organizers may adjust the number of finalists or cancel the final depending on the number of participants who completed the track. (If the final is not held, winners are determined by qualification times.)

In the final, the participant with the slowest qualification time starts first.

In the final stage, each participant has 5 minutes and unlimited attempts. Time starts when the robot first crosses the start line. The last attempt counts if the robot crosses the start line before the 5-minute limit.

The participant with the best time in the final stage becomes the winner of this event.

Driving procedure:

a. Before the attempt, the participant must place the robot at the start line.
b. After the referee's signal, the robot is started.
c. While driving, the robot must cover the line with its body.
d. If the robot loses track, it may return to the same point where it lost the track or an earlier point on the track.
e. An optical timing system records the track completion time at the start/finish position.
f. The robot is considered to have crossed the start or finish line if the automatic timer is triggered (sensor height from the track surface is 2 cm ±1 cm).
g. Each run time is measured from the moment the robot crosses the start line to the moment it crosses the finish line.
h. All parts of the robot must cross the start/finish lines.
i. Each attempt has a 3-minute limit.
j. If the robot fails to cross the start and/or finish line within 3 minutes, the attempt does not count and the participant may return to the end of the line for a new attempt.

5. ORGANIZATION

The robot must be registered before the competition.
During registration, the robot is assigned a number that must be affixed in a visible location. Compliance with Section 2 requirements is also checked.
The competition schedule is published on www.roboklubas.lt.
All disputes arising during the competition are resolved by the chief referee.