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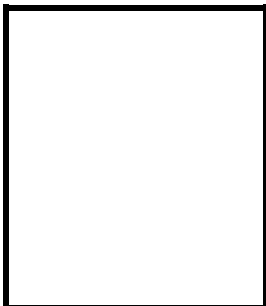
Station	Grade	Comments
Array		
Driver Registration		
Driver Operations		
Lights & Vision		
Body & Sizing		
Electrical		
Battery Protection		
Mechanical		
Dynamics		
Support		

PENALTY	REGULATION	VALUE

Date & Time Received	
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Regulation	Grade	Comments
Solar Array Output		
Voltage	/	
Amperage	/	
Power	/	



Station Manager:

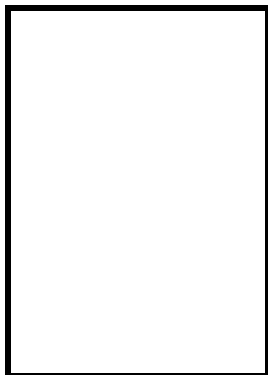
Entrance:

Array disconnected from battery.

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Regulation \ Driver	Driver 1	Driver 2	Driver 3	Driver 4
8.1 Driver is registered with headquarters (has ID), is 18 or older with valid DL				
8.3.A Driver Helmets – Type/Rating – Meets or exceeds Snell M95 / DOT / ISO motorcycle				
8.3.B Driver Shoes – Valid shoes				
6.36.F, 6.7, 8.3.C Driver Ballast – Each driver ballasted to 80 kg (176 lbs)				
6.7.B – Common Ballast				
Driver Weight / Ballast Weight (driver weight includes driving clothes and shoes but not helmet)				
Color Tag / Security Marker				

Regulation	Grade	Comments	
8.1 Driver Req. – max of 4, min of 2			



Station Manager:

Entrance:

All drivers report with ballast material, helmet(s), proper driver/passenger uniforms

Station Grade:

Green = Pass

Blue = Pass / Penalty / Bridging Document Required

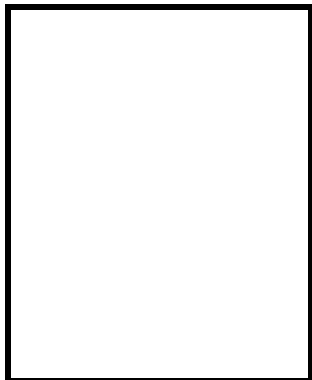
Yellow = Needs improvement / Dynamic Test Ready

Red = Fail / Safety Hazard

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Regulation \ Driver	Driver 1	Driver 2	Driver 3	Driver 4
7.3.F.6 Roll Cage – 50 mm clearance b/w roll cage and helmet, 30 mm clearance b/w padding & helmet				
6.5 Egress no wheel chocks, unassisted – 10 sec fully out of solar car (primary), 15 sec (secondary),	P S	P S	P S	P S

Regulation	Grade	Comments
8.3.E Water/Fluids – plan for water/fluid provision (1L min)		
9.5, 8.4.A Radios/Communication – Driver in radio contact with team, hands free		
8.4.B Cell Phone in solar car – hand’s free and fixed mounting		
6.6.E Ballast Access – located in solar car, and visible		
6.6.D Common Ballast Box – Equipped and sealable?		



Station Manager:

Entrance:

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

Station Grade:

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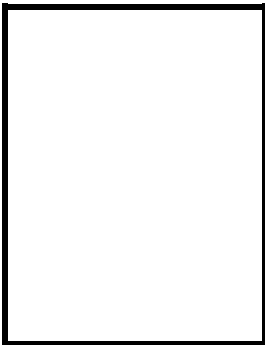
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Regulation \ Driver	Driver 1	Driver 2	Driver 3	Driver 4
6.4.B Forward Vision - ground @ 8 m, 6.4 m above @ 12.2 m ahead, 100° side to side, 75 mm letters @ 3m front, 50 mm letters @3m side				
6.4.E Rear Vision - 15 m back, 30° L/R single reflex image				

Regulation	Grade	Comments
6.4.E Rear Vision – camera fixed in position, view screen viewable in normal driving position		
Lighting / Signals		
6.3.A.1, 6.3.C.1 Lighting – front turn; amber, visible 30° L/R, 15° U at 30 m, 25% of vehicle width from CL, front extremities, no farther back than 175 mm		
6.3.A.2, 6.3.C.2 Lighting – Side Marker, amber, visible 60° F/B, 15° U at 30 m, between 20-30% back		
6.3.A.3, 6.3.C.3 Lighting – brake; red, visible 30° L/R, 15° U at 30 m, 40% of vehicle width from CL, no farther forward than 175 mm		
6.2.A.3, 6.3.C.3 Lighting – rear turn; red/amber, visible 30° L/R, 15° U at 30 m, 25% of vehicle width from CL, rear extremities		

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6.3.A.4, 6.3.C.4 Lighting – brake; red, visible 30° L/R, 15° U at 30 m, high mounted rear of vehicle canopy (700 mm above ground)		
6.3.A.5, 6.3.C.5 Lighting – BPS Trip; white, visible 30° L/R, 15° U at 30 m, high mounted rear of vehicle canopy (700 mm above ground)		
6.3.D. – Front turn, Side Markers, Rear Turn – Emergency Hazard format		
6.3.E 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:

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Dimensions and Body		
6.1 Solar Car Dimensions – Max. Dimensions L = 5.0 m, W = 1.8 m, H = 1.8 m		
6.1.A Charging Configuration – solar car body may split into two components; each component may not exceed the dimensions of the assembled car		
6.2 Rayce Configuration – body remains fixed (no reorientation/tilting) when moving under its own power		
6.4.C & 6.4.D Windshield – shatter resistant, method to clear rain, distortion free		
6.8.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		
6.8.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		
6.8.C Event Logo –space (200 mm H x 300 mm W) on both sides, visible from 3 m at 1.8 m above ground		
6.8.D. National Flag – displayed on both sides of car by windshield (min size 70 mm x 40 mm)		
Distance from front of car to drivers headrest		
Cockpit		
8.3 Number of Occupants – Max. of (1)		
7.3.B Seating Position – driver head above and behind feet. 27 degree or less, solid base & back rest		
7.3.C Belly Pan – full isolation and ability to support 80 kg. Driver above lower element of chassis		
7.3.F.5 Padding – roll cage padded around head meeting SFI-45.1 or better		
7.3.F.5 Headrest – headrest provided with 20 mm thick padding, secured		
6.4.F Outside Air Circulation – cockpit vents / intake vents, fan if from wheel vents		
6.5.B Egress – Can be opened from both inside and outside, No tape used at egress point		
6.5.F Egress Opening – 25 mm wide stripe, and external canopy release marked “Open” 20 mm		

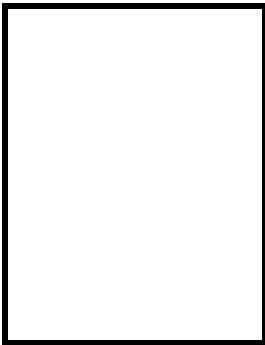
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Regulation \ Driver	Driver 1	Driver 2	Driver 3	Driver 4
6.4.A Visibility – eye height = must be 700 mm or greater				

Regulation	Grade	Comments
Raycing Requirements		
7.8 Towing Hardpoint and tow strap for breakdowns per track regs		
6.7 Data logger – position for exposure to sky and fixed in position		
5.8.B Umbilical cord – stored in car		
Vehicle Weight and Tires		
Vehicle Weight LF - RF- LR- RR- Total:		
7.2.A, 7.2.B Tire Sets – tire configurations meet loading requirement, min 3 points of contact		
7.2.C Tire Ratings – weight <wheel rating> tires inflated w/in manf. rating tube-type tires need tubes		
7.2.D. Wheel/Rim – profile matches bead requirements of tire		
Tire Set Configuration NOTES:		

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Solar Array Sizing		
5.2.A Cell Type: _____		
5.2.B. Array Size (Cell Types 1 and 2 - 6m ² , Cell Types 3 as per equation, Cell Type 4 – 3m ²)		
3.4.F Solar Cell Technology – Solar cells match information given on approval form		
5.2.D Example Cell and map provided that match physical array on car		
5.2.C No more than 6 cell types or sizes used		
5.2.F Grandfathered Array		
5.2.G Water Sprayer – hand pumped, 5 gal max, ambient temp water only		



Station Manager:

Entrance:

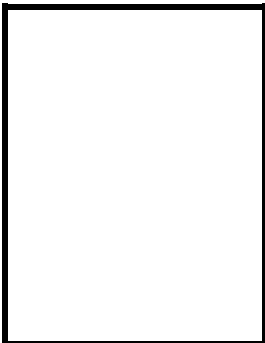
Driver in fully assembled solar car

Station Grade:

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Regulation	Grade	Comments
5.1 Power – Solar array is present, no non-solar power sources		
5.3.A Battery Max weights _____ Pb-acid sealed (125 kg) _____ NiMH (60 kg) _____ LiFePo ₄ (40 kg) _____ Li-ion / Li Polymer (20 kg) _____ 5.3.B. (Other)		
5.5.D Battery Ventilation – 280 L/min pull from exterior vent, operates with battery switch Fan can operate from supplemental if BPS trips		
5.5.E External Cooling – not permitted unless powered by main battery / unless emergency		
5.5.A, 5.5.C Battery Enclosures – isolated w/ 1 MΩ to frame, non-conductive, labeled		
5.7.B External Cutoff Switch – properly marked and rated for load		
5.11 Electrical Shock Hazards – protected and marked w/ 10 mm labels		
5.3.D, 5.3.B Other Storage Techniques – Power condensers or flywheels		
5.5 & 9.17.D Battery Removal – batteries can be removed and have appropriate storage case		
3.4.D & 5.3 Storage Batteries – match submitted approval form		
5.3 Battery Pack Weight		
5.5.B Battery Mounting - secured		
5.3.C Supplemental Batteries – radios, meters, telemetry, driver fan, main disconnect relay, horn only, BPS momentarily, fans in BPS trip		
5.6 Main Fuse - < 200% Ip or 75% of wire capacity, first in series		
5.7 Power Switch – manual switch capable to interrupt Ip, 10 mm labels, normally open		
5.8.B Electrical Connection – between array and car are carried internally		
5.8.A Cable Sizing – proper size for Ip		
5.9 Accelerator – zero return, brake shutoff on cruise control		
5.10 Control – driver has sole control		



Station Manager:

Entrance:

Fully assembled car

Station Grade:

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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

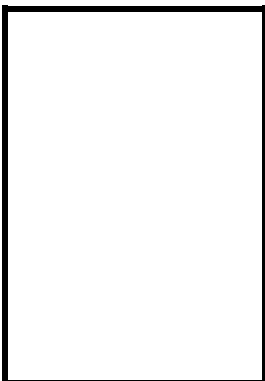
Max Current (charge): _____ Imax @ _____ °C **BPS I Resolution:** _____ Bit
Max Current (discharge): _____ Imax @ _____ °C **BPS I Range:** _____ - _____ VDC
BPS I Trip(charge): _____ Imax_trip **BPS Sample Rate:** _____ S/s
BPS I Trip(discharge): _____ Imax_trip
 Filtering Delay

BPS - OVER TEMPERATURE (OT) TEST

String Module Cell – Test Level Pass N/A Fail

Max Operating Temperature: _____ / _____ °C (Charge) / (Discharge) **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
5.7.A.4 Fault Dash Indicator illuminates on BPS trip		
6.3.A.5 BPS Trip Strobe illuminates on BPS trip		



Station Manager: _____

Entrance: _____

Fully assembled car / battery pack and BPS

Station Grade:

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Regulation	Grade	Comments
3.4.B Mechanical Report – Vehicle matches structural report		
5.5.B Battery Enclosures – structurally sound and properly secured to chassis		
6.6.C Ballast Carrier – structurally sound and properly secured to chassis, no more than 2		
7.4.D Buckles & Straps – no nylon luggage straps.		
7.1 Body panels and array – securely fastened to prevent unintended movement		
7.1.C. Array Attachment – 2 lanyards (braided steel 2mm dia. up to 1 m of slack)		
7.2.A Wheel Configuration Acceptable		
7.2.B Wheels – Wheels meet the minimum requirements		
Driver Cockpit		
7.1.A Covers and Shields – all moving parts protected against contact. Driver shielded from steering linkage and other moving parts		
7.3 Driver cockpit – designed for protection, will not cause undue strain		
7.7.A Steering Wheel – continuous perimeter steering wheel. Ref. Appendix A		
7.3.D Safety Belts – commercial 5 pt. that meets SFI 16.1 or SFI 16.5, proper positioning of attachment points, properly attached with nuts and bolts		
7.3.D.1, 7.3.D.6 5-point (min) safety belt (FIA/SFI)		
7.3.D.4 shoulder belt placement		
7.3.D.4 lap belt placement		
7.3.D.4 submarine belt placement		
7.3.E.1 – Crush Zone – 150 mm structural zone by driver torso		
7.3.F Roll Cage – designed to encompass driver in all directions, integral part of chassis, deflect array		
7.5.D & 7.5.E Pedal Placement - brake pedal activation, spacing between pedals, right foot activation		
5.9A Accelerator Pedal Placement (if foot activated – right foot activation)		

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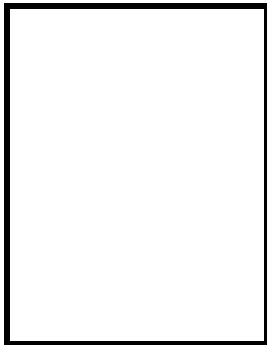
Steering		
7.1.B Clearance – moving parts are interference free		
7.1.B, 7.7.D Steering Static Test – can turn lock to lock while still, no excessive play in steering		
7.7.B Steering stops – in place and functional		

Brakes		
7.5.F Hand Brakes – if equipped – lock-to-lock use without repositioning hands		
7.5 Brakes – dual independent and balanced co-reactive		
7.5.A Brake Pads – contact area > 6.0 cm ² , initial thickness >= 6.0 mm, full contact with rotor		
7.5.C Brake Lines – appropriately sized and constructed		
7.5.G Mechanical Rear Brake – Volume limiting valve – locked out		
7.6 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:	REAR PULL:

Hardware								
Critical Areas (Reg 7.4.E)	Steering	Brakes	Front Suspension	Rear Suspension	Seat/Safety Harness	Drive Train	Battery Box	Ballast Box
7.4 - Critical Areas do not use friction or press fit assemblies								
7.4.A Bolts – SAE grade 5, M 8.8 or AN/MS on critical systems, two threads beyond nut, no shaved heads								
7.4.B Securing Bolts – safety wire, cotter pins or flex-loc nuts								

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Fastener/Hardware Notes:	
7.4.C Securing Rod-Ends – All rod-ends secured with jam nuts	



Station Manager:

Entrance:

Vehicle disassembled in team pit

Station Grade:

Green = Pass

Blue = Pass / Penalty / Bridging Document Required

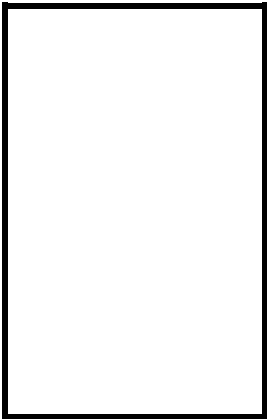
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Regulation	Grade	Comments
U-Turn Test		
7.7.C Turning Radius – any portion of the car <200 mm above ground is within 16 m wide lane		RIGHT TURN: LEFT TURN:
Figure-8 Test		
7.2.A Tire and Wheel Requirements – all wheels must remain on the ground		
7.1.B no body work shall contact moving structural members		
7.9 Dynamic Stability – vehicles must exhibit sufficient stability during test		
7.9.A Figure 8 – vehicle must negotiate figure-8 course in less than 9 seconds per side w/o hitting cones or showing signs of instability		TIME FOR FIGURE-8:
Braking Test		
7.9 Dynamic Stability – vehicles must exhibit sufficient stability during test		
7.5.B, 7.9.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:
Three-Wheel Cars with Rear Brake		
7.5.G.1 Performance – hold car with fr. Wheels elevated, dry pavement, forward pull $\geq 15\%$ of weight		VEHICLE WEIGHT =
		FORWARD PULL:
7.5.G.2 Volume Limiting Value – locked out		
Slalom Test		
7.9 Dynamic Stability – vehicles must exhibit sufficient stability during test		
7.9.C Slalom Test – Negotiate slalom course within appropriate time (11.5 s)		TIME: SPEED:
High Speed Stability		
7.9 Dynamic Stability – vehicles must exhibit sufficient stability during test		
7.9.B Stability at Speed – Maintains constant speed in a 3.5 meter lane		SPEED:

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Station Manager:

Entrance:

All drivers report to station with car, Green, Blue, or Yellow from Driver Registration, Driver Operations, Body & Sizing, Mechanical, Electrical, BPS

Station Grade:

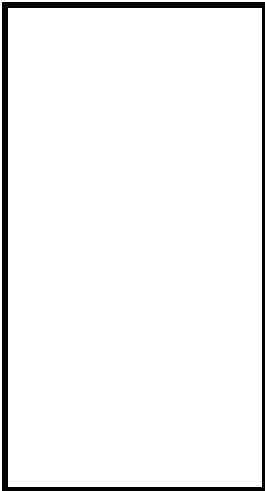
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Regulation	Lead	Chase	Scout	T&T	Other	Comments
Support Vehicles (9.4, 9.4.A – 9.4.D)						
All vehicles registered with ASC HQ						
Max 15 passenger van				/	/	
Roof mounted amber lights			/	/	/	
GPS for observer viewing	/		/	/	/	
Storage racks are secure and safe						
Support Vehicle Graphics (9.4.E)						
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 – provided on-site (both sides of each vehicle and trailer)						
Slow Moving Caravan Sign	/		/	/	/	
Radio Communication (9.5)						
Communication with solar car driver, which observer can monitor			/	/	/	
Hand's free comm. for all vehicle drivers						
Separate CB channel for ASC communications in all vehicles on route						
Safety Equipment (minimum requirements) (9.4.A – 9.4.D)						
Certified, stocked First Aid Kit			/	/	/	
ABC Fire Extinguisher			/	/	/	
Safety Vest (1 per person in vehicle)			/	/	/	
4 Orange Cones (minimum 12" high)			/	/	/	
Orange Warning Flag			/	/	/	
Battery MSDS, Spill Kit, and method of containment of battery fires	/		/	/	/	

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Safety Officer and Demonstration	Grade	Comments
4.4.A Safety – Team Safety Officer Name: _____		
4.4.A Safety officer provides proof of First Aid and CPR training		
4.4.A.3 Location of Safety Officer in Lead/Chase		
Demonstration of roadside safety procedures by team (role play)		



Station Manager:

Entrance:

All team vehicles with all equipment.
Lead and chase vehicles with all equipment and team members who will be in those vehicles; safety officer must be present

Station Grade:

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