1.1 Night Readability Ground Evaluation – UNAIDED

1.1.1 Objective of Test

The objective of this test is to evaluate unaided visual performance of the lighting system to assess compliance with 14 CFR Part 27 or 29 requirements

1.1.2 Test Set-Up

1) Aircraft in blacked out hangar or blacked out windows (If evaluation is accomplished in same session as NVG compatibility evaluation, use a blacked out hangar that is sealed from external light leaks.).
2) Use pilots 5’2” to 6’0” (157 to 183 cm) in height to assess both visibility and ability to reach controls.
3) Determine ability to turn off CAWS Panel (CB, fuse, etc.). Otherwise, be able to block the CAWS Panel from view with cardboard, etc.
4) Ensure that the appropriate voltage is provided to represent flight conditions.
5) Photograph cockpit, if able, to help document the evaluation
   a. Photograph basic aircraft non-NVIS lighting (if still enabled)
   b. Photograph NVIS Lighting

Night Unaided Readability Ground Evaluation

Evaluator(s):		Date:	
Applicant/STC Holder:		Make/Model:	
Modification/Kit Installer:		Serial No.:	
Operator:		Registration No.:	

1) Alternate lighting controls are easily identified, reached, and safely manipulated with one hand by pilot flying

Remarks/ Comments	
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2) If the NVIS lighting is on a separate switch from the primary lighting system, the switch is easily distinguished from the primary lighting switch.

Remarks/ Comments	
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3) NVIS lighting illuminates all switches and controls normally illuminated by the basic aircraft lighting system. (Evaluate need for cyclic/collective head lighting)

Remarks/ Comments	
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4) Alternate lighting design does not induce inadvertent action of controls

Remarks/ Comments	
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5) Lighting Levels – SET for Unaided Viewing Alternate lighting design and controls allow for balanced illumination of each portion of the instrument panel. (Include STBY Instruments)	
Remarks/ Comments	
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6) If overlays are used, verify that the overlay does not obscure instrument or gauge numbers, markings, or symbols.	
Remarks/ Comments	
☐ SAT ☐ UNSAT	
7) Filtered Instruments/gauges are sufficiently illuminated so that the entire display is readable from both front seat positions and other positions, including limitation markings and ranges, in accordance with 14 CFR § 27/29.1321, 27/29.1541(b)(2), 27/29.1543(b)	
Remarks/ Comments	
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8) POST LIGHTS/FLOOD LIGHTS: Instruments/gauges lit with post lights/floodlights are sufficiently illuminated so that the entire display is readable from both front seat positions and other positions, including limitation markings and ranges in accordance with 14 CFR § 27/29.1321, 27/29.1541(b)(2), 27/29.1543(b)	
Remarks/ Comments	
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9) POST LIGHTS: Alternate lighting on posts do not cause glare or distracting reflections off of gauges/instruments.	
Remarks/ Comments	
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10) The alternate lighting system (including floodlights) does not cause more glare/reflections off the windscreen/windows that the primary system. (Outside visibility is not decreased when using the alternate lighting system when compared to the original or primary lighting system)	
Remarks/ Comments	
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11) Map/Emergency/Flood lights do not cast shadows that obscure instrument markings, switches, or labels. Nor do they shine into the pilot's eyes or cause reflections off instruments that shine into the pilot's eyes	
Remarks/ Comments	
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12) Alternate lighting power source is separate from primary power source (unless applicant makes the "alternate" system the "primary" system). If "primary" system, then power requirements must meet 14 CFR 27/29 Requirements	
Remarks/ Comments	
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Night Unaided Readability Ground Evaluation

13) MASTER WARNING & WARNING LIGHTS

A. Filtered Master Warning, CAWS Panel warning lights that use NVIS Red are distinguishable as “red” compared to other lights on the instrument panel. (There are no other red lights on the instrument panel that are true red that could lead to confusion.)

	Remarks/ Comments
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B. Bright and distinguishable enough to capture the pilot’s attention

	Remarks/ Comments
☐ SAT ☐ UNSAT	

C. The color used for Red is uniform throughout the cockpit to avoid possible confusion. (NVIS Red looks “orange” compared to true red. The concern is confusion of NVIS Red for Amber.)

	Remarks/ Comments
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Night NVG Aided Readability Ground Evaluation

14) MASTER CAUTION & CAUTION LIGHTS

A. Filtered Master Caution, CAWS Panel caution lights that use NVIS Yellow are distinguishable as “amber/yellow” compared to other lights on the instrument panel. (Do not look green, white, or orange.)

Remarks/ Comments	
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B. Bright and distinguishable enough to capture the pilot’s attention

Remarks/ Comments	
☐ SAT ☐ UNSAT	

C. The color used for yellow/amber is uniform throughout the cockpit to avoid possible confusion. (NVIS Yellow has a slight green tinge compared to true yellow. Additionally, Amber may be confused with NVIS Red.)

Remarks/ Comments	
☐ SAT ☐ UNSAT	