

TEAM:

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Single-Occupant

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Multi-Occupant

Driver / Passenger Registration	Electrical	Array Testing
Driver Operations	Battery Protection System	Safety
Lights & Vision	Mechanical	ASC Support
Body & Sizing	Dynamics	MOV Energy Metering
		Metered Charging <input type="checkbox"/> Certified <input type="checkbox"/> Not Certified

Passed for FSGP (Track)	HQ Received Date/Time/Initials	Passed for ASC (Road)	HQ Received Date/Time/Initials
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Scrutineering Penalties

Station	Regulation	Description of Issue	Penalty Value (FSGP/ASC)

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Regulation / Driver	Driver 1	Driver 2	Driver 3	Driver 4
11.1.A Driver is registered with HQ (has ID), is 18 or older with valid DL				
9.7.C – Common Ballast	Weight: _____ Ballast Tag # _____			
Driver Weight (includes driving clothes and shoes but not helmet)				
9.7 Ballast Weight – ballasted to 80 kg (176 lbs)				
Wristband Color	Orange Yellow Green Blue Purple	Orange Yellow Green Blue Purple	Orange Yellow Green Blue Purple	Orange Yellow Green Blue Purple
Wristband ID #				
Ballast Security Tag ID #				

11.1.A.2 Driver Req. – max of 4, min of 2		
11.2 Helmets – Type/Rating – Snell M2010, Snell M2015, Snell M2020, DOT FMVSS, ECE 22.05, AS/NZS 1698		
11.3 Shoes – Valid shoes		

*** FOR MULTI-OCCUPANT VEHICLES, COMPLETE PAGE 2 FOR PASSENGERS ***

Station Manager: _____

Entrance: All occupants report with ballast material, helmet(s), proper driver/passenger uniforms

Station Grade: Green = Pass
 Blue = Pass / Penalty
 Yellow = Needs Improvement / Dynamic Test Ready
 Red = Fail / Safety Hazard

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***** FOR MULTI-OCCUPANT VEHICLES *****

	Passenger 1	Passenger 2	Passenger 3	Passenger 4
Passengers				
11.1.B Registered with HQ (has ID), is 18 or older				
Passenger Weight (includes clothes and shoes but not helmet)				
9.7, 11.2 Ballast Weight – ballasted to 80 kg (176 lbs)				
Passenger Number Punched (1-8, X)	1 2 3 4 5 6 7 8 X	1 2 3 4 5 6 7 8 X	1 2 3 4 5 6 7 8 X	1 2 3 4 5 6 7 8 X
Wristband ID #				
Ballast Security Tag ID #				

	Passenger 5	Passenger 6	Passenger 7	Passenger 8
Passengers				
11.1.B Registered with HQ (has ID), is 18 or older				
Passenger Weight (includes clothes and shoes but not helmet)				
9.7, 11.2 Ballast Weight – ballasted to 80 kg (176 lbs)				
Passenger Number Punched (1-8, X)	1 2 3 4 5 6 7 8 X	1 2 3 4 5 6 7 8 X	1 2 3 4 5 6 7 8 X	1 2 3 4 5 6 7 8 X
Wristband ID #				
Ballast Security Tag ID #				

11.1.B.1 Passenger Req. – max of 8

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Regulation	10.3.A.14 Roll Cage Clearance – 50 mm b/w roll cage & helmet, 30 mm b/w padding & helmet	9.6.A Egress no wheel chocks, unassisted – 10 sec fully out of solar car (primary), 15 sec (secondary)	
		Primary	Secondary
Driver 1			
Driver 2			
Driver 3			
Driver 4			
Passenger 1			
Passenger 2			
Passenger 3			
Passenger 4			
Passenger 5			
Passenger 6			
Passenger 7			
Passenger 8			

Regulation	Grade	Comments
11.5 Water/Fluids – plan for water/fluid provision (1L min / per occupant)		
11.6 Radios/Communication – Driver in radio contact with team, hands free		
11.6.B Cell Phone in solar car – hands free and fixed mounting		
9.7.B Ballast Carriers – one per occupant within 300 mm of hip point		
9.7.D Ballast Access – located in solar car, and visible		
9.7.C Common Ballast Box – Equipped and sealable?		

Station Manager: _____

Entrance: All occupants report with ballast material, helmet(s), proper driver/passenger uniforms with fully assembled solar car and radio communication

Station Grade: Green = Pass
 Blue = Pass / Penalty
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Regulation	Grade	Comments
Vision		
9.5.B Forward Vision - ground @ 8 m, 6.4 m above @ 12.2 m ahead, 100° side to side, 75 mm letters @ 3m front, 50 mm letters @3m side		
9.5.E Rear Vision - 15 m back, 30° L/R single reflex image		
9.5.E Rear Vision – camera fixed in position , view screen viewable in normal driving position		
Lighting/Signals		
9.4.A Lighting – DRL/Headlamps ; white, visible 30° L/R, 15° up at 30 m		
9.4.B Lighting – Front Turn ; amber, visible 30° L/R, 15° up at 30 m		
9.4.C Lighting – Side Marker , amber, visible 60° F/B, 15° up at 30 m		
9.4.D Lighting – Brake ; red, visible 30° L/R, 15° up at 30 m		
9.4.E Lighting – Rear Turn ; red/amber, visible 80° out, 45° in, 15° up at 30 m		
9.4.F Lighting – High Mount Brake ; red, visible 30° L/R, 15° up at 30 m		
9.4.G Lighting – BPS Trip ; white, visible 30° L/R, 15° up at 30 m		
9.4.H. – Front turn, Side Markers, Rear Turn – Emergency Hazard format		
9.4.I Horn – sound level b/w 75-102 dB @ 15 m, permanently mounted, steering wheel operated. Duration for 5 min potential		

Station Manager: _____

Entrance: Driver in fully assembled solar car

Station Grade: Green = Pass
 Blue = Pass / Penalty
 Yellow = Needs Improvement / Dynamic Test Ready
 Red = Fail / Safety Hazard

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Regulation	Grade	Comments
Dimensions & Body		
9.1 Solar Car Dimensions – Max. Dimensions: L = 5.0 m, W = 2.2 m, H = 1.6 m		L=_____ W=_____ H=_____
9.3 Ground Clearance – 50 mm min		
8.1.H Charging Configuration – all portions carried by solar car (stands, supports, cables, etc)		
8.I.J & 9.2 Operational Configuration – body remains fixed (no reorientation/tilting) when moving under its own power		
9.5.C & 9.5.D Windshield – shatter resistant, method to clear rain, distortion free. Must be PC or folded Acrylic		
9.9.A Solar Car Numbers – approved color, 50 mm background, 250 mm high, 120 mm wide, 40 mm brush stroke, 25 mm spacing, visible from 3 m at 1.8 m above ground		
9.9.B Institution Name – displayed on car with approved abbreviations and more prominent than any team sponsor logo/name, no disruptive or offensive graphics. Visible from 3 m at 1.8 m above ground		
9.9.C Event Logo –space (200 mm H x 300 mm W) on both sides, visible from 3 m at 1.8 m above ground		
9.9.D National Flag – displayed on both sides of car by windshield (min size 70 mm x 40 mm)		
9.9.E Front Signage – space (600 mm x 150 mm projected) with event logo included and institutional name		
9.4.A Day Running Lights/headlamps – located in the front of the vehicle at the distance at least 25% of the overall vehicle from the centerline and at a distance no further than 175mm from the absolute front of the car.		
9.4.B Front Turn Indicators – must be located at the front of the vehicle at least 35% of the overall vehicle centerline. No more than 175mm back from the front		
9.4.C Side Marker – shall be mounted on each side of the vehicle between 10% and 30% of the vehicle length rearward from the absolute		
9.4.D Rear Brake Lights – located on the rear at a distance at least 25% of the overall vehicle. Must be 175mm from absolute rear		
9.4.E Rear Turn – Must be located at the rear of the vehicle and a distance at least 25% of the overall vehicle width away from the centerline and at a distance no further forward than 175mm from the absolute rear		
9.4.F High Mounted Center Brake light – must be at less below the highest point of the car and must be higher than the rear lights		
Distance from front of car to driver's headrest (measured in meters & used for upward vision calcs)		D=_____

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Regulation	Grade	Comments
Cockpit		
7.1.A, 10.3.B.1 Single Occupant Class Number of Occupants – Max. of (1)		
7.1.B, 10.3.B.2 Multi-Occupant Class – Number of Occupants		
10.3.B.3 Seating Position – seat forward facing		
10.3.B.4 Back and Head Restraint – top of head restraint 800 mm (MOV front seats, Single-Occupant), 750 mm (MOV rear seats)		
10.3.B.5, 10.3.B.6 Occupants heels below hip point , angle between shoulders, hips, knees >90 deg		
10.3.C Occupant Space Check		
9.5.A Visibility – eye height = must be 700 mm or greater		
10.3.D Belly Pan – full isolation and ability to support 80 kg. Occupants torso and limbs above lower element of chassis		
10.3.A.12 Padding – roll cage padded around head meeting SFI-45.1/FIA 8857-2001 A or B or better, coverage of 50% or more.		
10.3.A.13 Headrest – headrest provided with 20 mm thick padding, secured		
9.5.F Outside Air Circulation – cockpit vents / intake vents, fan if from wheel vents		
9.6.B Egress – Can be opened from both inside and outside, no tape used at egress point, positive latch		
9.6.B.4 Egress Opening – 25 mm wide stripe, and external canopy release marked “Open” 20 mm		
Vehicle Weight & Tires		
Vehicle Weight		LF= _____ RF= _____ LR= _____ RR= _____ Total= _____
10.2.A, 10.2.B Tire Sets – tire configurations meet loading requirement, min 4 points of contact		
10.2.C Tire Ratings – weight <wheel rating> tires inflated w/in manf. rating tube-type tires need tubes US DOT or similar		
10.2.D Wheel/Rim – profile matches bead requirements of tire		
Tire Set Configuration NOTES:		

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Regulation	Grade	Comments
Solar Collector Sizing		
8.1.A Cell Type		Type: _____
8.1.B Size – SOV (Cell Type 1 - 4m ² , Cell Type 2 – 3.560m ² , Cell Type 3 – 2.640m ²)		
8.1.B Size – MOV (Cell Type 1 - 5m ² , Cell Type 2 – 4.440m ² , Cell Type 3 – 3.300m ²)		
5.2.F Solar Cell Technology – Solar cells match information given on approval form		
8.1.G Example Cell and layout map provided which matches physical solar collector on car		
8.1.F No more than 6 cell types or sizes used		
8.1.E Hybrid Solar Collector		
8.1.D Concentrator		
5.2.F Grandfathered Array		
8.1.I Water Sprayer – hand pumped, 5 gal max, ambient temp water only		
8.1.H Stands – carried by the solar car		
8.1.H Umbilical cord – stored in car		

Station Manager: _____

Entrance: Driver and occupants in fully assembled solar car

Station Grade: Green = Pass
 Blue = Pass / Penalty
 Yellow = Needs Improvement / Dynamic Test Ready
 Red = Fail / Safety Hazard

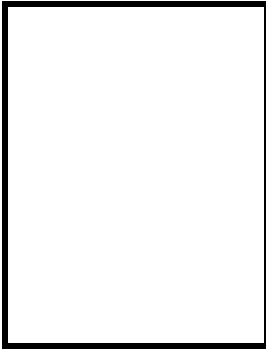
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Regulation	Grade	Comments
8. Power – Solar array is present, no non-solar power sources		
8.2.A.1 SOV Battery Max weights _____ Li-S (15 kg) _____ Li-ion / Li Polymer (20 kg) _____ LiFePo4 (40 kg) _____ 8.2.B. (Other)		
8.2.A.2 MOV Battery Exemption		Battery Weight:
8.4.D Battery Ventilation – pull from exterior vent, operates with battery switch Fan can operate from supplemental if BPS trips		
8.4.E External Cooling – not permitted unless powered by main battery / unless emergency		
8.4.A, 8.4.C Battery Enclosures – isolated w/ 1 MΩ to frame, non-conductive, labeled		
8.6.C External Power Switch – location, marking, operation, rated for load		
8.9 Electrical Shock Hazards – protected and marked w/ 10 mm labels		
8.2.B., 8.2.D Other Storage Techniques – Power condensers or flywheels		
8.4 Battery Removal – batteries can be removed		
8.4 Battery Removal – MOV exemption		
8.4.G Impound Box – lockable box, no external hardware		
5.2.D & 8.2.A Storage Batteries – match submitted approval form		
8.2.A Battery Pack Weight		
8.4.B Battery Mounting - secured		
8.2.C Supplemental Batteries – radios, meters, driver fan, main power switch, horn only, BPS momentarily, fans in BPS trip, BPS Strobe, BPS Fault Driver Indicator		
8.4 Supplemental Battery Location – In battery enclosure		
8.5.A Main Fuse - < 200% Ip or 75% of wire capacity, first in series		
8.5.B Branch – other wiring sizes off main bus are properly fused		
8.5.C Voltage Taps – fused or current limited		
8.6.A Power Switch – manual switch capable to interrupt Ip, 10 mm labels, normally open		
8.1.H Electrical Connection – between array and car are carried internally		
8.7.A Cable Sizing – proper size for Ip		
8.8.B Accelerator – zero return, brake shutoff on cruise control		
8.8.A Control – driver has sole control		
8.8.C Cruise Control – driver activated only, automatic deactivation		

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Station Manager:

Entrance: Fully assembled solar car

Station Grade: Green = Pass
 Blue = Pass / Penalty
 Yellow = Needs Improvement / Dynamic Test Ready
 Red = Fail / Safety Hazard

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BPS - OVER VOLTAGE (OV) TEST☐ String ☐ Module ☐ Cell – Test Level☐ Pass ☐ Fail

Nominal Voltage: _____ Vnom @ _____ °C

BPS V Resolution: _____ Bit

Max Voltage: _____ Vmax @ _____ °C

BPS V Range: _____ - _____ VDC

BPS Max Trip: _____ Vmax_trip

BPS Sample Rate: _____ S/s

☐ Filtering ☐ Delay

BPS Disconnect Delay: _____ s

BPS - UNDER VOLTAGE (UV) TEST☐ String ☐ Module ☐ Cell – Test Level☐ Pass ☐ N/A ☐ Fail

Nominal Voltage: _____ Vnom @ _____ °C

BPS V Resolution: _____ Bit

Min Voltage: _____ Vmin @ _____ °C

BPS V Range: _____ - _____ VDC

BPS Min Trip: _____ Vmin_trip

BPS Sample Rate: _____ S/s

☐ Filtering ☐ Delay

BPS Disconnect Delay: _____ s

BPS - OVER CURRENT (OC) TEST☐ String ☐ Module – Test Level☐ Pass ☐ N/A ☐ Fail

Max Current (charge): _____ Imax @ _____ °C

BPS I Resolution: _____ Bit

Max Current (discharge): _____ Imax @ _____ °C

BPS I Range: _____ - _____ VDC

BPS I Trip(charge): _____ Imax_trip

BPS I Trip(discharge): _____ Imax_trip

BPS Sample Rate: _____ S/s

☐ Filtering ☐ Delay**BPS - OVER TEMPERATURE (OT) TEST**☐ String ☐ Module ☐ Cell – Test Level☐ Pass ☐ N/A ☐ Fail

(Charge) / (Discharge)

Max Operating Temperature: _____ / _____ °C

BPS T Resolution: _____ Bit

BPS T Trip: _____ °C Tmax_trip_charge

BPS T Range: _____ - _____ °C

BPS T Trip: _____ °C Tmax_trip_discharge

BPS Sample Rate: _____ S/s

BPS Disconnect Delay: _____ s

Regulation	Grade	Comments
8.6.B Fault Dash Indicator illuminates on BPS trip		
9.4.G.2 BPS Trip Strobe illuminates on BPS trip		

Station Manager: _____

Entrance: Fully assembled solar car, battery pack, & BPS

Station Grade: Green = Pass

Blue = Pass / Penalty

Yellow = Needs Improvement / Dynamic Test Ready

Red = Fail / Safety Hazard

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Regulation	Grade	Comments
5.2.B Mechanical Report – vehicle matches structural report		
8.4.B Battery Enclosures – structurally sound and properly secured to chassis		
9.7.B, 9.7.C Ballast Carriers – structurally sound and properly secured to chassis		
10.1 Body panels and array – securely fastened to prevent unintended movement		
10.1.C Array Attachment – 2 independent methods		
10.2.A Wheel Configuration Acceptable		
10.2.B Wheels – meet the minimum requirements		
10.8 Towing Hardpoint – accessible for forward towing		
Occupant Cell		
10.1.A Covers and Shields – all moving parts protected against contact. Occupants shielded from steering linkage and other moving parts		
10.3 Occupant Cell – designed for protection, will not cause undue strain		
10.7.A Steering Wheel – continuous perimeter steering wheel. Ref. Appendix A		
10.3.E Safety Belts – commercial 5 pt. that meets FIA D 280.T, SFI 16.1 or SFI 16.5, proper positioning of attachment points, properly attached (10.3.E.3)		
10.3.E.6, 10.3.E.7, 10.3.E.8 shoulder belt placement		
10.3.E.6, 10.3.E.9 lap belt placement		
10.3.E.6, 10.3.E.10 submarine belt placement		
10.3.E.4 Safety belt chaffing through seat		
10.3.A.1 Roll Cage encompasses occupants from shoulders up, metallic		
10.3.A.2 Structural Chassis designed to encompass occupants in all directions		
10.3.A.15 Shatter Protection for composites near head		
10.5.E & 10.5.F Pedal Placement - brake pedal activation, spacing between pedals, right foot activation		
8.8.B Accelerator Pedal Placement - right foot activation & right of the brake pedal		
Steering		
10.1.B Clearance – moving parts are interference free		
10.1.B, 10.7.D Steering Static Test – can turn lock to lock while still, no excessive play in steering		
10.7.B Steering stops – in place and functional		

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Regulation	Grade	Comments
Brakes		
10.5.F Hand Brakes – if equipped – lock-to-lock use without repositioning hands		
10.5.A Brakes – dual independent and balanced co-reactive		
10.5.B Brake Pads – contact area > 6.0 cm ² , initial thickness >= 6.0 mm, full contact with rotor		
10.5.D Brake Lines – appropriately sized and constructed		
10.5.G Mechanical Rear Brake Only – pull test		15% GMW =
10.5.G (or other areas) – Volume limiting valve(s) – locked out		
10.6 Parking Brake – lockable, independent equipped with working parking brake (must hold 10% of vehicle weight in both directions), non-tire contact style		VEHICLE WEIGHT =
		FORWARD PULL =
Fasteners/Hardware		
Critical Areas (Reg 10.4.E)	Steering	Brakes
	Front Suspension	Rear Suspension
	Seat/Safety Harness	Drive Train
	Battery Box	Ballast Box
10.4 - Critical Areas do not use friction or press fit assemblies		
10.4.A Bolts – SAE grade 5, M 8.8 or AN/MS on critical systems, two threads beyond nut, no shaved heads		
10.4.B Securing Bolts – safety wire, cotter pins or flex-loc nuts		
10.4.D No plastic luggage type buckles or single push release straps		
Fastener/Hardware Notes:		
10.4.C Securing Rod-Ends – All rod-ends secured with jam nuts		
10.4.F Hub Nuts – For single hub nut, 10.9 mm thickness		

Station Manager: _____

Entrance: Vehicle disassembled at station

Station Grade: Green = Pass
 Blue = Pass / Penalty
 Yellow = Needs Improvement / Dynamic Test Ready
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Regulation	Grade	Comments
U-Turn Test		
10.7.C Turning Radius – any portion of the car <200 mm above ground is within 16 m wide lane		RIGHT TURN: LEFT TURN:
Figure-8 Test		
10.2.A Tire and Wheel Requirements – all wheels must remain on the ground		
10.1.B no body work shall contact moving structural members		
10.9 Dynamic Stability – vehicles must exhibit sufficient stability during test		
10.9.A Figure 8 – vehicle must negotiate Figure-8 in <9 seconds per side w/o hitting cones or showing signs of instability		TIME FOR FIGURE-8:
Braking Test		
10.9 Dynamic Stability – vehicles must exhibit sufficient stability during test		
10.5.C, 10.9.D Braking Performance – vehicle must decelerate from ≥ 50 km/h (31 mph) at > 4.72 m/s ² to a complete stop w/o excessive veering or signs of instability (mechanical braking only)		TIME: SPEED:
Slalom Test		
10.9 Dynamic Stability – vehicles must exhibit sufficient stability during test		
10.9.C Slalom Test – Negotiate slalom course within appropriate time (11.5 s)		TIME: SPEED:
High Speed Stability		
10.9 Dynamic Stability – vehicles must exhibit sufficient stability during test		
10.9.B Stability at Speed – Maintains constant speed in a 3.5 meter lane		SPEED:

Station Manager: _____

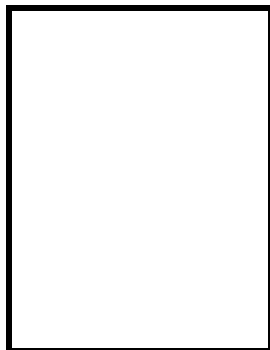
Entrance: All drivers & passengers report to station with car, ballast, & battery spill kit;
At least yellow from Driver Registration, Driver Operations, Lights & Vision, Body & Sizing, Mechanical, Electrical, & BPS

Station Grade: Green = Pass
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Regulation	Grade	Comments	
Safety Equipment (minimum requirements) (3.1.B.1)			
Certified, stocked First Aid Kit			
ABC Fire Extinguisher			
Safety Vests (1 per person)			
Battery MSDS			
Spill Kit/method of containment of battery fires (40 kg of sand)			
Shovel / Spade (for applying sand)			
Battery handling PPE (gloves, safety glasses, etc)			
Suitable containers for damaged electrochemical cells			
Safety Officer (3.1.A)			
3.1.A.1 Team Safety Officer Name(s):	3.1.A.2 Proof of First Aid & CPR training		3.1.A.3 Designated Safety Officer is not a Solar Car Driver, Solar Car Passenger, Support Vehicle Driver, or Team Manager
	First Aid	CPR	



Station Manager: _____

Entrance: Safety Officer(s) must be present

Station Grade: Green = Pass
 Blue = *Not available at this station*
 Yellow = *Not available at this station*
 Red = Fail / Safety Hazard

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Regulation	Lead	Chase	Scout	T&T			Comments
Support Vehicles (12.4, 12.4.A – 12.4.E)	TOTAL # OF SUPPORT VEHICLES: _____						
All vehicles registered with Event HQ							
Max 15 passenger van							
Roof mounted amber lights							
GPS for observer viewing							
Storage racks are secure and safe							
Support Vehicle Graphics (12.4.F)							
Organization Name							
Solar Car Number on both sides & rear (at least 250 mm tall, with a 40 mm brush stroke)							
Solar Car Number on top passenger's side of windshield (at least 150 mm tall)							
Event Logo (both sides of each vehicle)							
Solar Car Caravan Sign							
Radio Communication (12.5)							
Communication with solar car driver, which observer can monitor							
Hands free comm. for all vehicle drivers							
Separate CB channel for ASC communications in all vehicles on route							
Safety Equipment (minimum requirements) (3.1.B.2, 12.4.B – 12.4.C)							
4 Orange Cones (minimum 12" high)							
Orange Warning Flag							
First aid kit, fire extinguisher, safety vests (1 per person in vehicle) – equipment in lead & chase							
Battery spill kit in chase: MSDS, sand, shovel, PPE, suitable container(s) for damaged cells							
Demonstrations							
Roadside safety procedures by team (role play)							
CB radio check at range							

Station Manager: _____

Entrance: All support vehicles/equipment, team members who will be in lead & chase, and safety Officer(s); Green status in Safety

Station Grade: Green = Pass
 Blue = *Not available at this station*
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8.10.A Charger	Result/Comments
Onboard vehicle charger rigidly secured in vehicle	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Charger protected from water ingress	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Charger able to accept input voltages from 120-240 Vac	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Charger power rating (kW)	
Charger DC current request methodology (describe)	
<ul style="list-style-type: none"> Considers max battery DC charge current limit from BMS 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> Considers user set max AC or DC charge current limit 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> Considers the J1772 control pilot max AC current limit 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> <ul style="list-style-type: none"> If possible, describe how AC current is regulated to the J1772 control pilot max and/or how the AC current limit is translated to the DC current limit 	
8.10.B Vehicle Power Inlet & 8.10.C Charging Adapter	Result/Comments
Standard EV power inlet receptacle present	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Vehicle power inlet securely mounted to vehicle	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Adapter needed for J1772 plug to another standard EV power inlet	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> Charging adaptor isn't longer than 1m in length 	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A
<ul style="list-style-type: none"> Charging adapter carried in vehicle when not in use 	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A
8.10.D Energy Metering	Result/Comments
IEF energy meter assigned to team (Meter #)	
Vehicle features NEMA 14-50 inline connection for energy meter	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Energy meter display location is can be visibly read while charging	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Charger is sealed to prevent unauthorized internal access	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Battery box features dedicated charger power port and relay	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
8.10.E Charging Safety	Result/Comments
BPS is actively monitoring/protecting the battery during charge	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
When the Main Power Switch controlled by the BPS opens, the output of the MOV charger disconnects from the battery pack	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Onboard charger current is automatically limited by the BMS as battery approaches full charge to avoid BPS faults	<input type="checkbox"/> Yes <input type="checkbox"/> No
AC/DC power connection enclosures/covers	
<ul style="list-style-type: none"> Non-conductive 	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
<ul style="list-style-type: none"> Only removable with the use of tools 	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
<ul style="list-style-type: none"> 10 mm high letters with "Caution: High Voltage" 	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Power conductors sized appropriately for max AC/DC currents	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
<ul style="list-style-type: none"> AC power min conductor size (AWG) 	
<ul style="list-style-type: none"> DC power min conductor size (AWG) 	
8.10.F Electric Vehicle Supply Equipment (EVSE)	Result/Comments
Team has J1772 EVSE	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
EVSE can be plugged into standard NEMA 5-15 120Vac outlet	<input type="checkbox"/> Yes <input type="checkbox"/> No
120Vac compatible (list max current in A)	<input type="checkbox"/> Yes <input type="checkbox"/> No
240Vac compatible (list max current in A)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Team has a generator that can be used to charge the vehicle	<input type="checkbox"/> Yes <input type="checkbox"/> No

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8.10.G MOV Impound	Result/Comments
Solution allows main battery power connectors/conductors to be locked/sealed such that unmetered battery charging can't occur	<input type="checkbox"/> In Chassis Impound <input type="checkbox"/> External Impound Box
▪ Battery box lid(s)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A
▪ Motor power port(s)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A
▪ Solar array power port(s)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A
▪ Other connector/conductor (describe)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A
MOV Charging Testing/Metered Charging Certification	Result/Comments
Plug in the IEF onboard energy meter in their vehicle	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Verify pinout at the terminal block inside the meter enclosure	
▪ Neutral (W) - no continuity with other terminals	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
▪ Ground (G) - continuity with vehicle power inlet GND & any exposed charger/chassis metal but no other terminals	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
▪ L1 (B) - continuity with one of the vehicle power inlet Lines but no other terminals	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
▪ L2 (R) - continuity with one of the vehicle power inlet Lines but no other terminals	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Verify charger power conductor isolation	
▪ AC input power to DC output power conductors	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
▪ AC input power conductors to vehicle chassis	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
▪ DC output power conductors to vehicle chassis	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Have the team demonstrate charging with their own J1772 EVSE	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Have the team demonstrate charging with IEF J1772 EVSE	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
▪ Proximity Pilot Validation	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
▪ Control Pilot Validation	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Verify the IEF onboard energy meter is reading correctly	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Vehicle drive motor is disabled when a J1772 plug is connected	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Vehicle charging system is able to detect and prevent charging in a broken AC ground scenario	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lock/seal all exposed connectors/conductors on the AC/DC charging power lines between this battery box port and the vehicle power inlet to physically prevent any of these connections from being unplugged or tapped into	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Battery Pack Capacity in kWh from Electrical Station [Q]	
Vehicle certification for metered charging in this event	<input type="checkbox"/> Certified <input type="checkbox"/> Not Certified

Station Manager: _____

Entrance: Fully assembled car & Electric Vehicle Supply Equipment (EVSE)
Yellow status or better in Electrical and BPS.Station Grade: Green = Pass
Blue = Pass/Penalty
Yellow = *Not available at this station*
Red = Fail / Safety Hazard