

INTERNATIONAL FEDERATION OF MODEL AUTO RACING



IFMAR 1/8th I.C. Powered 4WD GT TRACK RACING AND TECHNICAL RULES



First Version February 25th, 2017.

Amended March 12th, 2017.

Technical rules: IC Powered 1/8th Class 4WD GT.

To be read in conjunction with the General Rules for IFMAR World Championships.

This set of rules for this class will consist of 5 parts:

- 1) Technical rules, describing the cars measurements, weight and technical features
- 2) Motor rules, specifying motor volume and internal specs.
- 3) Body rules, including GBS specifications
- 4) Race format, specifying race rules, controlled fuel and tires
- 5) General rules, dealing with organizing, detailed schedules, explanations

This is the first DRAFT and not yet FINAL.

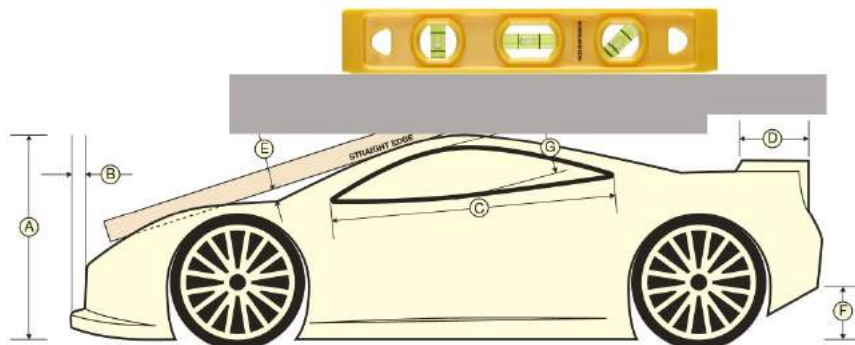
We introduced GBS (Global Body Specs), but we realize that a number of bodies will not be according to these measurements now. Depending on our investigations **and the feedback of manufacturers we will change some of the measurements**, however some of you will need to adapt some of your bodies to keep them within those new specs. At least with GBS now in the rules we trust that new bodies will be more in line with those measurements. 2017 and the World Cup in Buenos Aires end of this year will be a year to learn and to see where we need to change some of our rules.

Currently there are a number of small rules for the engines. We want to control the RPM/running time, so we have made a rule for maximum exhaust port timing. However the 160 degrees mentioned is not yet firm and fixed. Perhaps it will be larger at the end. We need to investigate engines and we need to look for a tool to easily measure this rule.

As for height of the spoiler we are not sure for the moment. For Buenos Aires we will allow 10 mm above the rooftop (see drawing for measurement).

The use of an INS box is mandatory, but we realize that on most engines this could be a problem with trying to mount this box straight on the carburettor. An extra piece is allowed, either straight or with an angle.

All measurements/text in **GREEN** is still under investigation and not fixed yet.

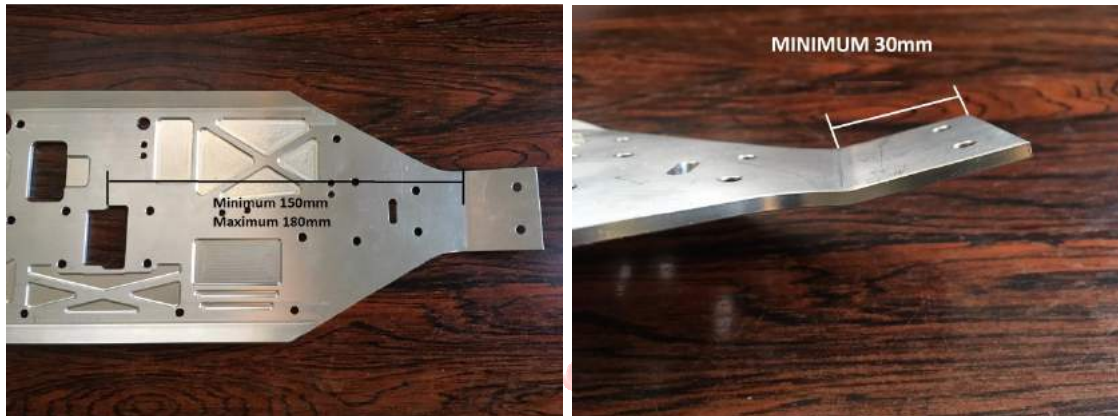


Technical rules:

The basic principle for this class is the use of off-road cars and/or off-road parts, although we cannot prohibit the use of a single designed car for GT in the future.

The chassis must have a minimum kick-off of 5 degrees in front. No carbon fibre chassis allowed

The kick-off needs to have a minimum length of 30mm and lower suspension arms must be mounted on the kick-off. (drawing with minimum length specs, Kick off must start at a reference point from the front diff, min 150mm/max 180mm).



Drive shafts must be used all around.

Brake System: Maximum 2 brake system in Central Drive Shaft / Central braking only on crown wheel (spur gear). Only standard mechanical brakes are permitted. Up to two brake discs are permitted anywhere on the centre driveshaft's. Brakes may not be located on the outboard axles.

One-ways, spools, locking "Torsion-type," or externally adjustable differentials are not permitted. Front & Rear geared Differentials can only be tuned with the use of silicone-based oils. No center differential allowed. Ball differentials not allowed/only gear differentials. Front and Rear differential gear ratios must be identical. Front or rear underdrive or overdrive is not permitted.

The final drive ratio front and rear must be the same.

Overall dimensions:

Height: max 175mm, with chassis plate on the ground

Minimum height 155mm with chassis plate on 20mm blocks.

Wheel base between 320-379mm

Length Maximum: 590mm

Width max 310mm, including wheels

The front of the car must be equipped with a bumper made from flexible material with all corners and edges rounded off. The contour of the bumper will follow the contour of the body. The bumper may not protrude in front of the body

The maximum capacity for the fuel tank is 150cc max, including all internal tubing

The Clutch must be a centrifugal type with maximum 4 shoes. No axial engagement or moving parts (No "Centax" Type).

Direct Drive, i.e. single speed or maximum two speed gear box

Minimum weight in order to run with empty tank is 3500 grams.

1) Engine rules:

Engines allowed will be .21 or 3.5cc engines.

Maximum carburettor diameter is 7mm.

The motor shall be air cooled. Conical plugs allowed

Number of Ports. For IFMAR World Championships we propose the following number of ports:

3 Outlet ports, consisting of 1 (one) main Outlet port and 2 outlet booster ports, regardless the name and dimensions, every hole is to be considered as one of the 3 allowed. **Maximum exhaust opening allowed will be 160 degrees.**

A maximum of 5 inlet ports or booster ports. Any hole will be considered as one of the 5 allowed. The INS box is mandatory.

Engines must be capable of running minimum 7 minutes on one tank of 150cc fuel to avoid excessive tuning.

Approved / registered or homologated 3 chamber mufflers according to the IFMAR list, including INS box list.

2) Body rules:

Bodies must be commercially available 1/8th scale GT1, GT2, Super GT, DTM, or V8 Supercar cars. 2 door GT bodies

At least a body with a separate wing like in touring cars. **Height of wing must not be higher as rooftop.** Measurement taken with chassis plate on the ground. The roof cannot be designed in such a way that ribs or vins are used to manipulate the height. Maximum width body 315-318mm. **(The alternative for wing height could be a fixed height like with 1/8th prototype, with 170mm on 20mm blocks or a difference of 10mm above rooftop, see drawing)**

Wing height compared to body and wing overhang, same as sedan 1/10th class, max 10mm.

Wing width max 310 mm.

Wing chord max 79 mm

The body must have visible windows, body panel and trim markings, and the windows must be mostly clear. Some intrusion for creative painting purposes and tinting is permitted, but the windows must be transparent. Bodies must have headlight and grill details.

1 piece body moulding to avoid internal aerodynamics. A diffuser mounted on the rear of the chassis is allowed as long as it stays inside the body.

No internal body supports / stiffeners / braces allowed to avoid lightweight bodies with internal modifications and add-ons, excluding reinforcement of the wheel arches and back boot lit is allowed. The body must rest on a maximum of 5 posts. Bodies must be made from Lexan with a minimum thickness of 1mm. The wing must rest on maximum 3 body posts which are not wider as 30mm each.

The body must be made from an existing car design, for which the name must be mentioned on the request for homologation. After been approved the name of the body is free to avoid license fees etc. After been approved the name of the body is free to avoid license fees etc. Bodies must be within the GBS dimensions by IFMAR. See drawing enclosed.

Holes in the body for fuel-gun, fuel tank opener, aerial, glow-plug and carburettor access. Rear and side windows may be removed. Maximum height of 70mm cut-out at rear on 20mm blocks. One opening may be made in the front windscreen/roof/bonnet with a maximum dimension of 80.0mm in any direction for refuelling and engine cooling. Holes in the body may not be combined. Minimum distance between holes is 5mm.

3) Race format:

7 Days total. Start Sunday, finished Saturday.

Sunday, IPD, 1 day

Monday, General practice for all for 1 day.

Tuesday, Timed practice for all 1 day + opening ceremony

Wednesday/Thursday, 2 Days of Qualifying, heats 7/14 minutes duration, no refuelling.

For 150 drivers, 15 heats. Start R1 0800-1100, R2 1100-1400, R3 1430-1730.

Friday/Saturday, Christmas tree finals, 2 Days for the finals

Point system in use for seeding the heats after timed practice.

Point system in use for Qualifying.

Depending on track layout 10 or 12 drivers in the final

Controlled fuel in use, maximum 3 brands (Ifmar shall open a bidding pool for manufacturers to bid for sponsoring)

Controlled tires in use, 1 brand (Ifmar shall open a bidding pool for manufacturers to bid for sponsoring)

TIRES

Controlled tires for all Ifmar events for GT class.

Tires for front and rear are the same dimensions.

Tires must be limited per driver for practice and race with only 1 extra set for the main final.

Tires must therefore be impounded, 1 box per driver.

Holes in the rubber tires are allowed, so as the rim. Will be better for temperature.

No additives on the tires allowed under any circumstances.

Tires diameter

Tires width, max 45mm

Rim measurement, spoke design. No dish like rims.

Rim Off set / Std (**Rim Drawing required**) because the use of controlled tires.

The rims must have a minimum 75mm and maximum 85mm diameter.

The minimum diameter of a tire must have at any point in the race will be 85mm and maximum is 110mm.

Wheels must use a 17mm hex hub consistent with the dimensions and function of the hubs used in 1/8 off road racing. The wheel must be affixed by a 17mm wheel nut, threaded on to the hex hub. Quick change mechanisms are not permitted.

Tire Rubber Only, no Foam tires allowed

Number of tires for an IFMAR event must be specified and will depend on track layout and tire wear.

F.i. 1 sets for Practice, 2 sets for Qualifying, 1 set extra for subfinals, 1 set extra for main final. All used tires available for substitution. Tires will be marked with the drivers registration number.

FUEL

Controlled fuel will be used for all official racing starting with timed practice on the Tuesday. Maximum nitro content will be 16% in volume, with an SG of 0.87. The aim is to have the fuel sponsored by a maximum of 3 brands. In case no manufacturer is willing to sponsor the event with fuel, 3 fuel brands will be nominated together with the organizer which will be available at the track. In such a case the entry fee will be adapted with a fee for the fuel.

Prohibited / not allowed:

Use of one way bearings, except for the 1st gear of a 2-speed transmission.

Belts.

Centax type clutches.

Extra Body support struts for lightweight bodies.

The use of traction control devices, active suspension devices and any steering control aided by gyroscopes/"G"-force sensors is strictly forbidden.

4 wheel brakes. Independent controlled braking on the front wheels is not allowed.

Hydraulic braking systems.

More than 2-speed transmissions.

Quick change wheel systems are not allowed, or the use of electric, spring or flywheel based tools to change wheels.

Body extenders or wheel flares .

It is not allowed to use any electronic devices with the exception of:

Two radio channels of the receiver which will be used to operate steering, throttle and brakes.

No more than two (2) servos.

A transponder for official counting.

An electronic failsafe.

Voltage regulator and/or battery level indicator.

Tire-warmers

4) General rules for organizing IC powered 1/8th Gt Class.

IC powered 1/8th Class GT will be run during even years, in the same year as 1/10th IC track.

Depending on the number of drivers we have the following schedules

Places will be initially allocated as follows:			
Entries	100	150	180
EFRA	20	30	35
FAMAR	20	30	35
FEMCA	20	30	35
ROAR	20	30	35
Host bloc	10	10	10
IFMAR	10	20	30

After distribution of the IFMAR places, the remaining places are to be distributed by the relevant IFMAR Section Chairman on a fair and equitable basis according to any extra requirements of the Blocs.

Depending on sun-set and sun-rise racing days will be 10-12 hours long, with a lunchbreak halfway if weather permits.

Saturday afternoon till Monday evening registration

Sunday, IPD, 1 day, free practice, no refuelling allowed in the pit lane. Maximum number of drivers on the rostrum is limited to 12, unless the track and rostrum are suitable for more drivers (after consultation with IFMAR)

Monday, General practice for all for 1 day. Depending on the number of drivers 4 or 5 rounds with maximum 12 drivers on the rostrum

Tuesday, Timed practice for all 1 day + opening ceremony. Depending on the number of drivers 3 or 4 rounds with 3 best consecutive laps as result. Each round you will get points. With 3 rounds, 1 round to count and with 4 rounds 2 rounds to count for seeding. In case of same points, best 3 consecutive lap time will be the tie-breaker. Fastest 10 drivers will be placed in the last heat, etc.

Wednesday/Thursday, 2 Days of Qualifying, heats 7-14 minutes duration. This 7 minutes as minimum should also help avoiding excessive engines tuning.

Qualifying schedule order for round 1 till 6					
Wednesday			Thursday		
Round 1	Round 2	Round 3	Round 4	Round 5	Round 6
Heat 1	Heat 1	Heat 1	Heat 1	Heat 1	Heat 1
Heat 2	Heat 2	Heat 2	Heat 2	Heat 2	Heat 2
Heat 3	Heat 3	Heat 3	Heat 3	Heat 3	Heat 3
Heat 4	Heat 4	Heat 4	Heat 4	Heat 4	Heat 4
Heat 5	Heat 5	Heat 5	Heat 5	Heat 5	Heat 5
Heat 6	Heat 6	Heat 6	Heat 6	Heat 6	Heat 6
Heat 7	Heat 7	Heat 7	Heat 7	Heat 7	Heat 7
Heat 8	Heat 8	Heat 8	Heat 8	Heat 8	Heat 8
Heat 9	Heat 9	Heat 9	Heat 9	Heat 9	Heat 9
Heat 10	Heat 10	Heat 10	Heat 10	Heat 10	Heat 10
Heat 11	Heat 11	Heat 11	Heat 11	Heat 11	Heat 11
Heat 12	Heat 12	Heat 12	Heat 12	Heat 12	Heat 12
Heat 13	Heat 13	Heat 13	Heat 13	Heat 13	Heat 13
Heat 14	Heat 14	Heat 14	Heat 14	Heat 14	Heat 14
Heat 15	Heat 15	Heat 15	Heat 15	Heat 15	Heat 15

For 150 drivers, 15 heats. Start R1 0800-1100, R2 1100-1400, R3 1430-1730.

For each round you will get points.

Out of 6 rounds, 3 to count

Out of 5 rounds, 3 to count

Out of 4 rounds, 2 to count

Out of 3 rounds, 2 to count

Out of 2 rounds, 1 to count

Out of 1 rounds, 1 to count

In case of same points, best laps/result will be the tie-breaker.

TQ in points of the Qualifying rounds goes straight into the main final. Number 2 till 5 will run Super pole for an extra place into the main final.

Friday/Saturday, Christmas tree finals, 2 Days for the finals
 Depending on track layout 10 or 12 drivers in the final
 10 drivers in the final

FINAL
 TQ+winner
 Superpole
 60 minutes

A leg finals

B leg finals

*+ next fastest 2 drivers from
 either semi-final

1st, 2nd, 3rd

1st, 2nd, 3rd

3, 5, 7, 9, 11, 13, 15

1/2 finals - 30 min.

4, 6, 8, 10, 12, 14, 16

1st, 2nd, 3rd

1st, 2nd, 3rd

17, 19, 21, 23, 25, 27,
 29

1/4 finals - 20 min.

18, 20, 22, 24, 26, 28,
 30

1st, 2nd, 3rd

1st, 2nd, 3rd

31, 33, 35, 37, 39, 41,
 43

1/8 finals - 20 min.

32, 34, 36, 38, 40, 42,
 44

1st, 2nd, 3rd

1st, 2nd, 3rd

45, 47, 49, 51, 53, 55,
 57

1/16 finals - 20 min

46, 48, 50, 52, 54, 56,
 58

1st, 2nd, 3rd

1st, 2nd, 3rd

59, 61, 63, 65, 67, 69,
 71

1/32 finals - 20 min.

60, 62, 64, 66, 68, 70,
 72

1st, 2nd, 3rd

1st, 2nd, 3rd

73, 75, 77, 79, 81, 83,
 85

1/64 finals - 20 min.

74, 76, 78, 80, 82, 84,
 86

1st, 2nd, 3rd

1st, 2nd, 3rd

87, 89, 91, 93, 95, 97,
 99

1/128 finals - 20 min.

88, 90, 92, 94, 96, 98,
 100

1st, 2nd, 3rd

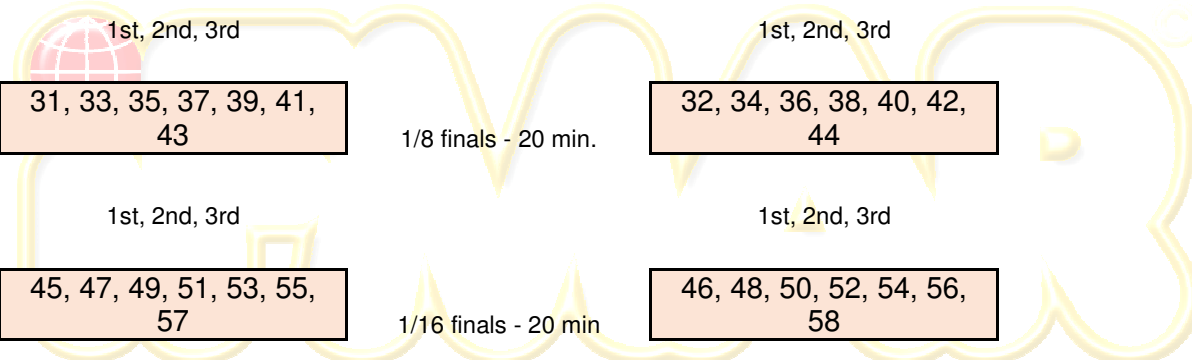
1st, 2nd, 3rd

101, 103, 105, 107,

1/256 finals - 20 min.

102, 104, 106, 108,

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109, 111, 113

1st, 2nd, 3rd

110, 112, 114

1st, 2nd, 3rd

115, 117, 119, 121,
123, 125, 127

1/512 finals - 20 min.

116, 118, 120, 122,
124, 126, 128

1st, 2nd, 3rd

1st, 2nd, 3rd

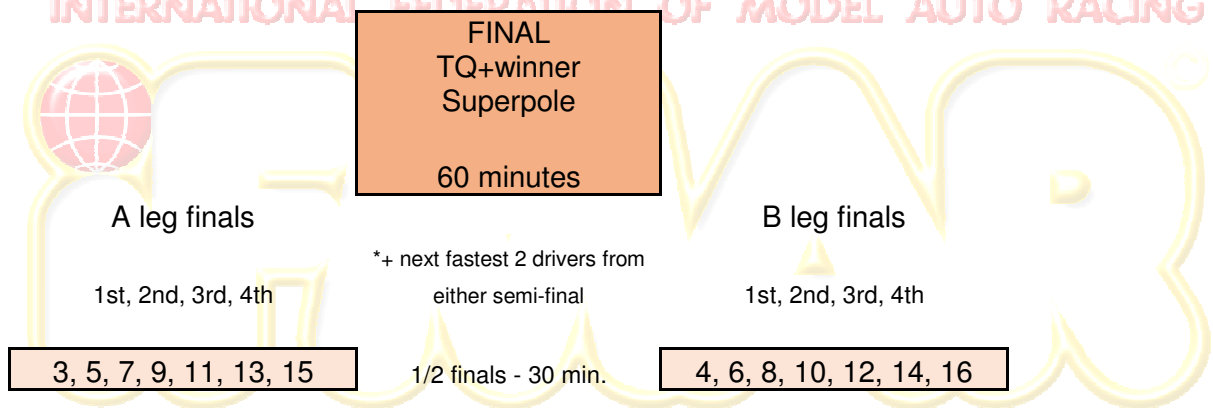
129, 131, 133, 135,
137,
139, 141, 143, 145,
147,
149

1/1024 finals - 20 min.

130, 132, 134, 136,
138,
140, 142, 144, 146,
148,
150

12 drivers in the final

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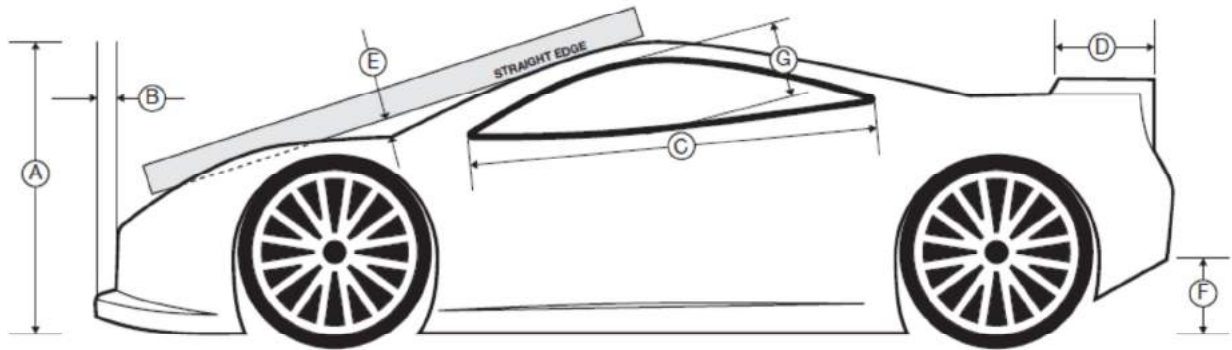


The car numbers for the eight (8) drivers who move up from the semi-finals to the main final are based on the results achieved out of both semi-finals, taking into account the laps and times only.

Trophies

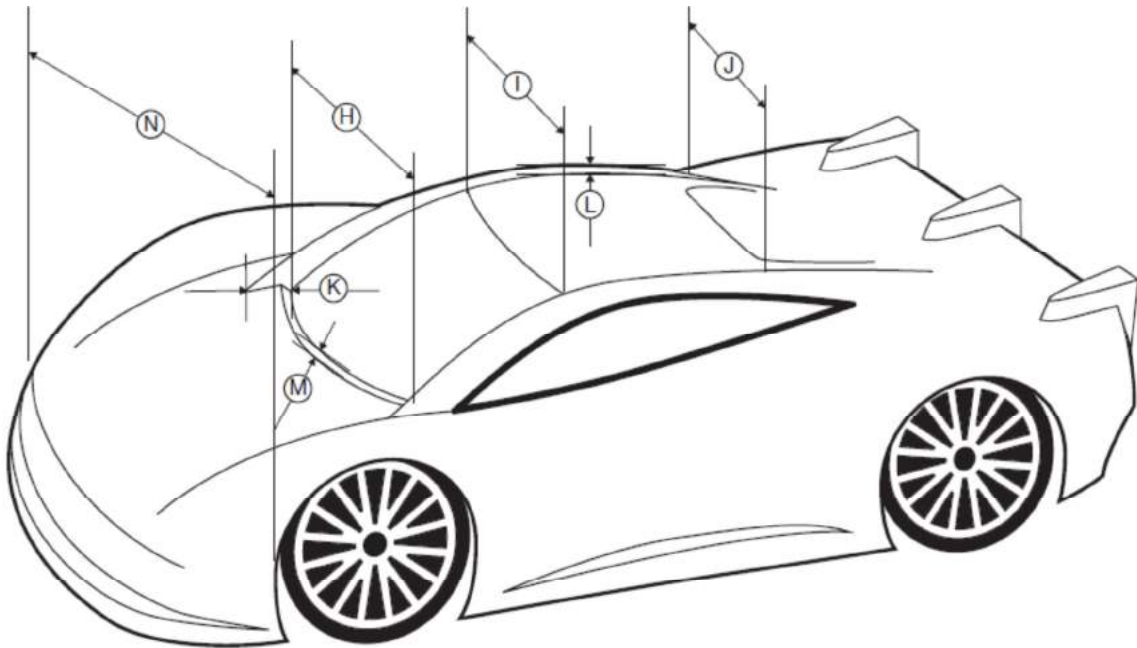
Trophies must be available for all drivers in the mainfinal, marked 1st till 10 (12) and for all drivers in the series, marked 11 or 13 till 22.

GBS Proposal for GT Class:



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- A) Minimum 155mm (with chassis on 20mm blocks)
- B) Maximum 15mm depth
- C) Minimum 170mm
- D) Maximum 50mm (shape to be defined)
- E) Minimum 9mm gap between straight edge and top surface of the hood
- F) Maximum 75mm (with chassis on 20mm blocks)
- G) Minimum 47mm



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- H) Minimum 200mm
- I) Minimum 145mm
- J) Minimum 130mm (top inside edge of C-pillar)
- K) Maximum 8mm depth of A-pillar above the windshield surface plane
- L) Maximum 5mm height of outer roof rail above the roof surface plane
- M) Maximum 4mm (stagger between hood and windshield)
- N) Maximum 317mm, minimum 300mm overall width