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AgustaWestland AW189

NVG COMPATIBILITY REFERENCE HANDBOOK

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AW189
NVG CRH

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LISTA DELLE REVISIONI - REVISION HISTORY

REVISIONE ISSUE	DESCRIZIONE MODIFICHE CHANGE DESCRIPTION	DATA EMISSIONE ISSUE DATE
A (tot pag.8)	*First Issue*	13 August 2013
B (tot pag. 12)	*Second Issue updated with the A/C 7 testing activities result*	24 December 2013
C (tot pag. 13)	*Third Issue updated with further configuration certification*	19 December 2014
D (tot pag. 13)	*Fourth issue updated with VIP Kits, HISL and LIPS*	11 September 2015
E (tot pag. 14)	*Fifth issue updated with further configuration certification*	13 November 2015
F (tot pag. 14)	*Sixth issue in order to include an alternative separation wall.*	11 November 2016
G (tot pag. 15)	*Seventh issue in order to include the EMS panel.*	20 December 2016

REVISIONE ISSUE	DESCRIZIONE MODIFICHE CHANGE DESCRIPTION	DATA EMISSIONE ISSUE DATE
H (tot pag. 15)	*Eight issue in order to include the cargo hook load indicator, the full ECS control panel and the APU control panel.*	03 March 2017
I (tot pag. 15)	*Ninth issue in order to include the new integrated secondary flight display.*	07 June 2017
J (tot pag. 15)	*Tenth issue in order to include the ISAT 200 cockpit panel. Remove the kit 8G4390F00211 from the configuration items declared not compatible, since is a not applicable to TC configuration.*	15 December 2017
K (tot pag. 16)	*Eleventh issue to include the SATCOM Iridium Flightcell DZMX panel, external loudspeakers MP3, cargo hook control panel, hoist control panel, Galleon control panel and video downlink control panel.*	09 August 2018
L (tot pag. 16)	*Twelfth issue to include the 2ND VUFH RADI O FLEXCOMM control panel and new PSU.*	29 May 2019
M (tot pag. 16)	*Thirteenth issue to include the CCD control panel and new LEOSS Dual Handgrip Control Unit (DHCU).*	30 January 2020
N (tot pag. 16)	*Fourteenth issue to include AW189 equipped with Safran Aneto-1K Engines.*	26 May 2020
O (tot pag. 16)	*Fifteenth issue to include IR Formation lights Kit, Tail Rotor Tip light Ki and soft separation wall*	6 August 2020
P (tot pag. 22)	*Sixteenth issue to include Polycon New Generation Control Panel, new Cabin Hoist Control Panel and new Landing Gear Control Panel*	11 December 2020
Q (tot pag. 23)	*Seventeenth issue to include HISL Intensity Strobe light, Radar 1700, new Trakka Control Panel and new Misc panel.*	30 April 2021

REVISIONE ISSUE	DESCRIZIONE MODIFICHE CHANGE DESCRIPTION	DATA EMISSIONE ISSUE DATE
R *(tot pag. 24)*	*Eighteenth issue to include Mission Console Display and Satcom transceiver.*	24 September 2021
S *(tot pag. 24)*	*Ninghteenth issue to include Mission Console Display, Tetra Control Panel and 2ND Flexcomm Control Panel.*	14 September 2022

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1. SCOPE

The scope of the AW189 NVG Compatibility Reference Handbook is to keep trace of the AW189 Helicopter NVIS configuration. In particular, this document:

- provides the means to determine if a given AW189 configuration is compatible with NVIS operations
- provides information about how to manage the impact on NVIS compatibility of deviations and non-compliances

The listed components are the one and only ones approved for NVIS operations

2. APPLICABILITY

AW189 Model.

3. REFERENCES

3.1 Reference Documents

1. 189G3360T001/2 "AW189 - Internal and External Lighting System Ground and Flight NVG Test Report"
2. 189G3360E001 "AW189 - NVG Policy"
3. 189G3360T002/2 "AW189 SAR Configuration Night/NVIS Internal Lighting System Ground And Flight Test Report"
4. 189G3340T007/2 AW189 Hoist Light System Ground and Flight Test Report
5. 189G2310T004/2 AW189 Radio TFM-550 NVIS Evaluation Test Report
6. 189G3360T003/2 "AW189 VIP Cockpit Lighting Night & NVIS Test Report"
7. 189G3340T001/2 "AW189 Red/White Anti-Collision Light (HISL) Ground/Flight Test Report"
8. 189G3340T003/2 "AW189 Searchlight A800 (Trakka) Flight Test Report"
9. 189G3340T004/2 "AW189 landing Light Reposition (Underbelly) Ground/Flight Test Report"
10. 189G3340T005/2 "AW189 Main & Tail Rotor Light System Ground/Flight Test Report"
11. 189G3340T006/2 "AW189 External Floodlight System Ground/Flight Test Report"
12. 189G3340T008/2 "AW189 Single Basic Anti-Collision Light Ground/Flight Test Report"
13. 189G3340T009/2 "AW189 VIP Footstep Lighting Ground/Flight Test Report"
14. 189G3340T010/2 "AW189 Overdoor Light System Ground/Flight Test Report"
15. 189G3340T011/2 "AW189 White Ident Light System Ground/Flight Test Report"
16. 189G3340T012/2 "AW189 Tail Logo Light System Ground/Flight Test Report "
17. 189G3360T004/2 "AW189 Falkland SAR Cabin Customization Night/NVIS Evaluation Report"
18. 189G3360T005/2 "AW189 STAND-BY INSTRUMENT (MODEL ISFD 40)"
19. 189G2150T004/2 "AIR CONDITIONING CONTROL PANEL NIGHT & NVIS EVALUATION REPORT"
20. 189G3360T008/2 "AW189 SATCOM SKYTRAC ISAT-200A CDP Day/N"
21. CS NDC-189G2315-001/03_A "Compliance Statement for Satcom Flightcell DZMX Control Panel (HMI/NVG Aspects)
22. 189G3360T009/2 "AW189 - Foldable Hoist Control Panel & New Cargo Hook Control Panel Ground Test Report"
23. 189G9330T002/2 "AW189 Kit Galleon Video Recorder Ground & Flight Test Report"
24. 189G9300T001/2 "AW189 Kit ECS Evenlode Video Downlink Ground & Flight Test Report"
25. 189G2350T001/2 "AW189 External Loudspeaker Ground & Flight Test Report"
26. CS NDC-189G2520-021/03_A "Compliance Statement for NVG aspects for Royal Thai Police Customization"
27. CS NDC-189G2310-006/02_A "Compliance statement for NVG aspects of the 2nd VUHF RADIO FLEXCOMM Control Panel"

28.   189G3360T010/2 "AW189 NVIS/HMI Assessment for SEIC Customization Ground & Flight Test report"
29.   189G9350T004/2 "AW189 LEOSS (Leonardo Electro Optic Surveillance System) Ground/Flight Test Report"
30.   189G3360T011/2 "AW189K Customization HMI/NVIS Assessment Ground Test Report"
31.   189G3340T015/2 "AW189 IR Formation Lighting System Ground and Flight Test Report"
32.   189G3340T016/2 "AW189 Tail Rotor Lights Ground and Flight Test Report"
33.   189G2350T013/2 "AW189 ICS Polycon New Generation Ground & Flight Test Plan"
34.   189G2591T007/2 "AW189 Single Hoist Electrical Operator Panels Ground & Flight Test Report"
35.   CS NDC-189G3340-008/01 "Compliant Statement for HMI and NVG aspects for HISL LFD/309/001"
36.   CS NDC-189G9370-002/02 "Compliance Statement for RDR 1700A Control Panel 364-4000-003 NVIS evaluation "
37.   189G3340T017/2 "Trakka Control Panel Ground & Flight Test Report"
38.   189G3360T015/2 "AW189 NVIS FWD Bulkhead P/N 6A8W2581A001003XYZ Night & NVIS Evaluation Report"
39.   CS NDC-189G3360-001/02 "Compliance Statement for integration of LGT and MISC CONTROL PANEL P/N 8G3110V00551 on AW189K"
40.   "NDC-189G4600-011/02 New MISC PNL Integration For AW189 With GE Engine"
41.   189G4620T036/2 "Mission Console Ground and Flight Test Report"
42.   189G2315T003/2 "AW189 CELL/SATCOM Flightcell DZMx"
43.   189G4620T044/ 2 "AW189 Mission Console NLCG GFTR"
44.   189G2310T011/2 "AW189 2ND VUHF FLEXCOMM II WITH CTRL PNL"
45.   189G2310T010/2 "AW189 RADIO TETRA COBHAM 1X GFTR"

4. ACRONYMS AND DEFIITIONS

4.1 Definitions

The definition(s) presented here are additional to any which are otherwise applicable:

-     NVIS compatibility

    An item, installation or equipment is defined as "NVIS compatible" when its installation on the helicopter does not affect the capability of performing NVIS operations. If a non NVIS compatible item is installed on the aircraft, NVIS operations on that aircraft are prohibited, unless the item is deactivated according to the instructions provided in this document.
    When referred to the whole helicopter configuration, "non NVIS compatible" means that NVIS operations are not allowed on the aircraft.
    If a helicopter configuration is NVIS compatible, NVIS operations on that aircraft are allowed, provided other limitations and/or restrictions listed in the AW189 Rotorcraft Flight Manual are applied.

-   NVIS sensitivity

    A modification is defined as "NVIS sensitive" if one or more of the following occur:

    -   the modification involves an item which emits light and is installed in the cockpit or in the cabin (i.e. radio control panels, displays)
    -   the modification involves an item which emits light and is installed on an external part of the helicopter (i.e. navigation lights)
    -   it involves a surface which could reflect light towards the pilot or the co-pilot (i.e. new external cowlings, shining surfaces in cockpit, skis)

5. EVALUATION OF NVIS COMPATIBILITY OF AN HELICOTPER CONFIGURATION

This paragraph explains how to determine when a given AW189 helicopter configuration is NVIS compatible.

In order for a given AW189 configuration to be NVIS compatible, all of the following conditions have to be verified:

- The "KIT NVIS CONTROLLER" P/N 8G3360F00111 (including the Cockpit Soft Separation Wall corresponding to P/N 8G2520L00331) or P/N 8G3360F00112 must be installed on the aircraft.

  The KIT NVIS CONTROLLER when the NVG Mode is ON the pilot shall switch OFF all the passenger cabin light sources.

  In alternative to the Cockpit Soft Separation Wall P/N 8G2520L00331 can be used the following approved curtains:
- KIT COCKPIT CABIN SEPARATION WALL P/N 8G2520F00611
- COCKPIT SOFT SEPARATION WALL P/N 8G2520L00332- P/N 8G2520A08512
- COCKPIT SOFT SEPARATION WALL P/N 8G2520L07531 - P/N 8G2520A49211
- COCKPIT SOFT SEPARATION WALL P/N 8G3320L08931 – P/N 8G2520A47111
- FWD BULKHEAD CONFIGURATION - P/N 6A8W2581A001003 (NOTE 1)

NOTE 1: In order to be NVIS compatible, the FWD BULKHEAD CONFIGURATION (RIGID LINERS) P/N 6A8W2581A001003 must be installed in conjunction with the STC EASA No. 10055698.

No NVIS sensitive equipments can be operated or left switched ON during NVIS Operations
It must be possible to switch these equipments OFF by the pilot.

6. DECAL

The helicopter NVIS decals consist of two cases:

6.1. Helicopter NVIS Approved

If the "KIT NVIS CONTROLLER" P/N 8G3360F00111 or P/N 8G3360F00112 is installed on the helicopter, a dedicated decal (P/N 999-2000-06-220) must be installed in clear view of the pilot to specify if the helicopter configuration is NVIS compatible:

Figure 1 - "NVIS approved" – Decal

6.2. Helicopter NVIS Not Approved

When the "KIT NVIS CONTROLLER" is not installed or the helicopter configuration is not NVIS compatible, the following Decal (P/N 999-2000-06-221) must be installed:

Figure 2 - "NVIS not approved" – Decal

7. GOGGLES

Only type I class B, 3 rd generations goggles are approved for NVG aided flight on AW189.
Approved models are:

- AN/AVS 9 ITT F4949 (M-P)
- Nogalite NL-93

Nogalite NL-93 goggles are not approved by FAA, so their use is not allowed on FAA registered helicopters. Helmets shall be suitable for the above mentioned NVGs.

8. CHANGES TO THE APPROVED CONFIGURATION

Changes to Approved Configuration have to be managed in accordance with the guidelines provided in document n. 189G3360E001 "AW189-NVG POLICY".

In particular, installations covered by STC shall assess the NVIS compatibility. Competent Authority shall approve such installations considering NVIS operations.

9. NIGHT VISION GOGGLE OPERATIONS - OUTCOME FROM CERTIFICATION TESTING

This Chapter resumes the outcome of the Testing activity (details contained in Ref. 1) performed on AW189 in order to clearly identify:

- The Configuration items declared NVIS Compatible
- The Configuration items declared not NVIS compatible
- The Configuration Items that impose a dedicated recommendation in the manual.

Any other Type Design Configuration Item not included in the following chapters is considered not NVG sensitive or compatible.

9.1. CONFIGURATION ITEMS DECLARED NVIS COMPATIBLE

The following table contains the list of NVG sensitive equipment that has been demonstrated to be compatible with AW149 NVG operations. In particular, the installation of each item does not affect the NVG compatibility of the helicopter, provided the relevant restriction, explained in column 3, are taken into account.

Any non NVG sensitive equipment, when installed and operated according to approved drawings/instructions, is considered NVG compatible.

Therefore, non NVG sensitive equipment is not contained in the following tables.

Explanatory Notes:

"Part Number" (Column 1) — is the part number which identifies the panel/installation or kit.

"Description" (Column 2) — is the description of the equipment/installation which has been demonstrated to be compatible with AW149 NVG operations.

"Basic/kit" (Column 3) – identifies if the equipment is part of the basic aircraft or is part of a kit

"P/N KIT" (Column 4) – is the part number which identifies the kit

"KIT Description" (Column 5) – is the description of the kit

"Zones" (Column 6) – identifies the zone of the aircraft where the equipment is installed

"Restriction/Note" (Column 7) — contains an explanation of the restrictions and note under which the item can be considered as NVG compatible. When this column is left blank, it means that the item, when installed, activated and operated according to approved limitations and instructions contained in the dedicated supplement of the Manual, is NVG compatible.

If one or more items listed in this table are installed, but the relevant restriction (Column 7) has not been applied, the item has to be considered as non NVG compatible, and NVG operations are not permitted on the aircraft.

Cockpit						
P/N declared NVG Compatible	**Description**	**Basic/Kit**	**P/N Kit**	**Kit Description**	**Zones**	**Restrictions / Notes**
4F3150V00151	PLT MASTER WARNING & CAUTION INDICATORS	Basic	NA	NA	Instrument panel	
4F3150V00251	CPLT MASTER WARNING & CAUTION INDICATORS	Basic	NA	NA	Instrument panel	
CM20AW	PLT & CPLT CLOCK	Basic	NA	NA	Instrument panel	
MN4630V00151	PLT/CPLT PRIMARY AND MULTIFUNCTION DISPLAY	Basic	NA	NA	Instrument panel	

Cockpit						
P/N declared NVG Compatible	**Description**	**Basic/Kit**	**P/N Kit**	**Kit Description**	**Zones**	**Restrictions / Notes**
8G2620V00151	FIRE & EXTINGUISHER CONTROL PANEL	Basic	NA	NA	Instrument panel	
8G1130L00251	V$_{NE}$ PLACARD	Basic	NA	NA	Instrument panel	
8G1130L00552	V$_{NE}$ PLACARD	Basic	NA	NA	Instrument panel	
40004-03-01	INTEGRATED SECONDARY FLIGHT DISPLAY	Basic	NA	NA	Instrument panel	
40004-02-01	INTEGRATED SECONDARY FLIGHT DISPLAY	Basic	NA	NA	Instrument panel	
4F4630V00251	DISPLAY CONTROL PANEL	Basic	NA	NA	Interseat Console	
822-0884-701	MCDU 3000	Basic	NA	NA	Interseat Console	
8G2350A02731	ICS CONTROL PANEL	Basic	NA	NA	Interseat Console	
4F4630V00351	CURSOR CONTROL DEVICE	Basic	NA	NA	Interseat Console	
8G4620V00351	DISPLAY UNIT	Basic	NA	NA	Interseat Console	
8G7610V00152	ENGINE CONTROL PANEL	Basic	NA	NA	Interseat Console	
4F2210V00251	AFCS	Basic	NA	NA	Interseat Console	
8G4930V00151	APU CONTROL PANEL	Basic	NA	NA	Interseat Console	
8G4930V00152	APU CONTROL PANEL	Basic	NA	NA	Interseat Console	
4F4630V00451	REVERSIONARY CONTROL PANEL	Basic	NA	NA	Interseat Console	
4F4630V00551	DISPLAY DIMMING CONTROL PANEL	Basic	NA	NA	Interseat Console	
8G3110V00351	MISCELLANEOUS & LIGHTS CP - BASIC	Basic	NA	NA	Interseat Console	
8G3110V00451	MISCELLANEOUS & LIGHTS CP - BASIC	Basic	NA	NA	Interseat Console	
4F4620V00551	DATA TRANSFER DEVICE	Basic	NA	NA	Interseat Console	
8G4620V00451	DATA TRANSFER DEVICE	Basic	NA	NA	Interseat Console	
4F2490V00351	EPGDS CONTROL PANEL	Basic	NA	NA	Interseat Console	
8G3230V00132	LANDING GEAR CONTROL PANEL	Basic	NA	NA	Interseat Console	

Cockpit						
P/N declared NVG Compatible	**Description**	**Basic/Kit**	**P/N Kit**	**Kit Description**	**Zones**	**Restrictions / Notes**
8G3230V00133	LANDING GEAR CONTROL PANEL	Basic	NA	NA	Interseat Console	
8G3230V00134	LANDING GEAR CONTROL PANEL	Basic	NA	NA	Interseat Console	
4F3310V00151	UTILITY LIGHTS	Basic	NA	NA	Overhead Panel	
4F3310A00131 727-0926/01	STORM LIGHTS ASSY STORM LIGHT	Basic	NA	NA	Overhead Panel	
3G3320V00651	NVG DOME LIGHT	Basic	NA	NA	Overhead Panel	
4F2460V00151	LH CIRCUIT BREAKER PANEL	Basic	NA	NA	Overhead Panel	
4F2460V00251	RH CIRCUIT BREAKER PANEL	Basic	NA	NA	Overhead Panel	
8G3350A00331 8G3350V00151	CABIN FLOOD / EMERGENCY LIGHT	Basic	NA	NA	Overhead Panel	Available also for passenger cabin
8G2490L00151	ILLUMINATED CB PANEL (BASIC)	Basic	NA	NA	Overhead Panel	HEAT & VENT
8G2460V00351	CIRCUIT BREAKER PANEL 1	Basic	NA	NA	Overhead Panel	Applicable to AW189 equipped with Safran Aneto-1K Engines.
8G2460V00451	CIRCUIT BREAKER PANEL 2	Basic	NA	NA	Overhead Panel	Applicable to AW189 equipped with Safran Aneto-1K Engines.
8G7610V00351	ANETO 1K ENGINE PANEL	Basic	NA	NA	Overhead Panel	Applicable to AW189 equipped with Safran Aneto-1K Engines.
3G2592L00151	HOOK LOAD INDICATOR (NVG)	KIT	8G2592F00111	KIT CARGO HOOK	Instrument panel	
3G2592L00151	HOOK LOAD INDICATOR (NVG)	KIT	8G2592F00111	KIT CARGO HOOK	Instrument Panel	
8G2592V00151	CARGO HOOK LOAD INDICATOR (NVG)	KIT	8G2592F00111	KIT CARGO HOOK	Instrument Panel	
8G2150V01551	ECS CONTROL PANEL	KIT	8G2150F00111	KIT AIR CONDITIONING	Interseat Console	
8G2150V02551	CONTROL PANEL FULL ECS	KIT	8G2150F00112 8G2150F00211	KIT AIR CONDITIONING KIT AIR CONDITIONING SYS WITH PWR DISTR	Interseat Console	

Cockpit						
P/N declared NVG Compatible	**Description**	**Basic/Kit**	**P/N Kit**	**Kit Description**	**Zones**	**Restrictions / Notes**
3G2592V00152	CARGO HOOK CONTROL PANEL (NVG)	KIT	8G2592F00111	KIT CARGO HOOK	Interseat Console	
6F2592V00151	CARGO HOOK CONTROL PANEL	KIT	8G2520F04811	KIT SFD KOREA CUSTOMIZATION	Interseat Console	
8G3110V00251	MISCELLANEOUS CONTROL PANEL	KIT	8G3360F00111	KIT NVIS CONTROLLER	Interseat Console	
8G3110V00551	MISCELLANEOUS CONTROL PANEL	KIT	8G3360F00112	KIT NVIS CONTROLLER	Interseat Console	
NPX 138N-900	VHF/FM NPX CONTROL PANEL	KIT	8G2310F00211 8G2310F00711 8G2310F01111	KIT VHF/FM NPX138 KIT VHF/FM NPX138 UNDERBELLY KIT VHF/FM NPX138 COMMON	Interseat Console	
345-6196-04	ELT SWITCH	KIT	8G2560F00211	KIT ELT FIXED	Interseat Console	
503-22-NV	ELT DEPLOYABLE CONTROL PANEL	KIT	8G2560F00311 8G2560F01411	KIT ELT DEPLOYABLE KIT ELT DEPLOYABLE GREY	Interseat Console	
3G9560V00559	EMERGENCY FLOATATION PANEL	KIT	8G9560F00111 8G9560F00211	KIT EMERGENCY FLOATS KIT EMERGENCY FLOATS UNDERBELLY	Interseat Console	
1616-055-12	SKY CONNECT CONTROL PANEL	KIT	8G4390F00111	KIT SATCOM (SKYCONNECT) MMU II	Interseat Console	
DZP_04-302	DZMX TRANSCEIVER	KIT	8G4390F00411	KIT SATCOM IRIDIUM FLIGHTCELL DZMX	Interseat Console	
31300-0201-1200	CONTROL PANEL	KIT	8G2310F00111 8G2310F00511 8G2310F01311	KIT V/UHF FLEXCOM II KIT V/UHF FLEXCOM II UNDERBELLY KIT 2ND V/UHF FLEXCOM II	Interseat Console	
4F2120V00551	PANEL, CONTROL - HEAT AND VENT	KIT	8G2120F00111	KIT FORCED VENTILATION	Interseat Console	
021013-1000000	PLT/CPLT CONTROL PANEL	KIT	8G3340F00811	KIT SEARCHLIGHT TRAKKA	Interseat Console	
021027-0000001	PLT/CPLT CONTROL PANEL	KIT	8G3340F00811	KIT SEARCHLIGHT TRAKKA	Interseat Console	
4135364-2	PANEL-MOUNTED CONTROL UNIT (PCU)	KIT	8G9350F00211 8G9350F00311	KIT FLIR STAR SAFIRE 380 HD KIT FLIR STAR	Interseat Console	

Cockpit						
P/N declared NVG Compatible	Description	Basic/Kit	P/N Kit	Kit Description	Zones	Restrictions / Notes
				SAFIRE 380 HD (NO MTI)		
4127344-1	LASER INTERLOCK UNIT (LIU)	KIT	8G9350F00211 8G9350F00311	KIT FLIR STAR SAFIRE 380 HD KIT FLIR STAR SAFIRE 380 HD (NO MTI)	Interseat Console	
5836-CR-CRP-01-1000	DIGITAL RECORDER UNIT	KIT	8G9330F00211	KIT SAAB VIDEORECORDER	Interseat Console	
364-4000-003	CN-1706A RADAR CONTROL PANEL	KIT	8G9370F00111	KIT RADAR 1500B	Interseat Console	
364-4000-101	CN-1706A RADAR CONTROL PANEL	KIT	8G9370F00111	KIT RADAR 1700A	Interseat Console	
991095-1	COMMUNICATIONS TRANSCEIVER TFM-550	KIT	8G2310F00911	VHF/FM-H TFM-550G FM	Interseat Console	
3G1830V00251	AVCS CTRL PANEL	KIT	8G1830F00111 8G1830F00211 8G1830F00311	KIT AVCS KIT AVCS COMFORT KIT AVCS STANDARD	Interseat Console	
8G2564V00151	EMS CONTROL PANEL	KIT	8G2564F00111	KIT EMS SELFCONTAINED PROVISIONS	Interseat Console	
104-300-02	COCKPIT DISPLAY PANEL CDP-300C	KIT	4F4390F00111 8G4390F00511	KIT SATCOM KIT SATCOM SKYTRAC ISAT200R	Interseat Console	
DZP_04-800	DZMX TRANSCEIVER 4G	KIT	8G2315F00111	KIT SATCOM IRIDIUM FLIGHTCELL DZMX STD	Interseat Console	
DZP_04-800-BFW	DZMX TRANSCEIVER 4G	KIT	8G2315F00111 8G2315F00112	KIT SATCOM IRIDIUM FLIGHTCELL DZMX STD	Interseat Console	
01-21694-A-00-0	ENVELODE ENCRYPTION CONTROL UNIT, ECU-NVG-V2	KIT	8G9300F00211	KIT VIDEO DOWNLINK	Interseat Console	
CP50-001	CONTROL AND DISPLAY UNIT	KIT	8G9330F00411	KIT MISSION RECORDER GALLEON	Interseat Console	
LSC22-003N	PA CONTROL PANEL	KIT	8G2350F01112	KIT EXTERNAL LOUDSPEAKERS 700W (MP3)	Interseat Console	
8G2591A22931	SINGLE HOIST, CONTROL PANEL BLANKED SW	KIT	8G2591F00211	KIT SINGLE HOIST FOLDABLE	Interseat Console	6F2591V00151 part of the 8G2591A22931
EA4600V677-001	CURSOR CONTROL DISPLAY	KIT	8G4630F00111	KIT CCD	Interseat Console	
3G3340V01051	EXT LIGHTS CONTROL PANEL (NVG)	KIT	8G3340F01911	KIT IR FORMATION LIGHT	Interseat Console	

Cockpit						
P/N declared NVG Compatible	Description	Basic/Kit	P/N Kit	Kit Description	Zones	Restrictions / Notes
AA21-407	EXTERNAL SPEAKERS PANEL	KIT	8G2350F01111	KIT EXTERNAL LOUDSPEAKERS 700W	Interseat Console	
2032659V01-20	DUAL HAND CONTROL UNIT (DHCU)	KIT	8G9350F00411	KIT LEOSS	Interseat Console	
CH150-14-00	CONTROL PANEL	KIT	8G2310F01911	KIT RADIO TETRA	Interseat Console	
8G2490L00251	ILLUMINATED Circuit Braker PANEL (FULL)	Basic KIT	8G2150F00111 8G2150F00211	KIT AIR CONDITIONING KIT AIR CONDITIONING SYS WITH PWR DISTR	Overhead Panel	
8G3000L00251	ILLUMINATED CB PANEL IPS	KIT	8G3000F00111 8G3000F00211 8G3000F00212 8G3000F00311	FULL ICE PROTECTION SYSTEM KIT KIT LIMITED ICE PROTECTION SYSTEM KIT LIMITED ICE PROTECTION SYSTEM (WITHOUT VAM) KIT FULL ICE PROTECTION SYSTEM FOR BASIC	Overhead panel	
4F3350A02331 4F3350A02431 4F3350A02531 4F3350A02631 4F3350A02731	HEELS LIGHT ASSY	KIT	4F3350F00111 8G3350F00211 8G3350F00311 8G3350F00511	KIT HEELS KIT HEELS KIT HEELS FOR SOFT LINERS KIT HEELS FOR BUBBLE WINDOWS	Door	Lights installed on pilot/copilot door

Table 1: Cockpit PN's Declared NVIS Compatible

Cabin						
P/N declared NVG Compatible	**Description**	**Basic/Kit**	**P/N Kit**	**Kit Description**	**Zones**	**Restrictions / Notes**
4F3350A02831 4F3350A02931 4F3350A03031 4F3350A03131 4F3350A03231 4F3350A03331 4F3350A03431 4F3350A03531 4F3350A03631 4F3350A03731 8G3350A00231	HEELS LIGHT ASSY FIXED WINDOW FWD HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY HEELS LIGHT ASSY FIX WIND. AFT FUEL AREA	KIT	4F3350F00111 8G3350F00211 8G3350F00311 8G3350F00511	KIT HEELS KIT HEELS KIT HEELS FOR SOFT LINERS KIT HEELS FOR BUBBLE WINDOWS	LH/RH Sidewall	Lights installed on passengers transparent
ACP53-002	AUDIO CONTROL PANEL	KIT	8G2350F01011	KIT ICS NAT ACP 53	LH/RH Sidewall	
8G3320A05631 690000200	GOOSNECK LIGHT ASSY GOOSENECK FLEXI LIGHT	KIT	8G2520F02311	KIT FALKLAND CUSTOMIZATION	on Mission consolle	
31300-0201-1200	CONTROL PANEL	KIT	8G2520F02311	KIT FALKLAND CUSTOMIZATION	on Mission consolle	

Cabin						
P/N declared NVG Compatible	Description	Basic/Kit	P/N Kit	Kit Description	Zones	Restrictions / Notes
8G3320V00251	CABIN LIGHT CONTROL PANEL	KIT	8G2500F00111 8G2500F00211 8G2500F00311 8G2500F00411 8G2500F00511 8G2500F06311	KIT CABIN INTERIOR HARD LINER DELUXE KIT CABIN SOFT LINER KIT CABIN INTERIOR HARD LINER STANDARD KIT CABIN INTERIOR COMBINED LINER KIT CABIN LIGHT HARD LINER	FWD RH Sidewall	
3G2591V00152	HOIST CONTROL PANEL	KIT	8G2591F00111	KIT EXTERNAL HOIST	FWD RH Sidewall	
6F2591V00151	HOIST CONTROL PANEL	KIT	8G2591F00112	KIT EXTERNAL HOIST		
8G2591A22831	SINGLE HOIST, OP. CONTROL PANEL BLANKED SW	KIT	8G2591F00211	KIT SINGLE HOIST FOLDABLE	FWD RH Sidewall	3G2591V002351 part of 8G2591A22831
DP178-6	HOVER TRIM CONTROLLER	KIT	8G2220F00111	KIT WINCH TRIM CONTROLLER	FWD RH Sidewall	
8G2591V01251	AC DUAL HOIST OPERATOR CONTROL PANEL	KIT	8G2591F00311	KIT DOUBLE HOIST (SIDE BY SIDE) GOODRICH	FWD RH Sidewall	
8G3340V00251	HOIST LIGHT CONTROL PANEL	KIT	8G3340F01111 8G3340F01211	KIT PRIMARY HOIST LIGHT UNDERBELLY KIT PRIMARY HOIST LIGHT	FWD RH Sidewall	
8G3340V00351	SECONDARY HOIST LIGHT CONTROL PANEL	KIT	8G3340F01011	KIT SECONDARY HOIST LIGHT UNDERBELLY	FWD RH Sidewall	
3G2350I00231	CTRL PANEL CP50	KIT	8G2350F00811	KIT POLYCON NEW GENERATION	FWD RH Sidewall	
LCD1713-140	MISSION DISPLAY	KIT	8G4620F00211/212 8G4620F00311 8G4620F00411	KIT FOLDABLE AFT MISSION CONSOLE KIT FOLDABLE SECOND DISPLAY KIT MISSION CONSOLE 2 LCD TOTEM	Roof Roof FWD RH Cabin	

Cabin						
P/N declared NVG Compatible	Description	Basic/Kit	P/N Kit	Kit Description	Zones	Restrictions / Notes
727-1902/01	MISSION DISPLAY	KIT	8G4620F00511	KIT FWD MISSION CONSOLLE	FWD LH Cabin	
31300-0201-1200	CONTROL PANEL	KIT	8G2310F01811	2ND VUHF FLEXCOMM II WITH CONTROL PANEL IN CABIN	AFT Cabin, between Fuel Compartment	
8G3320V00151 8G3320V00152	SKY LIGHT	KIT	8G2500F00111 8G3320F00311	KIT CABIN INTERIOR HARD LINER DELUXE KIT SKY LIGHT	Roof	PSU lights are considered NVG compatible, only if the light shielding kit is installed on the A/C, between the cockpit and the cabin.
8G2520V00251	PASSENGERS SERVICE UNIT (FULL)	KIT	8G2500F00111	KIT CABIN INTERIOR HARD LINER DELUXE	Roof	PSU lights are considered NVG compatible, only if the light shielding kit is installed on the A/C, between the cockpit and the cabin.
8G2520V00151	PASSENGERS SERVICE UNIT (BASIC)	KIT	8G2500F00111 8G2500F00311	KIT CABIN INTERIOR HARD LINER DELUXE KIT CABIN INTERIOR HARD LINER STANDARD	Roof	PSU lights are considered NVG compatible, only if the light shielding kit is installed on the A/C, between the cockpit and the cabin.
8G2520V01751	PASSENGER SERV UNIT (INTERMEDIATE IVORY)	KIT	8G2520F05711	KIT RTP CUSTOMIZATION	Roof	PSU lights are considered NVG compatible, only if the light shielding kit is installed on the A/C, between the cockpit and the cabin.

Cabin						
P/N declared NVG Compatible	Description	Basic/Kit	P/N Kit	Kit Description	Zones	Restrictions / Notes
8G2520V01851	PASSENGER SERVICE UNIT (BASIC IVORY)	KIT	8G2520F05711	KIT RTP CUSTOMIZATION	Roof	PSU lights are considered NVG compatible, only if the light shielding kit is installed on the A/C, between the cockpit and the cabin.
8G2520V01951	PASSENGER SERVICE UNIT (FULL IVORY)	KIT	8G2520F05711	KIT RTP CUSTOMIZATION	Roof	PSU lights are considered NVG compatible, only if the light shielding kit is installed on the A/C, between the cockpit and the cabin.
1000-232-002	MONITOR	KIT	8G2330F00111	KIT VISUAL/AUDIO PAX ADDRESS SYSTEM	Roof	LCD are considered NVG compatible, if a soft separation wall (or equivalent NVG approved) is installed on the A/C, between the cockpit and the cabin
8G3350A00331 8G3350V00151 727-1088/01	CABIN FLOOD / EMERGENCY LIGHT FASTEN SEAT BELT INDICATOR	KIT	8G2500F00111 8G2500F00211 8G2500F00311 8G2520F00411 8G2520F00511 8G2520F06311	KIT CABIN INTERIOR HARD LINER DELUXE KIT CABIN SOFT LINER KIT CABIN INTERIOR HARD LINER STANDARD KIT CABIN INTERIOR COMBINED LINER KIT CABIN LIGHT HARD LINER	Roof	

Table 2: Cabin PN's Declared NVIS Compatible

External						
P/N declared NVG Compatible	Description	Basic/Kit	P/N Kit	Kit Description	Zones	Restrictions / Notes
109-0740V33-101	ANTICOLLISION LIGHT	Basic Kit	8G3340F01711 8G3340F01811	KIT LOWER ANTICOLLISION LIGHT RED KIT LOWER ANTICOLLISION LIGHT RED U/B	Belly	
4F3340V00151	STEERABLE LANDING LIGHT	Basic KIT	8G3340F01011 8G3340F01111 8G3340F01211	KIT SECONDARY HOIST LIGHT UNDERBELLY KIT PRIMARY HOIST LIGHT UNDERBELLY KIT PRIMARY HOIST LIGHT	Belly	
0230749-005	DOWNWASH LIGHT-HID/IR LED 75W	KIT	8G3340F00911	KIT EXTERNAL FLOOD LIGHT	Belly	
8G3340V00851	WHITE IDENT LIGHT	KIT	8G3340F01311	KIT LOWER STROBE WHITE	Belly	Inhibited by the IOM software when helicopter lighting mode is in NVG.
LFD/260/001	HISL ANTICOLLISION LIGHT	KIT	8G3340F01611	KIT HIGH INTENSITY STROBE LIGHT	Belly	The high intensity white mode is inhibited by the IOM software when helicopter lighting mode is in NVIS. Red mode is however positively evaluated for use with NVG.
LFD/309/001	HISL ANTICOLLISION LIGHT	KIT	8G3340F01611	KIT HIGH INTENSITY STROBE LIGHT	Belly	The high intensity white mode is inhibited by the IOM software when helicopter lighting mode is in NVIS. Red mode is however positively evaluated for use with NVG.
8G3340A22331	FOOTSTEP LIGHT ASSY	KIT	8G5260F00211	KIT ELECTRICAL FOOTSTEP	Belly	
3G3340V00951 8G3340A24131 3G3340A03031 109-0740V01-137	ANTICOLLISON LIGHT RED/IR (NVG) IR UPPER FORMATION LIGHT IR FORMATION LIGHT ASSY LIGHT POSITION WHITE	KIT	8G3340F01911	KIT IR FORMATION LIGHTS	Belly	

External						
P/N declared NVG Compatible	Description	Basic/Kit	P/N Kit	Kit Description	Zones	Restrictions / Notes
8G3340V00751	OVERDOOR LIGHT	KIT	8G3340F01511	KIT OVER DOOR LIGHT	LH/RH sidewall	Inhibited by the IOM software when helicopter lighting mode is in NVG.
212090-0034500	SEARCHLIGHT WHITE WITH FILTERS	KIT	8G3340F00811	KIT SEARCHLIGHT TRAKKA	LH sidewall	
LFD/286/001	MAIN ROTOR TIP LIGHT	KIT	8G3340F00411	KIT MAIN ROTOR TIP LIGHT	Upper fuselage	
8G3340A03231	TAIL ROTOR TIP LIGHT ASSY	KIT	8G3340F00511 8G3340F00611	KIT TAIL ROTOR TIP LIGHT KIT TAIL ROTOR TIP LIGHT UNDERBELLY	Sponson	
727-1843/01	TAIL ROTOR TIP LIGHT	KIT	8G3340F02011	KIT TAIL ROTOR TIP LIGHT	Sponson	
109-0740V01-141 109-0740V01-139 109-0740V01-137	GREEN NAVIGATION LIGHT RED NAVIGATION LIGHT WHITE NAVIGATION LIGHT	Basic	NA	NA	Tail plane	
727-0877/02 727-0878/02	LH STROBE LIGHT RH STROBE LIGHT	KIT	8G3340F00211	KIT STROBE LIGHTS	Tail plane	
8G3340V00951	TAIL LOGO LIGHT	KIT	8G3340F01411	KIT TAIL LOGO LIGHT	Tail plane	Inhibited by the IOM software when helicopter lighting mode is in NVG.

Table 3: External PN's Declared NVIS Compatible

9.2. CONFIGURATION ITEMS DECLARED NOT NVIS COMPATIBLE

This chapter is dedicated to both:

- Configuration Items not tested within the AW189 Civil Certification activities and whose lighting behavior during NVIS operations is considered unknown;
- Configuration Items submit to testing campaign and declared "Not compatible with NVIS Operations".

P/N	Item Title	Restrictions
3G9360V00151	OPLS CONTROL PANEL	Select OFF during NVIS OPS

Table 4: Items Declared not NVIS Compatible

9.3. ITEMS THAT IMPOSE A DEDICATED RECOMMENDATION IN THE MANUAL

In order to prevent any light leakage between the cockpit and the cabin, therefore impacting the NVIS operations of AW189, a Cockpit Soft Separation Wall corresponding to P/N 8G2520L00331 (or equivalent approved) has been designed and introduce within the H/C configuration. It shall be installed on the whole AW189 fleet with missions including NVIS operations.
In the following table, are resumed the Impacts on the RFM linked to the whole Type Design configuration, and in particular, dedicated to this item.

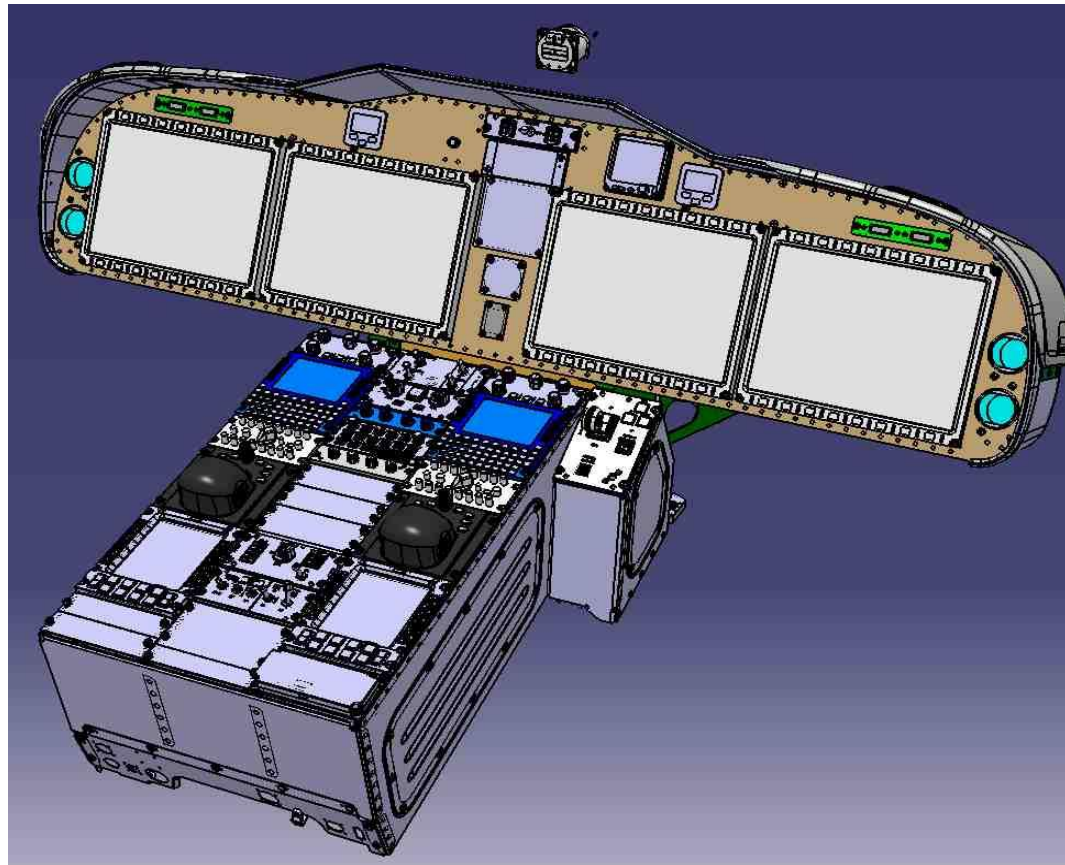| P/N	Item Title	Content to be integrated in the RFM	Reason/Assessment
8G3320A00931	Chart Holder	"The use of the chart holder light is not recommended"	Charts holders were tested during different flights using RFM pages and maps. The objects attached to the chart holder reflected a lot of light. This leads to an unacceptable glare using NVGs reducing the outside visibility. This assessment is not a negative outcome for the Chart Holder lights performance in NVIS operations, but related to the use of light colour papers under the Chart holder light.

Table 5: Items with recommendation in RFM

Figure 3 – AW189 – COCKPIT PANELS LAYOUT