Technical Regulations Le Mans Series 1/24

January-2020 Versión 3.3 – Icar Indoor Le Mans Series

1. DESCRIPTION

Any reproduction at scale 1/24 or 1/25 of the Le Mans prototypes scale 1/1 that may have taken part in the American Le Mans Series or in the European Le Mans Series in the years 2014, 2015, 2016, 2017, 2018, 2019, 2020

The Oreca Racing FLM (Formula Le Mans) car is not classified as an LMP in any of the above-mentioned Championships (ALMS and ELMS) and therefore is not permitted.

2. WEIGHTS & MEASUREMENTS

2.01 Total minimum weight of the **whole** car at the start of the race: 165 gr.
2.02 Total minimum weight of the **whole** car at the end of the race: 164 gr.
2.03 Minimum bodyweight with body holders: 20 gr.
2.04 Minimum ground clearance at the start of the race: 1.20 millimeters
2.05 Minimum ground clearance for the chassis during and after the race: 0.40 mm
2.06 Maximum width of chassis: 78 mm.
2.07 Maximum width of front axle: total clearance width of front wheel, less 5mm.
2.08 Maximum front and rear track width: 83mm. (measured from outside of a tire to the other).

The axle width is understood to be the length of the axle plus the wheel (not including the inserts) and shall always be measured from the outside of one wheel to the other.

3. MOTOR & RELATION

3.01 The approved motor type is the SRP Speed35 short can 35.000 rpm
3.02 For endurance races, a single relation will be established for all participants and will be announced with sufficient notice before the race.

4. CHASSIS

The chassis shall be free for this category.

4.01 Only one chassis shall be used throughout the race
4.02 The use of differentials is not allowed.
4.03 Only the use of magnets in the motor is allowed.
Additional magnets are not allowed; neither is the use of condensers or accessories that increase the power of the motor or modify the current to the motor.
4.04 The motor may not be attached to the chassis with solder.
4.05 The use of thermal paste is not allowed.
4.06 Soldering is not allowed on the chassis. Solder may only be used for the wiring connections of the motor.
4.07 The use of screw-mounted ballasts is allowed at the same level of the chassis (no lead or tungsten), providing that it does not extend beyond the lower part of the chassis. Should lead or tungsten be used, it must always be placed on the base of the chassis.
4.08 The maximum width of the chassis is 78mm. No other material except carbon fibre, glass fibre or the bodywork itself may be used exceeding these 78mm. Should the bodywork include additional lateral counterweights, they may not exceed the maximum width of the chassis.
4.09 When viewed from above, the chassis must be completely covered by the bodywork.

5. WHEELS

The wheels must be centered in the wheel archwith a tolerance of +/- 1 mm.

All four wheels must make contact with the track and be fitted with 3-dimensional wheel inserts similar to the wheels of the real 1:1 car, throughout the whole race.

Tyres dressing of any kind is not allowed during official practice races or the race itself.
Wheels may only be cleaned with the liquids and tape supplied by the organization.
As seen from above, the wheels may not exceed the width of the car body.

FRONT WHEELS

The diameter of the front wheels for cambered wheels will be measured at the largest present diameter.

5.01 The front wheels shall be made of black foam and may be hardened with cyanoacrylate or varnish.
5.02 The use of cambered front wheels does not in any way void the rule regarding the minimum diameter, not the rule regarding the contact surface.
5.03 The wheel rims shall be made of aluminum.
5.04 Maximum angle of inclination of the front wheels 3.00º.
5.05 Exterior diameter of the rim 21.00 mm.
5.06 Minimum exterior diameter of the wheel 26.00 mm.
5.07 Minimum width of the rim 6.00 mm.
5.08 Minimum width of the wheel 6.00 mm.
5.09 Minimum width of the area of contact of the wheel 6.00 mm.
5.10 The front wheels must not be set into the body more than 2.5 mm. This measurement is calculated from the outside of the body on the wheel arch to the outside edge of the wheel rim (the inserts are not included in this measurement)

REAR WHEELS

5.11 The rear wheels shall be made of black sponge.
5.12 Wheel rims shall be made of aluminum.
5.13 Exterior diameter of the rim 21.00 mm.
5.14 Maximum exterior diameter of the wheel 27.50 mm.
5.15 Minimum exterior diameter of the wheel 26.00 mm.
5.16 Maximum width of the rim 13 mm.
5.17 Maximum width of the wheel 13.00 mm.

6. BODYWORK, INTERIOR &ACCESSORIES

All bodywork must be within the scale 1/24 or 1/25and *accurately reproduce the real car.*

6.01 Bodywork

The maximum width of the body will be of 85mm and the bodywork must be painted, decorated according to the time and equipped with:

- Front windshield and side windows, if existing on the real 1/1 car.
- Front splitter, if existing on the real 1/1 car.
- Rear spoiler, the same shape as the reproduced model.
- Rearview mirrors.
- Rear diffuser with a minimum width of 4 mm.
- Front headlights.

Only the use of one body throughout the race is allowed.

 It is compulsory to assemble the maximum number of visible exterior features, including tyre guardsand chassis parts (which shall be regarded as parts of the bodywork) in order to achieve maximum similarity with the real model. Also included in this rule is the shape of the original body work such that ***bodywork that does not conform to the original model will not be allowed****;* for example, a longer or shorter body, a wider or narrower body or any other modification affecting the original appearance of the car. It is forbidden to change or deform any feature of the bodywork except the manufacture of one or more domes to provide room for the crownand/or axle support.

6.02 Interior/cockpit

The body interior must contain at least the following items:

- Dashboard.
- Steering wheel.
- Painted driver figure with at least a head, trunk and arms, and made of plastic, resin or Lexan.
- Crash helmet made of hard plastic (not Lexan) or resin if the driver is made of Lexan.

6.03 Material

- The bodywork must be made and/or assembled from one or more of the following materials: molded polystyrene (i.e. plastic model kits), or molded and/or resin laminated with glass fiber or carbon fiber.

- The exterior of the body must accurately reproduce the real 1/1 car.
  Conformity to this requirement will be left to the judgement of the scrutineers and the race marshall.

- Lexan is allowed in the interior of the car, the driver, the windows, the rear wing, diffusor, headlights, and in a rear vertical position such as the aero wing (e.g. the 2011 Peugeot 908) and only for the specified parts and elements.

- The other elements not specified in the point above must be made of resin, carbon fiber, of the same material as the bodywork or in molded polystyrene (i.e. plastic model kits).

- The body must cover completely every part of the chassis, all the mechanical parts of the car and the wheels must not exceed the width of the body when viewed from above.

Exception: As is compulsory since 2012 for LMS 1:1 races, in cars with more openings than those for the 4 wheels, the models reproduced in 1/24 are allowed these openings providing they are located in the correct position.

7. AXLES

7.01 The axle must not extend beyond the wheel rim.

8. GUIDE

8.01 Only one guide in the original designated position is allowed.
8.02 The guide shall not be longer than 27 mm.
8.03 The guide should not be visible when viewed from above.

9. LIGHTS

For endurance races conducted at night, the cars should carry a lights kit and the lights must be on throughout the nocturnal section of the race.

- The lights must be installed as in the original 1:1 car position.
- Front lights: a minimum of two lights in the appropriate colour, either yellow or white, and must shine with a continuous beam.
- Rear lights: a minimum of two lights, one compulsory on the left, color red, and shining with a continuous diffuse beam.

The lights must be in full working order when the car enters the enclosure, otherwise they must be repaired during racing time.

No such car will be allowed to start until this problem has been resolved.

It shall be understood that, during the race, lights will be considered to malfunction if fewer than 3 corners of the car are not lit for more than half a lap and thus must be repaired.

10. GENERAL OBSERVATIONS

Any points not covered by these Regulations are regarded as free and left to the discretion of the race technical marshalls.

In case of doubt, the final decision will be left to the director of the race.

 Registration for the race signifies the full acceptance of these rules and regulations by the driver. It is the sole responsibility of the driver to present his or her vehicle in the conditions stipulated in these regulations.

11. SUMMARY OF MEASUREMENTS AND WEIGHTS

Max width, front wheel	83.00 mm.				
Min width. front axle	5 mm less than width of wheel arch.				
Max width. Rear axle	83.00 mm				
Max width. chassis	78.00 mm				
Max. width body	85.00 mm				
Min ground clearance at start of race	1.2 mm				
Min ground clearance at end of race	0.4 mm				
FRONT WHEELS	D.min.rim	D.min.wheel	Min width. rim	Min width.wheel	Min. Surface contact.
	21.00 mm	26.00 mm	6 mm.		
REAR WHEELS	D.min.rim	D.min.wheel	D.max.wheel	Max width. rim	Max width.wheel
	21.00 mm	26.50 mm	27.50 mm	13.00 mm	
Min weight of body including bodyholders	20,00 gr.	Motor		SRP Speed35 short can and 35.000 rpm	
Min total weight of car at start of the race	165.00 gr.	Min total weight of car at end of the race		164.00 gr.	