2023 TECHNICAL REGULATIONS

Revision Date: 03/30/2023

Series:
IMSA WEATHERTECH SPORTSCAR CHAMPIONSHIP

Class:
LE MANS PROTOTYPE 3

Sanctioned by:
INTERNATIONAL MOTOR SPORTS ASSOCIATION
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Foreword:

For all Members, the IMSA RULES of the International Motor Sports Association establish the foundation for the organization and conduct of all IMSA Sanctioned Events. The IMSA RULES take effect immediately upon publication.

The purpose of the RULES is to: (i) promote safety, the sport of automobile Competition and IMSA, (ii) enhance Competition, (iii) ensure the quality, fairness and integrity of the IMSA programs and operations and (iv) achieve prompt finality in the Competition results (“Purpose”).

ALL MEMBERS ARE REQUIRED TO REVIEW THESE IMSA RULES CAREFULLY.

The IMSA RULES consist of following three (3) sections and the Event Supplementary Regulations (SR):

- The Technical Regulations, which outline the rules and regulations for the specific cars and equipment. The Technical Regulations may be modified or changed at any time by the publication of a Technical Bulletin, amending the Technical Regulations.

- The IMSA Sporting Regulations (ISR), which concern Competitor and Event procedures, as well as guidelines for the safe and uniform operation of the sport. The ISR may be modified or changed at any time by the publication of a Competition Bulletin, amending the ISR.

- The Series Supplementary Regulations (SSR) that provides Series-specific information about each IMSA Series. The SSR is integrated into the ISR and are designated with “(SSR)” next to the Paragraph title. The SSR may be modified or changed at any time by the publication of a Competition Bulletin, amending the SSR.

Any portion of the RULES may be modified though Bulletins (Competition Bulletins and Technical Bulletins, respectively) and takes force when published. Once published, the Bulletin shall take precedence over the applicable portion of the RULES. Additionally, the RULES may be modified for an Event by the Race Director through the mandatory briefing instructions.

HOW TO READ THE RULES

IMSA Technical Regulations follow a common philosophy across all Classes. The IMSA Technical Regulation philosophy can be summed in the following concepts:

- Cars are constructed and regulated to a controlled standard, the vehicle Homologation.
- Modifications to the Car are not permitted unless specifically stated in the applicable class’s Technical Regulations.
- The Car, at all times, must adhere to:
  - The current Homologation Document(s) and valid extension documents (e.g., EVO).
  - The Manufacturer’s or Constructor’s Parts Manual.
  - Manufacturer submitted and IMSA approved declarations (where applicable).
  - The IMSA Technical Regulations for the Class
- Normal adjustment of the Car is permitted as defined by the applicable Car’s Homologation and Class’s Technical Regulations.
- Repair of the Car, parts, and components is permitted, provided it serves no additional purpose other than the repair itself. All such repairs must meet all Constructor / Manufacturer specifications and regulatory requirements.

(cont.)
Modifications by an Entrant to parts, systems, and/or components of the Car is not permitted for any reason. An Entrant wishing to perform any modification(s) must present modification(s) to the applicable Manufacturer or Constructor for formal approval from the applicable Homologating Authority for the Class. Entrants are not permitted to work directly with a Homologating Authority(s).

Entrants must have a current copy of the applicable Homologation for their Car Model at all times, as well as full access to the Manufacturer’s / Constructor’s Part Manual. Both of these documents together clearly identify the compliant specification of the Car and will be used as reference materials for both the Entrant and IMSA. A copy of the Homologation may be provided by the applicable Manufacturer / Constructor or purchased from the Homologating Authority.

IMSA’s regulations work in conjunction with Homologation regulations from a Homologating Authority. This sometimes creates conflicts across the various regulation sets. Often the Homologating Authority has a combined set of Technical and Homologation regulations.

The hierarchy of these various regulations applies in descending order is as follows:

1. IMSA Class Technical Regulations and Bulletins
2. These IMSA Technical Regulations shall govern in any case where a conflict exists with the Homologation Regulations and Documentation.
3. Homologation Authority Technical Regulations and corresponding Homologation Form & Parts Book

**Example 1: Incorrect process**

A Team has found that a suspension part of the Car is prone to failure when going over large bumps. The Team chooses to resolve the problem on their own and modifies the part with components made in their own shop, which are not in the Homologation or Parts Manual of the Car. IMSA Technical Staff find this modification during a post-Race inspection. IMSA finds that the car is not in the approved configuration and the Entrant is penalized.

**Example 2: Correct process**

A Team suspects a part on the Car may be prone to failure during longer races. The Team therefore informs their Manufacturer or Constructor representative of their concern. The Manufacturer or Constructor agrees that a modification or redesign is appropriate and submits a written proposal with supporting documentation to the Homologating Authority for review. Upon approval the Homologation documents are updated and distributed for equitable customer awareness and part implementation.

**Homologation Authority for the Class:**

<table>
<thead>
<tr>
<th>Class</th>
<th>Homologating Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3</td>
<td>ACO</td>
</tr>
</tbody>
</table>
## EXECUTIVE LEADERSHIP MASTHEAD

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Bishop* / Bill France, Sr.*</td>
<td>Founders – IMSA</td>
</tr>
<tr>
<td>Dr. Don Panoz*</td>
<td>Legacy Vice Chairman</td>
</tr>
<tr>
<td>Jim France</td>
<td>Chairman</td>
</tr>
<tr>
<td>Lesa Kennedy</td>
<td>Director</td>
</tr>
<tr>
<td>Ed Bennett</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>John Doonan</td>
<td>President</td>
</tr>
<tr>
<td>Tracey Lesetar-Smith</td>
<td>Director and Legal Counsel</td>
</tr>
<tr>
<td>David Pettit</td>
<td>Senior Vice President, Marketing</td>
</tr>
<tr>
<td>Simon Hodgson</td>
<td>Vice President, Competition</td>
</tr>
<tr>
<td>Brandon Huddleston</td>
<td>Vice President, Partnership Marketing and Business Development</td>
</tr>
</tbody>
</table>

*Deceased
ARTICLE 1. DEFINITIONS SPECIFIC TO THE TECHNICAL REGULATIONS

1.1.1. Car means a singular representation of a Car Model, entered by an Entrant in an Event.

1.1.2. Car Model means a specific model of a vehicle constructed by an IMSA-recognized Manufacturer Partner, and intended for Competition.

1.1.3. Class means a category for Cars sharing a common set of Homologation Regulations and differentiated from others by type of Car Model.

1.1.4. Competition means a contest of competitive nature in which a Car takes part during an Event and results of which Competition are published.

1.1.5. Constructor means an entity that designs and builds race car chassis.

1.1.6. Entrant means an entity or person who has entered a Car that has been accepted for Competition and holds an IMSA Membership in the capacity of an Entrant or Entrant/Driver.

1.1.7. Event means an IMSA Sanctioned motorsport activity. It includes the designated Race as well as all periods for registration, inspections, practice Sessions, qualifying Sessions, racing, pre- and post-Race activities and inspections, and rain or postponed dates related thereto.

1.1.8. Homologate means to execute the Homologation Process.

1.1.9. Homologated means a Car Model approved through the Homologation Process.

1.1.10. Homologation means the concept of all things associated with Homologation Authority approval via the Homologation Process.

1.1.11. Homologation Authority means an entity with the authority to Homologate.

1.1.12. Homologation Documentation means all files, documents, information, and communication associated with the issuance of official approval of Homologation.

1.1.13. Homologation Identifier means the unique identifier (generally including a string of characters identifying the Category or Class of Homologation followed by a sequential number assigned to the Car Model) serving as a reference to the official approval of Homologation, assigned by the Homologation Authority.

1.1.14. Homologation Process means all procedures associated with petitioning a Homologation Authority for approval that a Car Model complies with the Homologation Regulations.

1.1.15. Homologation Regulations means a set of technical requirements and criteria used to design, construct, and document a Car Model intended for racing in a specific category or class of racing.

1.1.16. Manufacturer means a Manufacturer Partner constructing an approved Car Model.

1.1.17. Manufacturer Partner means a recognized IMSA Official Automotive Partner.

1.1.18. Specification means all technical characteristics of the Car Model defined by the Homologation and Technical Catalog.

1.1.19. Specific Homologation means the Homologation specific to a particular Car Model.

1.1.20. Technical Catalog means IMSA’s collection of data and documents supporting a Car Model.

1.1.21. Technically Eligible means conforms to all technical requirements and criteria defined by these Technical Regulations.
2.1. Technical Eligibility

2.1.1. Cars representing a Car Model must always respect the Specification.

2.1.2. To be eligible for participation in this Class, a Car Model must:
   a. Be a Car Model constructed by an IMSA-recognized Manufacturer Partner.
   b. Hold a valid Homologation, approved and issued by an IMSA-recognized Homologation Authority.

2.1.3. IMSA is the sole authority to define the Technical Eligibility of a Car Model and issue the Technical Credential.

2.2. Changes

2.2.1. Changes to the Specification are prohibited, unless explicitly authorized by IMSA.

2.2.2. Manufacturers alone are permitted to petition IMSA to change the Specification; requests by Entrants are not recognized.

2.3. Conflict Resolution

2.3.1. These IMSA Technical Regulations shall govern where a conflict exists with the Homologation Regulations and Documentation.

2.4. Final Authority

2.4.1. IMSA is the Final Authority with respect to these Technical Regulations.

2.5. Conditions for Use of a Specific Homologation

2.5.1. At all times during IMSA-sanctioned Events it is the Entrant’s responsibility to ensure the configuration of the Car Model represents the Homologation components of the Specification; including:
   a. As-Homologated Configuration
   b. As-Delivered Configuration
   c. Parts Manual
   d. Homologation Extension Form Configuration

2.5.2. The original, As-Homologated Configuration of the Car Model must not be modified unless permitted by these Technical Regulations.

2.5.3. The As-Delivered Configuration of a Car must respect the as-received configuration from the Car Model Manufacturer, unless permitted by these Technical Regulations.

2.5.4. The Parts Manual is the official parts catalogue for the Car Model as defined by the Car Model Manufacturer or Constructor:
   a. Specific parts listed in the Parts Manual must be used on all representations of a Car Model unless permitted by these Technical Regulations.

2.5.5. To be eligible for use in any IMSA-sanctioned Event, modifications detailed in Homologation Extension Forms must:
   a. Be approved by, or have initiated the process to obtain approval from, the Homologation Authority, and appended to the Car Model Homologation.
   b. Be approved by IMSA.
   c. Be available to all Entrants of the relevant Homologated Car for the next Event.
ARTICLE 3. TECHNICAL TESTING AND VERIFICATION

3.1. Reference Components

3.1.1. IMSA may request Manufacturers submit reference components, tooling, and/or templates to the IMSA Technical Department.

a. IMSA may retain these components without compensation.
b. Manufacturers are responsible for all costs as related to submitting reference components.
c. Fees may apply.

3.2. Technical Testing

3.2.1. Testing conducted by IMSA may be performed; including, but not limited to:

a. Restrictor Flow
b. Engine Dyno
c. Wind Tunnel
d. On-track Testing
e. Refueling Testing

3.2.2. Testing and associated costs are the responsibility of the applicable Manufacturer or Constructor.

ARTICLE 4. BALANCE OF PERFORMANCE

4.1. Balance of Performance

4.1.1. Not Applicable

ARTICLE 5. SAFETY

5.1. Driver Safety Harness System

5.1.1. As Homologated

5.1.2. Installation must be performed in accordance with instructions provided by the system supplier and/or manufacturer.

a. Belt components must be installed at each anchor point to prevent accidental release or opening.
b. Individual belt straps must be independent; any method or attempt to combine individual straps is prohibited.
c. Elastic retention straps are prohibited on shoulder belts.

5.1.3. Harnesses must be replaced at the request of IMSA, or whenever the following conditions occur:

a. Expiration:
   i. FIA Homologated: Immediately following December 31st of the year printed on the label.
   ii. SFI Certified: Immediately following December 31st two (2) years after the year of Manufacture.
b. Damage:
   i. Following a severe collision.
   ii. Webbing is cut or frayed or weakened due to actions of chemicals or sunlight.
   iii. Buckles are bent, deformed, rusted, or improperly functioning.

5.1.4. Entrants are responsible for ensuring the Driver safety harnesses and all associated components are properly labeled, installed, used, and maintained.

5.2. Seat

5.2.1. As Homologated.
5.3. Driver Containment Nets
5.3.1. Not Applicable

5.4. Protective Padding
5.4.1. Cars must be equipped with non-flammable protective padding with a valid label demonstrating compliance with one of the following standards:
   a. FIA Standard 8857-2001: FIA Roll Cage Padding Standard
      i. FIA Technical List #23: Roll Cage Padding Homologated by the FIA
   b. SFI Specification 45.1: Roll Cage Padding
      i. Specification
      ii. Manufacturers

5.4.2. Installation requirements:
   a. Padding must be located to protect the Driver (body and/or helmet) against direct contact with the safety cage in a collision.
   b. Protective padding must be securely affixed to prevent rolling or displacement.

5.5. Protective Shielding
5.5.1. As Homologated

5.6. Master Electrical Switches
5.6.1. As Homologated
5.6.2. Interior and exterior master switches must be clearly identified by a self-reflective symbol of a red spark surrounded by a white-edged, blue triangle with a base greater than 30 mm.

5.7. Fire Suppression System
5.7.1. As Homologated
5.7.2. Identification
   a. Exterior activation mechanism must be marked with a self-reflective symbol with a red edge surrounding a red “E” inside a white circle at least 100 mm in diameter.
5.7.3. Inspection
   a. IMSA may require removal of the fire bottle for Technical Inspection.
   b. Entrant is responsible to demonstrate proper system function of the interior and exterior fire suppression activation mechanisms, using the “test” mode if present.

ARTICLE 6. DEFINITION OF CLASS

6.1. LMP3
6.1.1. Class Structure: 2020 and newer LMP3 cars compete in the P3 Class of the IMSA WEATHERTECH SPORTSCAR CHAMPIONSHIP (IWSC).
6.1.2. Eligibility Requirements: To be eligible for participation in the Class, a Car Model must respect the Specification defined by the Homologation and Technical Eligibility requirements:
   a. Homologation (LMP3):

<table>
<thead>
<tr>
<th>Homologation Authority:</th>
<th>Automobile Club de l’Ouest (ACO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homologation Specification:</td>
<td>Automobile Club de l’Ouest (ACO) LMP3</td>
</tr>
<tr>
<td>Homologation Regulations:</td>
<td>[2023 Technical Regulations for LMP3 Prototypes (v 1.7)]</td>
</tr>
</tbody>
</table>
ARTICLE 7. VEHICLE SYSTEMS

7.1. General

7.1.1. All Vehicle Systems and associated sub-systems are listed in this Article.

   a. Where change to the Homologated Vehicle Systems is permitted, regulatory text is **bold and underlined**.
   b. Where change to the Homologated Vehicle Systems is prohibited, regulatory text is **light grey**.
   c. Advisory statements are in normal text.

7.2. Modifications to the Specification

7.2.1. Entrants are permitted to execute the following changes to parameters defined by the Homologation component of the Car Model Specification, provided these Technical Regulations, all current Technical Bulletins, and the Technical Credential are fully respected:

   a. Adjust component settings defined as adjustable.
   b. Replace components with parts defined as optional.

7.2.2. Manufacturers must make any declarations listed in these Technical Regulations in the Technical Eligibility Form.

7.2.3. Further authorization to modify the Specification and/or As-Delivered Condition is granted via the following formal communication methods:

   a. Published IMSA Technical Bulletin
   b. IMSA Technical Committee Bulletin

7.2.4. Informal and/or verbal communication is not considered valid authorization.

7.3. Servicing, Repair, and Replacement

7.3.1. All servicing or repair must be made in good faith to restore the Car and all components to their originally intended form and function as defined by the Specification.

7.3.2. Entrants are permitted to replace damaged or worn components provided these Technical Regulations are respected.

7.4. Dimensions

7.4.1. General

   a. IMSA's calibrated measurement instruments are the official measurement instruments.

7.4.2. Reference Surface

   a. The lowest plane of the underside of the car of the Car is measured to the Technical Inspection scale plane.

7.4.3. Mass

   a. The minimum mass for all Car Models is 950 kg.
   b. Car mass is measured as-raced minus Driver and Fuel using the IMSA scales during Technical Inspection.

7.4.4. Ballast

   a. **Entrants are permitted to add or remove ballast to achieve minimum mass:**
      i. Ballast must be in plate or panel form.
      ii. Addition or removal of ballast during the race is prohibited.

7.4.5. Ground Clearance

7.4.6. Overall Dimensions

7.5. Chassis

7.5.1. General

   a. **Entrants are permitted to execute minimum modifications for the installation of components.**
      i. All modifications must be approved by IMSA.

7.5.2. Air Jack System
7.6. Driver Interface

7.6.1. General
7.6.2. Steering Wheel
7.6.3. Pedal Box
   a. **Entrants are permitted to apply non-slip adhesives to the surface of driver pedals.**
7.6.4. Shifting Mechanism
7.6.5. Driver Adjustable Components
7.6.6. Driver Cooling Systems

7.7. Bodywork

7.7.1. General
   a. **The following films are permitted to be added to the front windscreen:**
      i. Tear-off
      ii. Anti-fog
7.7.2. Bodywork Seams
   a. **Entrants are permitted to apply tape or vinyl around refueling receptacle seams and/or rear wing end fence adjustment holes.**
7.7.3. Decals
   a. **Entrants are permitted to apply removable die cut sponsorship decals with the approval of IMSA.**
   b. Windows must remain free of decals and/or tint unless required by IMSA

7.8. Aerodynamic Elements

7.8.1. General
7.8.2. Splitter
7.8.3. Dive Planes
7.8.4. Body Gurney
7.8.5. Wings
7.8.6. Rear Wing Gurney
7.8.7. Floor
7.8.8. Friction Blocks
   a. Skid and/or plank wear must not exceed the maximum permitted wear per the base regulations in any Session.
7.8.9. Diffuser

7.9. Engine System

7.9.1. General
   a. Manufacturer seals must be respected
7.9.2. Engine
   a. Entrants are permitted to utilize ignition lead heat shielding per the Oreca bulletin for Events with Races of over 3 hours.
   b. The permitted engine is the Oreca VK56.
7.9.3. Oiling System
   a. Approved lubricants are permitted to be utilized.
7.9.4. Lambda
7.9.5. Engine RPM
7.9.6. Intake
7.9.7. Exhaust
   a. Entrants are permitted to utilize Zircotec coating per Oreca bulletin for Events with Races of over 3 hours.
7.9.8. Turbo
7.9.9. Engine Control Unit (ECU)
7.9.10. Engine Transportation Crate
   a. Entrant must have immediately available a crate sufficient to securely and safely package and ship an engine.

7.10. Boost Management
7.10.1. Maximum Boost Pressure
7.10.2. Boost Pressure Ratio
7.10.3. Boost Control Strategy Inputs
7.10.4. Calculation Method

7.11. Drive System
7.11.1. General
   a. Manufacturer seals must be respected
7.11.2. Fluids & Lubricants
   a. Unrestricted.
7.11.3. Clutch
   a. Entrants are permitted to utilize the Oreca VK56/VK50+ Clutch Evo Kit.
7.11.4. Gearbox
7.11.5. Gears
7.11.6. Gearbox Control Unit
7.11.7. Differential
7.11.8. Axles
7.11.9. Uprights

7.12. Cooling System
7.12.1. General
7.12.2. Fluids
   a. Entrants are permitted to utilize the following approved cooling fluids:
      i. Water
      ii. Air
      iii. Non-glycol based fluids
7.12.3. Inlet Blockers
7.12.4. Water System
7.12.5. Oil Cooling System

7.13. Fuel System
7.13.1. General
a. Maximum Capacity
   i. The maximum fuel system capacity for all cars is 100 liters.
   ii. The maximum fuel capacity is the total volume of fuel contained in the Car.

7.13.2. Fuel Types
a. The approved fuel for the Class is IMSA E10, as supplied by VP Fuels.
   i. IMSA may require a fuel sample for inspection via a gas chromatograph.

7.13.3. Fuel Cell
a. [**Entrants must use blocks or balls to achieve maximum fuel system capacity**]
   i. Any device, system, or procedure to increase, even temporarily, the total fuel storage capacity beyond the maximum is prohibited.

7.13.4. Fuel Lines
7.13.5. Fuel Sample Port
7.13.6. Refueling Receptacle

7.14. Brake System
7.14.1. General
7.14.2. Fluids & Lubricants
   a. [**Unrestricted**].
7.14.3. Bias Assembly
7.14.4. Master Cylinders
7.14.5. Brake Lines
7.14.6. Calipers
7.14.7. Rotors
7.14.8. Pads
7.14.9. Ducting
7.14.10. Brake Duct Inlet Blockers
   a. [**Entrants are permitted to utilize the following approved methods for the sole purpose of blocking off portions of the brake duct inlet openings:**]
      i. Opaque adhesive tape.
7.14.11. Anti-Lock Braking System

7.15. Steering System
7.15.1. General
7.15.2. Fluids & Lubricants
   a. [**Unrestricted**].

7.16. Suspension System
7.16.1. General
7.16.2. Geometry Elements
7.16.3. Springs
   a. [**Entrants are permitted to change primary spring rates:**]
      i. The As-delivered number of springs per wheel must be respected.
7.16.4. Dampers
   a. Dampers must be utilized with valving and internals as per the applicable Constructor’s IMSA Technical Credential.
   b. Dampers must be used with intact seals.
   c. Dampers must be unmodified from the approved rebuilding and sealing vendor. The approved rebuilding and sealing vendor is:

<table>
<thead>
<tr>
<th>Chassis Constructor</th>
<th>Damper</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ligier, Duqueine,</td>
<td>Ohlins</td>
<td>Ohlins North America</td>
</tr>
<tr>
<td>Ginetta, Adess</td>
<td></td>
<td>Attn: LMP3 Service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>703 Grove Street</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hendersonville, NC 28792</td>
</tr>
</tbody>
</table>

   d. Entrant is responsible for all costs associated with the sealing program, including seals, inspections, labor, shipping, and handling.
      i. Entrant is responsible for shipping to the approved rebuilding vendor with adequate time for the vendor to perform the required service.
   e. Dampers must be identified with car number when in use and when being sealed.

7.16.5. Bump Rubbers and Packers
   a. **Unrestricted.**

7.16.6. Anti-Roll Bar

7.16.7. Third Elements

7.17. Wheels & Tires

7.17.1. General

7.17.2. Wheels

7.17.3. Wheel Attachment

7.17.4. Tires
   a. The approved tire supplier for this Class is Michelin.
   b. Tires must be used in accordance with SSR Attachment 3.

7.18. Electronics

7.18.1. General
   a. Installation of spotter and interior lighting must utilize the spare wiring loom connection port as provided by the Constructor and must not void the homologation of the Car or any component.
      i. Installations are subject to IMSA approval.
   b. Driving Camera
      i. **Entrants are permitted to install a “Connected” camera system mounted per the applicable Car Model’s Homologation.**
      ii. Entrants are permitted to install a stand-alone camera as a substitute to the “Connected” camera system.
         (i) Stand-alone camera must be installed in the Homologated location.
   c. Lap Timer
      i. **Entrants are permitted to install a lap timer.**
      ii. Lap timer must be mounted per the applicable Car Model’s Homologation.
d. Pitlane Timer
   i. **Entrants are permitted to install a pitlane timer.**
      ii. Pitlane timer must be mounted in the space defined for the lap timer in the applicable Car Model’s Homologation.

e. GPS Antenna
   i. If any permitted equipment uses a GPS antenna, the antenna must be mounted no less than 75 cm away from the mandatory GPS antenna.

7.18.2. Data Logger
   a. IMSA reserves the right to download and/or view all logged data at any time.
   b. Any such equipment must be correctly mounted and in place for pre-event scrutineering.
   c. Any electronic device liable to interfere with the proper function of the on-board electronics (included but not limited to ECU, Data logger, ADR, GPS antenna) is forbidden.
   d. IMSA may at any time ask for removal of any electronic equipment if it is deemed to pose a safety problem or if it interferes with the mandatory electronic equipment.

7.18.3. Telemetry

7.18.4. Wiring Loom

7.18.5. Sensors

7.18.6. Radio
   a. **Entrants are permitted to install one (1) primary, and one (1) secondary, two-way voice communication radio with car-to-pit communication capability:**
      i. Radio(s) must comply with Series Sporting Regulations.
      ii. Secondary radio must not transmit or receive signals while primary radio is functional.

7.18.7. Rear View Camera

7.18.8. Tire Pressure Monitoring System (TPMS)
   a. **Entrants are permitted to install a Tire Pressure Monitoring System (TPMS).**
      i. The homologated mounting position(s) must be respected.

ARTICLE 8. SERIES REQUIRED ELECTRONICS

8.1. General
   8.1.1. All Series required electronics must be installed per the applicable Homologation and/or Declaration.
   8.1.2. Entrant is responsible for the operation, maintenance, and care of Series required electronics.

8.2. Series Scrutineering Data System
   8.2.1. Cars must be equipped with an IMSA-supplied data logger when requested.
      a. Cars must have a dedicated 12 V power lead to install the IMSA-supplied data logger.
      b. Power lead shall remain on as long as the master kill is switch is on.
8.3. Safety Light System

8.3.1. Cars must be equipped with an approved Yellow Light Kit to indicate active flag status, purchased from the approved supplier. System options as follows:

a. Option #1 - Standalone MSE

<table>
<thead>
<tr>
<th>MSE Safety Light Receiver</th>
<th>Creative Motorsports Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSE Safety Light Kit</td>
<td></td>
</tr>
</tbody>
</table>

i. The Kit contains the following components:
   (i) Safety Light Receiver
   (ii) Yellow Indicator Light
   (iii) Antenna
   (iv) Wiring Loom and Instructions

b. Option #2 - XAP NTX Marshalling Display

<table>
<thead>
<tr>
<th>XAP NTX Marshalling Display</th>
<th>Creative Motorsports Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSE Antenna Kit</td>
<td></td>
</tr>
<tr>
<td>MSE Safety Light Receiver</td>
<td></td>
</tr>
</tbody>
</table>

i. Another option for track condition, which also serves dual purpose for Driver ID.

8.3.2. The Safety Light system must be installed and functioning during on-track activity.

a. The Yellow Indicator Light must be prominently installed within the cockpit, in clear line of sight of the driver.

b. Antenna Installation: The supplied antenna must be mounted:
   i. On the Car roof
   ii. A minimum of 150 mm away from other antennae
   iii. Following the diagram below (a ground plane is not required):

   ![Diagram of antenna installation](image)

c. Wiring Loom Installation: The Wiring Loom has a flying lead input for +12 VDC and Ground to interface with additional wiring referenced in the installation instructions.
   i. Entrants must supply additional wiring as required.
8.4. Driver ID System

8.4.1. Cars must be equipped with an approved Driver ID system:
   a. MoTeC Driver ID Module # RG OTC
      i. Available for purchase through MoTeC.
      ii. Can be used interchangeably with XAP Leader Lights but must utilize MSE Safety Light Indicator.
   b. XAP NTX Marshalling Display
      i. Available for purchase from Creative Motorsports Solutions.
      ii. Must be used exclusively with the XAP Leader Lights.

8.4.2. Minimum loom/harness ordering window is 8 weeks. Expedited fees may apply if ordering window is not respected.

8.4.3. Entrant must supply Driver ID Plugs

8.4.4. Female Driver ID plug(s), (i.e. Driver #1 through Driver #5) may be installed inside the Car cockpit or attached to the individual Drivers’ helmets.
   a. Alternative installations must be approved by IMSA.

8.4.5. Transponder and plugs must operate to the satisfaction of the Timing and Scoring Officials.

8.5. X2 Transponder System

8.5.1. Cars must be equipped with the X2 Transponder System Kit.
   a. X2 Transponder Kit contains the following component(s):
      i. Transponder.
      ii. Isolation Mounts.

8.5.2. X2 transponder must be purchased via the IMSA Accessories Order Form.

8.5.3. The transponder must be installed in the same location as the applicable Constructor has determined in the Scrutineering Homologation Document.

8.5.4. Transponder must be mounted using the mounting bracket with appropriate thermal protection in an area where the temperature cannot exceed 50 ºC

8.6. Leader Light System

8.6.1. Cars must be equipped with approved LED leader light panels from one manufacturer as follows. Components from different manufacturers cannot be intermixed.

<table>
<thead>
<tr>
<th>Constructor</th>
<th>Leader Light Panel (qty 2)</th>
<th>Driver ID Module</th>
<th>CAN Isolation Module (qty 2)</th>
<th>Main Loom</th>
<th>Rear Loom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ligier</td>
<td>PV0091.04</td>
<td>PV0176.03</td>
<td>PV0265</td>
<td>3800-DI033A</td>
<td>3800-DI034A</td>
</tr>
<tr>
<td>Duqueine</td>
<td>PV0091.04</td>
<td>PV0176.03</td>
<td>PV0265</td>
<td>3800-DI039A</td>
<td>3800-DI040A</td>
</tr>
<tr>
<td>Ginetta</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
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<tr>
<td>Adess</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>

b. XAP
   i. XAP Leader Light System # LPP-130

8.6.2. Minimum loom/harness ordering window is 8 weeks. Expedited fees may apply if ordering window is not respected.

8.6.3. Leader light system must be installed and functioning during Events.
8.6.4. Cars using MoTeC leader lights must utilize MoTeC USA CAN Isolation Module #PV0265
   a. 1 CAN Isolation Module is required per panel
   c. Ambient temperatures in installation location must not exceed 70 degrees C.
   d. Firmware version 1.04 or newer is required

8.7. Back-lit Panel
   8.7.1. Cars must be equipped with white light-emitting side number panels for Races taking place partly by night.
      a. Colored background must be cut out in the number shapes so they are illuminated during the night.
      b. White light-emitting side number panels are supplied by Entrants.

8.8. Pro-Am Light
   8.8.1. Cars must be equipped with a Pro-Am light per the Car Model’s Scrutineering Homologation document.
   8.8.2. Pro Am light must be powered on at all times when the car is participating in on-track activity.

8.9. Rain Light

8.10. In-Car Camera
   8.10.1. See SSR 15 and SSR 16.

8.11. Incident Data Recorder
   8.11.1. Entrants must utilize the FIA Impact Data Recorder (IDR)
      a. Must be installed in the Constructor defined location and consistent with Manufacturer orientation requirements.
      b. IDR must be installed and functional for all on-track activity.
      c. IMSA provides the IDR to the Entrant.
      d. Data collected by the IDR is property of IMSA.
      e. IDR must be surrendered upon request by IMSA.

ARTICLE 9. REFUELING SYSTEM

9.1. Fuel Transfer
   9.1.1. Fuel must be transferred from the autonomous supply tank to the Car using the equipment and methods defined in this Article.
      a. Approved equipment as defined herein must be:
         i. Unmodified.
         ii. Installed and operational.
      b. Approved method:
         i. Gravity.
   9.1.2. Fuel transferred to the autonomous supply tank must be delivered by means of a hose fitted with a self-sealing connector (e.g. dry break, cam-lock) connected to the autonomous supply tank.
   9.1.3. The minimum full refueling time for the LMP3 class is 40 seconds.

9.2. Pit Tank
   9.2.1. Construction of the Autonomous Supply Tank must:
      a. Comply with FIA Appendix J Drawing n° 252-7 with the exception of the top plate shape and dimensions.
      b. Not have sensors other than as required by IMSA.
9.2.2.  The maximum permitted refueling tank height is 2.2 meters as measured from the top surface of the vessel (not including vent, cover plate or fasteners) at a distance of 1.25 meters from the outermost face of the pit wall.

9.3.  Peripheral Connections

9.3.1.  Tanks must be equipped with the IMSA-specified peripheral connections between the tank outlet and the refueling hose.

9.3.2.  Parts must be purchased from RPXpress and used unmodified:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATL-TF 147</td>
<td>12-Bolt Gasket</td>
</tr>
<tr>
<td>BSR.FR.1981.1</td>
<td>Bottom Elbow 67.12° Female Camlock x Male 2&quot; (Red)</td>
</tr>
<tr>
<td>BSR-FR R003</td>
<td>Deadman Valve</td>
</tr>
<tr>
<td>BSR.P.5K66.SS</td>
<td>Restrictor Housing Deadman Outlet, 2&quot; Male to 1 ½&quot; Camlock</td>
</tr>
<tr>
<td>BSR.P.5K.RPX.SS</td>
<td>Hose Coupler Connects 1.5” I.D. hose to Restrictor Housing</td>
</tr>
</tbody>
</table>

9.3.3.  Details and purchasing of the of the Sentronics RigFlow Sensor can be found in Article 11.8

a.  Sensor must be oriented such that the face plate is directed toward the hot pit lane.
9.3.4. Deadman valve and bottom 80 deg. elbow assembly must be securely braced to remain attached to the tank in the event of an incident.
   a. Mechanisms preventing normal operation of the deadman valve are prohibited.
   b. Any configuration of the IMSA-mandated design intended to decrease the minimum refueling time below the minimum full refueling time is prohibited.

9.3.5. During refueling the air vent outlet must be connected using an appropriate coupling to the tank.

9.3.6. A sight glass is permitted to be installed to the outside of the supply tank, and must be equipped with isolating valves mounted as close as possible to the tank.

9.4. Refueling Hose

9.4.1. Refueling/vent hoses must have one end equipped with a self-sealing connector to fit the autonomous supply tank outlet.

9.4.2. Refueling/vent hoses are permitted to be protected for the sole purpose of resisting abrasion damage.
   a. Cover must be easily removable by means of full-length Velcro® or zipper.

9.4.3. Hose maximum inside diameter:
   a. Dual-Port systems must be less than 1.5 inches for all hoses.
   b. Single-Port (coaxial) systems must be less than 1.5 inches for Refueling Hose and less than 75.0 mm for the vent hose.

9.5. Autonomous Tank Support Stand

9.5.1. The tank must be attached to one of the following:
   a. Through a tower, to a trolley meeting the following requirements:
      i. Have a surface area greater than two (2) square meters.
      ii. Utilize four (4) self-braking casters.
      iii. Be ballasted with weight exceeding that of the tank when filled with fuel.
   b. Scissor style (X-brace) stand

9.5.2. Trolley is permitted to have load sensors for the sole purpose of weighing fuel in the Autonomous Tank.

9.6. Boom

9.6.1. Entrants are permitted to attach a member (boom) to the trolley.
   a. Boom must be independent of the tank and the tower.
      i. Boom member must be permitted a degree of freedom in relation to the trolley (rotation following a vertical axis).
   b. Boom is permitted to support:
      i. Hose for a Car utilizing an approved offset vent or fuel filler.
      ii. Lighting for the illumination of the pit stop.
      iii. Download cable.

9.6.2. Boom must be identified with the Car number fixed to its outboard end, that must be:
   a. Visible from either direction
   b. A minimum of seven (7) inches high with a 1.25-inch stroke

9.6.3. Boom must respect the following dimensions:
   a. Must not exceed four (4) meters in length
   b. Must permit free passage of a height of two (2) meters over its entire length including hoses and/or accessories.
9.7. **Refueling Restrictor**

9.7.1. During refueling, all fuel entering the Car must pass through the refueling restrictor.

9.7.2. Refueling Restrictor must meet the following criteria:

   a. Material must be an aluminum alloy.
   b. Must comply with the IMSA Fuel Restrictor Part Drawing at the end of these Technical Regulations.
   c. Restrictor size varies from 22.0 mm to 35.0 mm by discrete increments 0.25 mm
   d. Bore tolerance (+0.00 mm / -0.05 mm)

9.7.3. IMSA may adjust the refueling rig height and the minimum refueling time listed via Technical Bulletin.

   a. Refueling restrictors may be purchased from RPXpress (Phone: +1-828-428-0820 Email: lmcelwain@rpxpress.com).
   b. IMSA utilizes the following scrutineering inspection methods to check minimum refueling times:
      i. Calibrated autonomous tank sensor system.
      ii. Calibrated vehicle fuel flow sensors.

9.8. **Autonomous Tank Sensor System**

9.8.1. Autonomous fuel supply tanks must be equipped with a Sentronics RigFlow autonomous tank fuel flow meter and wiring loom.

   a. Flow sensor part number (HI-250-01).
   b. Wiring harness part number (CMS2021-1487).
   c. The fuel flow sensor kit and wiring loom must be purchased from an authorized Sentronics dealer
      i. Sensors packages are serialized, and assigned to a Car and Pit Tank.
   d. Sensors packages must remain exclusive to the assigned Car and Pit Tank throughout the Event in which the sensor is declared.

9.8.2. Wiring loom connects the sensor package to a dedicated port on the IMSA pit-lane network box.

   a. Wiring loom must be IMSA certified and unmodified.

9.8.3. Entrant must ensure the flow sensor system is functional.

   a. Two hours before 1st Practice Entrant must connect the loom to a specific pit-lane network box designated by IMSA.
   b. Loom must remain connected until the conclusion of the Event
   c. Entrant must remove the loom at the conclusion of the Event.
   d. Flow Sensor must be installed in the location and orientation as indicated in Article 9.3.

9.8.4. Wiring loom connects the sensor package to a dedicated port on the IMSA pit-lane network box.

   a. Wiring loom must be IMSA certified and unmodified
   b. Wiring loom installation must remain visible and traceable
   c. Wiring loom part number (CMS2021-1487) must be used to connected directly to the flow sensor and directly to the pit-lane network.
HOLE SIZE VARIES
22.0 to 35.0 BY DISCRETE INCREMENTS OF 0.25
BORE TOLERANCE (+0.00 / -0.05)

SECTION A-A