

AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS - EFFECTIVE 30 OCTOBER 2022

General and Aeroplane Specific Material

1 GENERAL

On 5 October 2012 the Commission Regulation (EU) No 965/2012 and related documents were published, laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council.

The European Aviation Safety Agency (EASA) publishes Regulations on Air Operations with the associated Decisions containing Acceptable Means of Compliance (AMC) and Guidance Material (GM).

On JEPPESEN approach and aerodrome charts an inverse printed “**Standard**” label in the upper left corner of the minimums band indicates that the minimums are derived according to the requirements described in EASA Air Operations documents.

From 2020 the “**Standard**” label will be replaced by a “**Std/State**” label to be aligned with the new Jeppesen Standard AOM policy. The label indicates that the minimums are determined according to a State Regulation, which is, in general, similar to the guidance from ICAO Doc 9365.

TERPS change 20 was harmonized with the EASA Air Ops minimum tables for CAT I, APV and NPA (CAT C and D aircraft only). Those procedures with the TERPS label are therefore EASA AIR OPS compliant for CAT C and D aircraft operators.

The following explanation is an excerpt to summarize only the relevant parts of the EASA Air Operations (EASA Air OPS) regarding the method used to determine Aerodrome Operating Minimums (Rules, AMC or GM). It is **not** intended to provide aircraft or aircrew requirements or operating procedures.

The publication of EASA Air Ops landing and take-off minimums on Jeppesen charts does not constitute authority for their use by every operator. Each individual operator is responsible for validating that the appropriate approval has been obtained for their use.

In addition, the minimums are only considered applicable if:

- the required ground equipment for the intended procedure is operative; and
- the required aircraft systems for the type of approach are operative; and
- the required aircraft performance criteria are met; and
- the crew is qualified accordingly.

2 TERMINOLOGY AND DEFINITIONS

Acceptable Means of Compliance (AMC) — means non-binding standards adopted by the Agency to illustrate means to establish compliance with Regulation (EC) No 216/2008 and its Implementing Rules.

CAT.OP.MPA.xxx — Implementing rule (IR) from regulation for PART-CAT (Commercial Air Transport Operations)

SPA.LVO.xxx — Implementing rule from regulation for PART-SPA (Specific Approvals)

AMC1 CAT.OP.MPA.xxx — Acceptable Means of Compliance to the related IR CAT.OP.MPA.xxx

GM1 CAT.OP.MPA.xxx — Guidance Material to the related IR CAT.OP.MPA.xxx

Continuous descent final approach (CDFA)

— means a technique, consistent with stabilized approach procedures, for flying the final-approach segment of a non-precision instrument approach procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height to a point approximately 15m (50ft) above the landing runway threshold or the point where the flare maneuver shall begin for the type of aircraft flown.

EFVS-A — Enhanced flight vision system used for Approach

EFVS-L — Enhanced flight vision system used for Landing

Instrument approach operations — An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

- a. a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and
- b. a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

NOTE 1: Lateral and vertical guidance refers to guidance provided either by ground-based radio navigation aids, or by computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

NOTE 2: A non-precision approach (NPA) procedure flown as CDFA with vertical path guidance calculated by on-board equipment is considered to be a 3D instrument approach operation.

NOTE 3: CDFAs with manual calculation of the required rate of descent are considered 2D operations.

Low-visibility operations (LVO) — means approach or take-off operations on a runway with a runway visual range less than 550m or with a decision height less than 200ft.

Low-visibility procedures (LVP) — means procedures applied by an aerodrome for the purpose of ensuring safety during low-visibility operations.

NOTE: LVP can be very simple (like simply state that only one operation at the airport is allowed) or can be more complex.

Low-visibility take-off (LVTO) — means a take-off with an RVR less than 550m. Only LVTO operations in an RVR of less than 400m require a specific approval.

AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS - EFFECTIVE 30 OCTOBER 2022

Type A instrument approach operation — means an operation with an MDH or a DH at or above 250ft (Note: According to GM3 CAT.OP.MPA.182(c) the DH of the specific instrument approach procedure determines the Type A or B, not the system minimum. An ILS with a DH \geq 250ft is always a Type A operation.)

Type B instrument approach operation — means an operation with a DH below 250ft

Type of instrument approach operation on Jeppesen charts for States applying EASA AIR OPS

Approach Type	Flight Technique	Descent Limit Label	Type of Operation
Precision	---	DA(H)	3D
APV	---	DA(H)	3D
Non-precision	CDFA (onboard equipment) Descent angle depicted	DA/MDA(H)	3D
Non-precision	CDFA (manual calculation) No Descent angle depicted	DA/MDA(H) or MDA(H)	2D
Non-precision	Other than CDFA	MDA(H)	2D

NOTE: According to Table 10 from AMC5 CAT.OP.MPA.110 the type of operation is a contributing factor to determine the lowest RVR.

Flying the level segment up to the missed approach point or not flying a level segment determines whether an RVR add-on (200m or 400m) is required or not.

3 OPERATOR RESPONSIBILITY

CAT.OP.MPA.110 Aerodrome operating minimums

- a. The operator shall establish aerodrome operating minimums for each departure, destination or alternate aerodrome that is planned to be used in order to ensure separation of the aircraft from terrain and obstacles and to mitigate the risk of loss of visual references during the visual flight segment of instrument approach operations.
- b. The method used to establish aerodrome operating minimums shall take all the following elements into account:
 1. the type, performance, and handling characteristics of the aircraft;
 2. the equipment available on the aircraft for the purpose of navigation, acquisition of visual references, and/or control of the flight path during take-off, approach, landing, and the missed approach;
 3. any conditions or limitations stated in the aircraft flight manual (AFM);

4. the relevant operational experience of the operator;
 5. the dimensions and characteristics of the runways/final approach and take-off areas (FATOs) that may be selected for use;
 6. the adequacy and performance of the available visual and non-visual aids and infrastructure;
 7. the obstacle clearance altitude/height (OCA/H) for the instrument approach procedures (IAPs);
 8. the obstacles in the climb-out areas and necessary clearance margins;
 9. the composition of the flight crew, their competence and experience;
 10. the IAP;
 11. the aerodrome characteristics and the available air navigation services (ANS);
 12. any minimums that may be promulgated by the State of the aerodrome;
 13. the conditions prescribed in the operations specifications including any specific approvals for low-visibility operations (LVOs) or operations with operational credits;
 14. any non-standard characteristics of the aerodrome, the IAP or the environment.
- c. The operator shall specify a method of determining aerodrome operating minimums in the operations manual.
 - d. The method used by the operator to establish aerodrome operating minimums and any change to that method shall be approved by the competent authority.

GM6 CAT.OP.MPA.110 Aerodrome operating minimums

INCREMENTS SPECIFIED BY THE COMPETENT AUTHORITY

Additional increments to the published minimums may be specified by the competent authority to take into account certain operations, such as downwind approaches and single-pilot operations or approaches flown not using the CDFA technique.

GM7 CAT.OP.MPA.110 Aerodrome operating minimums

USE OF COMMERCIALY AVAILABLE INFORMATION

When an operator uses commercially available information to establish aerodrome operating minimums, the operator remains responsible for ensuring that the material used is accurate and suitable for its operation, and that aerodrome operating minimums are calculated in accordance with the method specified in Part C of its operations manual and approved by the competent authority. The procedures in ORO.GEN.205 'Contracted activities' apply in this case.

GM8 CAT.OP.MPA.110 Aerodrome operating minimums

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

LOW TEMPERATURE CORRECTION

- a. An operator may determine the aerodrome temperature below which a correction should be applied to the DA/H.
- b. Table 20 may be used to determine the correction that should be applied.
- c. The calculations in the table are for a sea-level aerodrome; they are therefore conservative when applied at higher-level aerodromes.

d. Guidance on accurate corrections for specific conditions (if required) is available in PANS-OPS, Volume I (ICAO Doc 8168) Section 1 Chapter 4.

GM8 CAT.OP.MPA 110 Table 20 - Temperature corrections to be applied to barometric DH/MDH

Aerodrome temperature (°C)	Height above the elevation of the altimeter setting source (ft)													
	200	300	400	500	600	700	800	900	1000	1500	2000	3000	4000	5000
0	20	20	30	30	40	40	50	50	60	90	120	170	230	280
-10	20	30	40	50	60	70	80	90	100	150	200	290	390	490
-20	30	50	60	70	90	100	120	130	140	210	280	420	570	710
-30	40	60	80	100	120	140	150	170	190	280	380	570	760	950
-40	50	80	100	120	150	170	190	220	240	360	480	720	970	1210
-50	60	90	120	150	180	210	240	270	300	450	590	890	1190	1500

4 APPROACH FLIGHT TECHNIQUE

CAT.OP.MPA.115 Approach flight technique - aeroplanes

- a. All approaches shall be flown as stabilized approaches unless otherwise approved by the competent authority for a particular approach to a particular runway.
- b. The continuous descent final approach (CDFA) technique shall be used for approach operations using non-precision approach (NPA) procedures except for such particular runways for which the competent authority has approved another flight technique.

5 MET VISIBILITY/RVR/CMV

AMC10 CAT.OP.MPA.110 Aerodrome operating minimums

CONVERSION OF VISIBILITY TO CMV – AEROPLANES

The following conditions apply to the use of converted meteorological visibility (CMV) instead of RVR:

- a. If the reported RVR is not available, a CMV may be substituted for the RVR, except:
 - 1. to satisfy the take-off minimums; or
 - 2. for the purpose of continuation of an approach in LVOs.
- b. If the minimum RVR for an approach is more than the maximum value assessed by the aerodrome operator, then CMV should be used.
- c. In order to determine CMV from visibility:
 - 1. for flight planning purposes, a factor of 1.0 should be used.
 - 2. for purposes other than flight planning, the conversion factors specified in Table 16 should be used.

AMC10 CAT.OP.MPA.110 Table 16 Conversion of reported VIS to RVR/CMV

Light elements in operation	RVR/CMV = reported VIS x factor	
	Day	Night
High intensity approach and runway lights	1.5	2.0
Any type of light installation other than above	1.0	1.5
No lights	1.0	Not applicable

6 APPROACH LIGHTING SYSTEMS

AMC5 CAT.OP.MPA.110 Aerodrome operating minimums

APPROACH LIGHTING SYSTEMS

AMC5 CAT.OP.MPA.110 Table 11 Approach lighting systems - Aeroplanes

Class of lighting facility	Length, configuration and intensity of approach lights
FALS	CAT I approach lighting system (HIALS ≥ 720m) distance coded centerline, Barrette centerline
IALS	Simple approach lighting system (HIALS 420-719m) single source, Barrette
BALS	Any other approach lighting system (HIALS or MIALS or ALS 210-419m)
NALS	Any other approach lighting system (HIALS, MIALS or ALS < 210m) or no approach lights

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

**7 DETERMINATION OF AOM
FOR TAKE-OFF**

**AMC1 CAT.OP.MPA.110 Aerodrome operating
minimums**

TAKE-OFF OPERATIONS - AEROPLANES

a. Take-off minimums

Take-off minimums should be expressed as visibility (VIS) or runway visual range (RVR) limits, taking into account all relevant factors for each runway planned to be used and aircraft characteristics and equipment. Where there is a specific need to see and avoid obstacles on departure and/or for a forced landing, additional conditions, e.g. ceiling, should be specified.

b. Visual reference

2. For night operations, the prescribed runway lights should be in operation.

c. Required RVR or VIS

1. For multi-engined aeroplanes, with performance such that, in the event of a critical engine failure at any point during take-off, the aeroplane can either stop or continue the take-off to a height of 1500ft above the aerodrome while clearing obstacles by the required margins, the take-off minimums specified by the operator should be expressed as RVR or VIS values not lower than those specified in Table 1.

2. For multi-engined aeroplanes without the performance to comply with the conditions in c.1., in the event of a critical engine failure, there may be a need to re-land immediately and to see and avoid obstacles in the take-off area. Such aeroplanes may be operated to the following take-off minimums provided that they are able to comply with the applicable obstacle clearance criteria, assuming engine failure at the height specified. The take-off minimum specified by the operator should be based upon the height from which the one-engine-inoperative (OEI) net take-off flight path can be constructed. The RVR minimum used should not be lower than either of the values specified in Table 1 or Table 2.

**AMC1 CAT.OP.MPA.110 Table 1 Take-off -
Aeroplanes (without LVTO Approval) RVR or VIS**

Facilities		Minimum RVR or VIS
Day	NIL	500m
Day	Centerline markings (RCLM) or Runway edge lights (RL) or Runway centerline lights (CL)	400m
Night	Runway end lights and Runway edge lights (RL) or Runway centerline lights (CL)	

Notes:

- The reported RVR or VIS value representative of the initial part of the take-off run can be replaced by pilot assessment.
- During day with NIL facilities: The pilot is able to continuously identify the take-off surface and maintain directional control.
- During night: Runway end lights may be substituted by color-coded runway edge lights or color-coded runway centerline lights.

**AMC1 CAT.OP.MPA.110 Table 2 Take-off
- Aeroplanes (without LVTO approval)
Assumed engine failure height above the
runway versus RVR or VIS**

Assumed Engine Failure Height above the Take-off Runway (ft)	RVR or VIS
≤ 50ft	400m
51ft-100ft	400m
101ft-150ft	400m
151ft-200ft	500m
201ft-300ft	1000m
More than 300ft or if no positive take-off flight path can be constructed	1500m

NOTE: The reported RVR or VIS value representative of the initial part of the take-off run can be replaced by pilot assessment.

SPA.LVO.100 Low visibility operations

The operator shall conduct the following operations only if they are approved by the competent authority:

- a. take-off operations with visibility conditions of less than 400m RVR;

GM2 SPA.LVO.100 Low-visibility operations and operations with operational credits

LOW-VISIBILITY CONDITIONS

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

- a. Low-visibility conditions means meteorological conditions with a runway visual range (RVR) less than 550m.

GM1 SPA.LVO.100(a) Low-visibility operations and operations with operational credits

CLASSIFICATION OF LVTO OPERATIONS

Take-off operations are classified as 'normal take-off operations' with an RVR at or above 550m and 'LVTO operations' with an RVR below 550m. Only LVTO operations in an RVR of less than 400m require a specific approval.

AMC1 SPA.LVO.100(a) Low-visibility operations and operations with operational credits

LOW-VISIBILITY TAKE-OFF (LVTO) OPERATIONS – AEROPLANES IN AN RVR OF LESS THAN 400m

- a. Required RVR
 - 1. For multi-engined aeroplanes which, in the event of a critical engine failure at any point during take-off, can either stop or continue the take-off to a height of 1500ft above the aerodrome while clearing obstacles by the required margins, the criteria in Table 1 should apply:

AMC1 SPA.LVO.100(a) Table 1 LVTO Operations with aeroplanes - RVR versus facilities

Facilities	Minimum RVR
Centerline markings (RCLM) and Runway edge lights (RL)	300m (day)
Centerline markings (RCLM) and Runway edge lights (RL) and Runway end lights or Runway centerline lights (CL)	300m (night)
Centerline markings (RCLM) and Runway end lights and Runway edge lights (RL) and Runway centerline lights (CL)	150m
Centerline markings (RCLM) and Runway end lights and Runway edge lights (RL) (spaced 60m or less) and Runway centerline lights (CL) (spaced 15m or less)	125m

- 2. For multi-engined aeroplanes not complying with the conditions in (a)(1), there may be a need to land immediately and to see and avoid obstacles. Such aeroplanes may be operated to the take-off minimums shown in Table 2 and the marking and lighting criteria shown in Table 1, provided that they are able to comply with the applicable obstacle clearance criteria, assuming engine failure at the height specified:

AMC1 SPA.LVO.100(a) Table 2 LVTO operations with aeroplanes - Assumed engine failure height versus RVR

Assumed engine failure height above the take-off runway (ft) vs RVR (m)	
Height	RVR
Less than 50ft	Not less than 200m
More than 50ft but less than 100ft	Not less than 300m

- b. The reported RVR value representative of the initial part of the take-off run can be replaced by pilot assessment.
- c. The minimum RVR value specified in Table 1 or 2 should be achieved for all reporting points representative of the parts of the runway from the point at which the aircraft commences the take-off until the calculated accelerate-stop distance from that point.

LVTO-OPERATIONS – AEROPLANES IN AN RVR OF LESS THAN 125m

- e. For LVTO operations with an RVR of less than 125m, the following additional elements should apply:
 - 1. The runway has centerline lights spaced at intervals of 15m or less;
 - 2. If an ILS signal is used for lateral guidance, the ILS localizer signal meets the requirements for category III operations, unless otherwise stated in the AFM;
- f. For LVTO operations with an RVR of less than 125m, the reported RVR should be not less than the minimum specified in the AFM or, if no such minimum is specified, not less than 75m.
- g. The minimum required RVR should be achieved for all reporting points representative of the parts of the runway from the point at which the aircraft commences the take-off until the greater of the calculated take-off distance or accelerate-stop distance from that point.
- h. The reported RVR value representative of the initial part of the take-off run can be replaced by pilot assessment.

8 DETERMINATION OF AOM FOR CIRCLING

AMC7 CAT.OP.MPA.110 Aerodrome operating minimums

CIRCLING OPERATIONS - AEROPLANES

- a. Circling Minimums

The following standards should apply for establishing circling minimums for operations with aeroplanes:

 - 1. The MDH for circling operation should not be lower than the highest of:
 - i. the published circling OCH for the aeroplane category;
 - ii. the minimum circling height derived from Table 15; or

AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS - EFFECTIVE 30 OCTOBER 2022

- iii. the DH/MDH of the preceding instrument approach procedure (IAP);
 2. The MDA for circling should be calculated by adding the published aerodrome elevation to the MDH, as determined by (a).(1).; and
 3. The minimum VIS for circling should be the higher of:
 - i. the circling VIS for the aeroplane category, if published; or
 - ii. the minimum VIS derived from Table 15.
 2. the published approach procedure DH or minimum descent height (MDH) where applicable;
 3. the system minimum specified in Table 4;
 4. the minimum DH permitted for the runway specified in Table 5; or
 5. the minimum DH specified in the aircraft flight manual (AFM) or equivalent document, if stated.
- b. The MDH for a 2D approach operation flown not using the CDFA technique should not be lower than the highest of:

**AMC7 CAT.OP.MPA.110 Table
15 Circling - Aeroplanes
MDH and minimum VIS versus
aeroplane category**

Aeroplane Category				
	A	B	C	D
MDH	400ft	500ft	600ft	700ft
VIS	1500m	1600m	2400m	3600m

b. Conduct of flight - general

The following standards should apply for establishing circling minimums for operations with aeroplanes:

1. the MDH and OCH included in the procedure are referenced to aerodrome elevation;
2. the MDA is referenced to mean sea level;
3. for these procedures, the applicable visibility is the VIS; and
4. operators should provide tabular guidance of the relationship between height above threshold and the in-flight visibility required to obtain and sustain visual conduct during the circling maneuver.

9 VISUAL APPROACH OPERATIONS

AMC9 CAT.OP.MPA.110 Aerodrome operating minimums

VISUAL APPROACH OPERATIONS

The operator should not use an RVR of less than 800m for a visual approach operation.

10 DETERMINATION OF AOM FOR INSTRUMENT APPROACH OPERATIONS

AMC3 CAT.OP.MPA.110 Aerodrome operating minimums

DETERMINATION OF DH/MDH FOR INSTRUMENT APPROACH OPERATIONS - AEROPLANES

- a. The decision height (DH) to be used for a 3D approach operation or a 2D approach operation flown using the continuous descent final approach (CDFA) technique should not be lower than the highest of:
 1. the obstacle clearance height (OCH) for the category of the aircraft;

2. the published approach procedure MDH where applicable;
3. the system minimum specified in Table 4;
4. the lowest MDH permitted for the runway specified in Table 5; or
5. the lowest MDH specified in the AFM, if stated.

**AMC3 CAT.OP.MPA.110 Table 4 System
minimums - Aeroplanes**

Facility	Lowest DH/MDH
ILS/MLS/GLS/PAR GNSS/SBAS (LPV)	200ft
GNSS/SBAS (LP) GNSS (LNAV) GNSS/Baro-VNAV (LNAV/VNAV) LOC with or without DME SRA (terminating at 0.5NM) VOR/DME	250ft
SRA (terminating at 1.0NM) VOR NDB/DME	300ft
SRA (terminating at 2.0NM or more) NDB VDF	350ft

Localizer performance with vertical guidance (LPV): a DH of 200ft may be used only if the published FAS datablock sets a vertical alert limit not exceeding 35m. Otherwise, the DH should not be lower than 250ft.

GM3 CAT.OP.MPA.110 Aerodrome operating minimums

SBAS OPERATIONS

- a. SBAS LPV operations with a DH of 200ft depend on an SBAS system approved for operations down to a DH of 200ft.

AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS - EFFECTIVE 30 OCTOBER 2022

AMC3 CAT.OP.MPA.110 Table 5 Runway type minimums - Aeroplanes

Runway type		Lowest DH/MDH
Instrument Runway	(CAT I) Precision approach (PA) runway	200ft
	NPA runway	250ft
Non-Instrument Runway	Non-instrument Runway	Circling minimums as shown in Table 15 (circling minimums)

c. Where a barometric DA/H or MDA/H is used, this should be adjusted where the ambient temperature is significantly below international standard atmosphere (ISA). GM8 CAT.OP.MPA.110 'Low temperature correction' provides a cold temperature correction table for adjustment of minimum promulgated heights/altitudes.

AMC5 CAT.OP.MPA.110 Aerodrome operating minimums

DETERMINATION OF RVR OR VIS FOR INSTRUMENT APPROACH OPERATIONS - AEROPLANES

a. The RVR or VIS for straight-in instrument approach operations should be not less than the greatest of:

1. the minimum RVR or VIS for the type of runway used according to Table 8;

2. the minimum RVR determined according to the MDH or DH and class of lighting facility according to Table 9; or
3. the minimum RVR according to the visual and non-visual aids and on-board equipment used according to Table 10.

If the value determined in (1) is a VIS, then the result is a minimum VIS. In all other cases, the result is a minimum RVR.

- b. For Category A and B aeroplanes, if the RVR or VIS determined in accordance with (a) is greater than 1500m, then 1500m should be used.
- c. If the approach is flown with a level flight segment at or above the MDA/H, then 200m should be added to the RVR calculated in accordance with (a) and (b) for Category A and B aeroplanes and 400m for Category C and D aeroplanes.
- d. The visual aids should comprise standard runway day markings, runway edge lights, threshold lights, runway end lights and approach lights as defined in Table 11.

AMC5 CAT.OP.MPA.110 Table 5 Runway Type Minimums - Aeroplanes

Type of runway	Minimum RVR or VIS
PA runway CAT I	RVR 550m
NPA runway	RVR 750m
Non-instrument runway	VIS according to Table 15 (circling minimums)

AMC5 CAT.OP.MPA.110 Table 9 RVR versus DH/MDH - Aeroplanes

DH or MDH (ft)	Class of lighting facilities			
	FALS	IALS	BALS	NALS
	RVR (m)			
200 - 210	550	750	1000	1200
211 - 240	550	800	1000	1200
241 - 250	550	800	1000	1300
251 - 260	600	800	1100	1300
261 - 280	600	900	1100	1300
281 - 300	650	900	1200	1400
301 - 320	700	1000	1200	1400
321 - 340	800	1100	1300	1500
341 - 360	900	1200	1400	1600
361 - 380	1000	1300	1500	1700
381 - 400	1100	1400	1600	1800
401 - 420	1200	1500	1700	1900
421 - 440	1300	1600	1800	2000
441 - 460	1400	1700	1900	2100
461 - 480	1500	1800	2000	2200
481 - 500	1500	1800	2100	2300
501 - 520	1600	1900	2100	2400
521 - 540	1700	2000	2200	2400
541 - 560	1800	2100	2300	2400
561 - 580	1900	2200	2400	2400
581 - 600	2000	2300	2400	2400
601 - 620	2100	2400	2400	2400

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

AMC5 CAT.OP.MPA.110 Table 9 RVR versus DH/MDH - Aeroplanes (continued)

DH or MDH (ft)	Class of lighting facilities			
	FALS	IALS	BALS	NALS
	RVR (m)			
621 - 640	2200	2400	2400	2400
641 - 660	2300	2400	2400	2400
661 and above	2400	2400	2400	2400

**AMC5 CAT.OP.MPA.110 Table 10 Visual and non-visual aids and/or on-board-
equipment versus minimum RVR - Aeroplanes**

Type of approach	Facilities	Lowest RVR Multi-pilot operations	Lowest RVR Single-pilot operations
3D operations (Final approach track offset $\leq 15^\circ$ for CAT A and B aeroplanes or $\leq 5^\circ$ for CAT C and D aeroplanes)	Runway touchdown zone lights (TDZ) and runway centerline lights (CL)	No limitation	No limitation
	Without TDZ and/or CL but using HUDLS or equivalent system, autopilot or flight director to the DH	No limitation	600m
	No TDZ and/or CL, not using HUDLS or equivalent system, autopilot or flight director to the DH	750m	800m
3D operations (Final approach track offset $> 15^\circ$ for CAT A and B aeroplanes or final approach track offset $> 5^\circ$ for CAT C and D aeroplanes)	Runway touchdown zone lights (TDZ) and runway centerline lights (CL)	800	1000m
3D operations (Final approach track offset $> 15^\circ$ for CAT A and B aeroplanes or final approach track offset $> 5^\circ$ for CAT C and D aeroplanes)	Without TDZ and/or CL but using HUDLS or equivalent system, autopilot or flight director to the DH	800m	1000m
2D operations	Final approach track offset $\leq 15^\circ$ for CAT A and B aeroplanes or $\leq 5^\circ$ for CAT C and D aeroplanes	750m	800m
	Final approach track offset $> 15^\circ$ for CAT A and B aeroplanes	1000m	1000m
	Final approach track offset $> 5^\circ$ for CAT C and D aeroplanes	1200m	1200m

- e. For night operations or for any operation where credit for visual aids required, the lights should be on and serviceable except as provided for in Table 17.
- f. Where any visual or non-visual aid specified for the approach and assumed to be available in the determination of operating minimum is unavailable, revised operating minimum will need to be determined.

**11 LOW-VISIBILITY OPERATIONS
AND OPERATIONS WITH
OPERATIONAL CREDITS**

**GM1 SPA.LVO.100(b) Low-visibility operations
and operations with operational credits**

INSTRUMENT APPROACH OPERATIONS IN
LOW-VISIBILITY CONDITIONS - CLASSIFICATION
OF STANDARD APPROACH OPERATIONS

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

The different types of approach and landing operations are classified according to the lowest DH (or MDH) and RVR applicable to the approach type. The classification of approach types does not depend on the technology used for the approach.

The lowest minimums specified do not take account of 'operational credits' that may allow for lower operating minimums.

The classification does not subdivide CAT III operations into CAT IIIA, IIIB, and IIIC. The actual minimums applicable to any operation depends on the aircraft equipment and the specific LVO approval held by the air operator.

The AFM for aircraft certified for CAT III operations will state the lowest usable DH, or no DH. Some AFMs may refer to the previous ICAO classification as follows:

- CAT IIIA: a DH lower than 100ft or no DH and an RVR not less than 175m;
- CAT IIIB: a DH lower than 50ft or no DH and an RVR less than 175m but not less than 50m.

The minimum RVR in the EU regulations is 75m.

Where an operational credit allows operation to lower-than-standard minimums, this is not considered a separate approach classification.

GM2 SPA.LVO.100(b) Low-visibility operations and operations with operational credits

Legacy systems may be described as capable of 'CAT 3A' or 'CAT IIIA' operations. This implies a minimum DH of less than 100ft but not less than 50ft. Systems described as capable of 'CAT 3B' or 'CAT IIIB' may be certified for a DH of less than 50ft or no DH.

Operations to a DH of less than 100ft but not less than 50ft will typically require a fail-passive automatic landing system or a HUDLS or equivalent system.

Operations to a DH of less than 50ft will require a fail-operational landing system, a fail-passive go-around system, automatic thrust control and either automatic ground roll control or ground roll guidance using a HUDLS.

For no DH operations, a fail-passive or fail-operational ground roll control system is required.

The RVR required for SA CAT I, CAT II and SA CAT II approach operations is determined by the DH and the aircraft approach speed category.

The RVR required for CAT III approach operations is determined by the DH and the capability of the ground-roll control system. Operations with fail-passive roll control systems require a greater RVR than operations with fail-operational ground control systems because the pilots would need to have sufficient visibility to maintain lateral control in the event of a system failure.

12 DETERMINATION OF AOM FOR STANDARD CAT II OPERATIONS

AMC1 SPA.LVO.100(b) Low-visibility operations and operations with operational credits

INSTRUMENT APPROACH OPERATIONS IN LOW-VISIBILITY CONDITIONS - CAT II OPERATIONS

For CAT II operations, the following should apply:

- a. The DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance and be not lower than the highest of:
 1. the minimum DH specified in the AFM, if stated;
 2. the applicable obstacle clearance height (OCH) for the category of aircraft;
 3. the DH to which the flight crew is qualified to operate; or
 4. 100ft.
- b. The lowest RVR minimums to be used are specified in Table 4:

AMC1 SPA.LVO.100(b) Table 4 - CAT II operations minimums: RVR (m) versus DH (ft)

Aircraft categories		Auto-coupled or HUD to below DH*	
		A, B, C	D
DH (ft)	100-120	300	300/350*
	121-140	400	400
	141-199	450	450

An RVR of 300m may be used for CAT D aeroplane conducting an autoland or using a HUDLS to touchdown.

13 DETERMINATION OF AOM FOR CAT III OPERATIONS

AMC2 SPA.LVO.100(b) Low-visibility operations and operations with operational credits

INSTRUMENT APPROACH OPERATIONS IN LOW-VISIBILITY CONDITIONS - CAT III OPERATIONS

For CAT III operations, the following should apply:

- a. For operations in which a DH is used, the DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance and be not lower than:
 1. the minimum DH specified in the AFM, if stated;
 2. the DH to which the flight crew is qualified to operate.
- b. Operations with no DH should only be conducted if:
 1. operation with no DH is specified in the AFM;
 2. there is no published information indicating that the approach aid or aerodrome facilities cannot support operations with no DH; and
 3. the flight crew is qualified to operate with no DH.
- c. The lowest RVR to be used should be determined in accordance with Table 5:

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

**AMC2 SPA.LVO.100(b) Table 5 - CAT III
operation minimums: RVR (m) versus DH (ft)**

DH (ft)	Roll-out control/guidance system	RVR (m)
50-99	Not required	175
0-49 or no DH	Fail-passive	125
	Fail-operational	75

For a fail-passive or HUD roll-out control system, a lower RVR value (no lower than 75 m) can be used if stated in the AFM provided that the equipment demonstrated such capability as part of the certification process. This is provided that the operator has implemented the appropriate operating procedures and training.

14 OPERATIONS WITH OPERATIONAL CREDITS

GM1 SPA.LVO.100(c) Low-visibility operations and operations with operational credits

THE CONCEPT OF OPERATIONS WITH OPERATIONAL CREDITS

For each specific class of standard take-off or approach operations, a standard combination of airborne equipment, aerodrome infrastructure and equipment, and procedures (system components) needs to be available to ensure the required performance of the total system.

System components may exceed the required standard performance. The aim of the concept of operations with operational credits is to exploit such enhanced performance to provide operational flexibility beyond the limits of standard operations.

For approach operations, an operational credit can be applied to the instrument or the visual segment or both.

Where an operational credit allows operation to lower-than-standard minimums, this is not considered a separate approach classification.

GM2 SPA.LVO.100(c) Low-visibility operations and operations with operational credits

OPERATIONS WITH OPERATIONAL CREDITS – SPECIAL AUTHORISATION CATEGORY I (SA CAT I) OPERATIONS

**AMC1 SPA.LVO.100(c) Table 8 SA CAT I operation minimums
RVR (m) versus approach lighting system**

Class of light facility	FALS	IALS	BALS	NALS	
DH (ft)	150 - 160	400	500	600	700
	161 - 200	450	550	650	750
	201 - 210	450	550	650	750
	211 - 220	500	550	650	800
	221 - 230	500	600	700	900
	231 - 240	500	650	750	1000
	241 - 249	550	700	800	1100

GM3 SPA.LVO.100(c) Low-visibility operations and operations with operational credits

SA CAT I is an operational credit applied to a CAT I operation that exploits a navigation solution with superior performance to that required for standard CAT I by extending the instrument segment of CAT I approach operations. This navigation solution may be an ILS installation with the necessary performance coupled to a suitably certified autoland system or a HUD or equivalent display system or SVGS. The extended instrument segment means that the DH can be reduced from the standard minimum of 200ft down to 150ft. The lower DH allows a corresponding reduction in the RVR required for the approach.

AMC1 SPA.LVO.100(c) Low-visibility operations and operations with operational credits

OPERATIONS WITH OPERATIONAL CREDITS – SPECIAL AUTHORISATION CATEGORY I (SA CAT I)

For special authorisation category I (SA CAT I) operations, the following should apply:

- a. The DH of an SA CAT I operation should not be lower than the highest of:
 1. the minimum DH specified in the AFM, if stated;
 2. the applicable OCH for the category of aeroplane;
 3. the DH to which the flight crew is qualified to operate; or
 4. 150ft.
- b. Where the DH for an SA CAT I operation is less than 200ft, it should be determined by the use of a radio altimeter or other device capable of providing equivalent performance.
- c. The following visual aids should be available:
 1. approach lights as specified in Table 8;
 2. precision approach (PA) runway markings;
 3. category I runway lights.
- d. The lowest RVR should not be lower than the higher of:
 1. the minimum RVR specified in the AFM, if stated; or
 2. the RVR specified in Table 8.

OPERATIONS WITH OPERATIONAL CREDITS – SPECIAL AUTHORISATION CATEGORY II (SA CAT II) OPERATIONS

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

SA CAT II is an operational credit to a CAT II operation that applies to the visual segment of an approach conducted where aerodrome, runway and approach lighting systems do not meet the usual requirements for a CAT II precision lighting system. SA CAT II exploits the performance of a suitably certified HUDLS or autoland system. The DH will be the same as for standard CAT II, and the required RVR will depend on the class of light facility installed.

AMC2 SPA.LVO.100(c) Low-visibility operations and operations with operational credits

OPERATIONS WITH OPERATIONAL CREDITS – SPECIAL AUTHORISATION CATEGORY II (SA CAT II)

For special authorization category II (SA CAT II) operations, the following should apply:

- a. The DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance, if so determined by the aircraft certification process, and be not lower than the highest of:
 - 1. the minimum DH specified in the AFM, if stated;
 - 2. the applicable OCH for the category of aeroplane;
 - 3. the DH to which the flight crew is qualified to operate; or
 - 4. 100ft.
- b. The following visual aids should be available:
 - 1. approach lights as specified in Table 9;
 - 2. precision approach runway markings;
 - 3. category I runway lights.
- c. The lowest RVR minimums to be used are specified in Table 9:

**AMC2 SPA.LVO.100(c) Table 9 SA CAT II operation minimums
RVR (m) versus DH (ft)**

Class of light facility		FALS	IALS	BALS	NALS
DH (ft)	100 - 120	350	450	600	700
	121 - 140	400	500	600	700
	141 - 160	400	500	600	750
	161 - 199	400	550	650	750

15 FAILED OR DOWNGRADED EQUIPMENT

AMC11 CAT.OP.MPA.110 Aerodrome Operating minimums

EFFECT ON LANDING MINIMUMS OF TEMPORARILY FAILED OR DOWNGRADED GROUND EQUIPMENT

a. General:

These instructions are intended for use both before and during flight. It is, however, not expected that the commander would consult such instructions after passing 1000ft above the aerodrome. If failures of ground aids are announced at such a late stage, the approach could be continued at the commander's discre-

tion. If failures are announced before such a late stage in the approach, their effect on the approach should be considered as described in Table 17, and the approach may have to be abandoned.

- b. Conditions applicable to Table 17:
 - 1. multiple failures of runway/FATO lights other than those indicated in Table 17 should not be acceptable;
 - 2. deficiencies of approach and runway/FATO lights are acceptable at the same time, and the most demanding consequence should be applied; and
 - 3. failures other than ILS, GLS, MLS affect the RVR only and not the DH.

AMC11 CAT.OP.MPA.110 Table 17 Failed or downgraded equipment - Effect on landing minimums operations without LVO approval

Failed or downgraded equipment	Effect on landing minimums	
	Type B	Type A
Navaid stand-by transmitter	No effect	No effect
Outer marker (ILS only)	Not allowed, except if the required height versus glide path can be checked using other means, e.g. DME fix	APV - not applicable
		NPA with final approach fix (FAF): no effect unless used as FAF If the FAF cannot be identified (e.g. no method available for timing of descent), NPA operations cannot be conducted
Middle marker (ILS only)	No effect	No effect unless used as MAPt
RVR assessment systems	No effect	

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

**AMC11 CAT.OP.MPA.110 Table 17 Failed or downgraded equipment - Effect on landing
minimums operations without LVO approval (continued)**

Failed or downgraded equipment	Effect on landing minimums	
	Type B	Type A
Approach lights	minimums as for NALS	
Approach lights except the last 210m	minimums as for BALS	
Approach lights except the last 420m	minimums as for IALS	
Stand-by power for approach lights	No effect	
Edge lights, threshold lights and runway end lights	Day: no effect; Night: not allowed	
Centerline lights	Aeroplanes: No effect if flight director (F/D), HUDLS or autoland; otherwise RVR 750m	No effect
	Helicopters: No effect on CAT I and HELI SA CAT I approach operations	
Centerline lights spacing increased to 30m	No effect	
TDZ lights	Aeroplanes: No effect if F/D, HUDLS or autoland; otherwise RVR 750m Helicopters: No effect	No effect
Taxiway lighting system	No effect	

AMC3 SPA.LVO.110(b) Low-visibility operations and operations with operational credits

INSTRUMENT APPROACH OPERATIONS IN LOW-VISIBILITY CONDITIONS – EFFECT ON LANDING MINIMUMS OF TEMPORARILY FAILED OR DOWNGRADED EQUIPMENT FOR APPROACH OPERATIONS WITH A DH BELOW 200ft

- a. Only those facilities mentioned in Table 6 should be acceptable to be used to determine the effect of temporarily failed or downgraded equipment on the required RVR for CAT II/III approach operations.
- b. The following conditions should be applied to Table 6:

1. multiple failures of runway/FATO lights other than those indicated in Table 6 are not acceptable;
2. deficiencies of both the approach and runway/FATO lights are acceptable at the same time and the most demanding consequence should be applied;
3. for approach operations with a DH below 200ft, a combination of deficiencies in runway/FATO lights and RVR assessment equipment are not permitted; and
4. failures other than ILS, GLS and MLS affect the RVR only and not the DH.

**AMC3 SPA.LVO.110(b) Table 6 Failed or downgraded equipment - Effect on
landing minimums CAT II/III operations**

Failed or downgraded equipment	Effect on landing minimums			
	CAT III (no DH)	CAT III (DH < 50ft)	CAT III (DH ≥ 50ft)	CAT II
Navaid stand-by transmitter	Not allowed	RVR 200m	No effect	
Outer marker (ILS)	No effect if the required height versus glide path can be checked using other means, e.g. DME fix			
Middle marker (ILS)	No effect			
DME	No effect if replaced by RNAV (GNSS) information or the outer marker			
RVR assessment systems	At least one RVR value to be available on the aerodrome	On runways equipped with two or more RVR assessment units, one may be inoperative		
Approach lights	No effect	Not allowed for operations with DH > 50ft	Not allowed	
Approach lights except the last 210m	No effect			Not allowed
Approach lights except the last 420m	No effect			

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

**AMC3 SPA.LVO.110(b) Table 6 Failed or downgraded equipment - Effect on landing
minimums CAT II/III operations (continued)**

Failed or downgraded equipment	Effect on landing minimums			
	CAT III (no DH)	CAT III (DH < 50ft)	CAT III (DH ≥ 50ft)	CAT II
Standby power for approach lights	No effect			
Standby power for runway lights with 1-second switchover time	No effect	Not allowed	Day: RVR 550m	Day: RVR 550m
			Night: RVR 550m	Night: RVR 550m
Edge lights	No effect	Day: no effect	Day: no effect	Day: no effect
		Night: RVR 550m	Night: RVR 550m	Night: not allowed
Threshold lights	No effect	No effect	Day: no effect	Day: no effect
			Night: RVR 550m	Night: not allowed
Runway end lights	No effect if centerline lights are serviceable			
Centerline lights	Day: RVR 200m	Not allowed	Day: RVR 300m	Day: RVR 350m
	Night: not allowed		Night: RVR 400m	Night: RVR 550m (RVR 400m with HUD or auto-land)
Centerline lights spacing increased to 30m	RVR 150m		No effect	
TDZ lights	No effect	Day: RVR 200m	Day: RVR 300m	
		Night: RVR 300m	Night: RVR 550m (RVR 350m with HUD or auto-land)	
Taxiway light system	No effect			

AMC3 SPA.LVO.110(b) Table 7 Failed or downgraded equipment - Effect on landing minimums

Failed or downgraded equipment	Effect on landing minimums			
	SA CAT I	SA CAT II	EFVS-A	EFVS-L
Navaid stand-by transmitter	No effect			
Outer marker (ILS)	No effect if replaced by height check at 1000ft			
Middle marker (ILS)	No effect			
RVR assessment systems	On runways equipped with two or more RVR assessment units, one may be inoperative			
Approach lights	Not allowed		As per IAP	
Approach lights except the last 210m	Not allowed	No effect	As per IAP	
Approach lights except the last 420m	No effect		As per IAP	
Standby power for approach lights	No effect			
Edge lights, Threshold lights	Day: no effect	Day: no effect	As per IAP	
	Night: not allowed	Night: RVR 550m		
Runway end lights	No effect if centerline lights are serviceable		As per IAP	
Centerline lights	Day: RVR 400m	Day: RVR 300m	As per IAP	
	Night: RVR 550m	Night: RVR 400m	As per IAP	
Centerline lights spacing increased to 30m	No effect		As per IAP	
TDZ lights	No effect	Day: RVR 300m	As per IAP	
		Night: RVR 350m		
Taxiway light system	No effect			

16 ENHANCED FLIGHT VISION SYSTEMS – RVR REDUCTION

GM4 SPA.LVO.100(c) Low-visibility operations and operations with operational credits

OPERATIONS WITH OPERATIONAL CREDITS – EFVS OPERATIONS

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

- a. EFVS operations, if approved, exploit the improved visibility provided by the EFVS to allow an operational credit applied to the visual segment of an instrument approach. An EFVS cannot be used to extend the instrument segment of an approach and thus the DH for operation with an EFVS is always the same as for the same approach conducted without an operational credit.
- b. EFVS operations require specific approval from the competent authority in accordance with Part-SPA. However, other EFVS operations may be conducted by operators and without a specific approval if specifically covered in accordance with Part-CAT, Part-NCC or Part-SPO (e.g. 'EFVS 200').

GM5 SPA.LVO.100(c) Low-visibility operations and operations with operational credits

OPERATIONS WITH OPERATIONAL CREDITS – COMBINED VISION SYSTEM

A combined vision system (CVS) consisting of an EFVS and an SVS can be approved for EFVS operations if it meets all the certification requirements for an EFVS.

AMC3 SPA.LVO.100(c) Low-visibility operations and operations with operational credits

OPERATIONS WITH OPERATIONAL CREDITS – EFVS OPERATIONS TO A RUNWAY

When conducting EFVS operations to a runway:

- a. the DA/H used should be the same as for operations without EFVS;
- b. the lowest RVR minimums to be used should be determined:
 1. in accordance with criteria specified in the AFM for the expected weather conditions; or
 2. if no such criteria are specified, by reducing the RVR determined.
- c. where the lowest RVR to be used, determined in accordance with b., is less than 550m, then this should be increased to 550m unless LVPs are established at the aerodrome of intended landing;
- d. where the EFVS is part of a CVS, it is only the EFVS element that should provide the operational credits. The other part of the CVS, the synthetic vision system (SVS), should not provide operational credits.

**AMC6 CAT.OP.MPA182 Table 2 - Basic fuel scheme - planning minimums - aeroplanes
Destination alternate aerodrome, fuel ERA aerodrome, isolated destination aerodrome**

Type of approach operation	Aerodrome ceiling (cloud base or vertical visibility)	RVR/VIS
Type B instrument approach operations	DA/H + 200ft	RVR/VIS + 800m
Type A instrument approach operations	DA/H or MDA/H + 400ft	RVR/VIS + 1500m
Circling approach operations	MDA/H + 400ft	VIS + 1500m
Crosswind planning minimums: see Table 1 'Aerodrome forecasts (TAFs) and landing forecasts (TRENDS) to be used for pre-flight planning' of AMC3 CAT.OP.MPA.182.		
Wind limitations should be applied taking into account the runway condition (dry, wet, contaminated).		

AMC3 SPA.LVO.100(c) Table 10 Operations using EFVS/CVS - RVR/CMV Reduction

RVR/CMV (m) required without the use of EFVS	RVR/CMV (m) required with the use of EFVS
550	350
600	400
650	450
700	450
750	500
800	550
900	600
1000	650
1100	750
1200	800
1300	900
1400	900
1500	1000
1600	1100
1700	1100
1800	1200
1900	1300
2000	1300
2100	1400
2200	1500
2300	1500
2400	1600

NOTE: For the RVR/CMV required with the use of EFVS of 350m – 500m: a reported RVR should be available (no CMV conversion).

17 PLANNING MINIMUMS

AMC6 CAT.OP.MPA.182 Fuel/energy scheme - Aerodrome selection policy - aeroplanes

BASIC FUEL SCHEME-PLANNING MINIMUMS

The operator should select an aerodrome as:

- (a) destination alternate aerodrome;
- (b) fuel ERA aerodrome; or
- (c) isolated destination aerodrome

only when the appropriate weather reports and/or forecasts indicate that the weather conditions will be at or above the planning minimums of Table 2 below (any limitations related to OEI operations are also taken into account):

AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS - EFFECTIVE 30 OCTOBER 2022

AMC8 CAT.OP.MPA.182 Fuel/energy scheme - aerodrome selection policy - aeroplanes

BASIC FUEL SCHEME WITH VARIATIONS - PLANNING MINIMUMS

- (a) Variations to the basic fuel schemes in the selection of aerodromes in regard to the planning minimums are methods to reduce the meteorological margins based on the established mitigating measures.
- (b) As a minimum, the operator should:
 - (1) use a suitable computerised flight-planning system; and
 - (2) have established an operational control system that includes flight monitoring.
- (c) In addition:

- (1) the duration of the planned flight from take-off to landing does not exceed 6 hours or, in the event of in-flight re-planning, in accordance with point CAT.OP.MPA.181(d), the remaining flying time to destination does not exceed 4 hours; and
- (2) the planned flight should have a minimum flight crew of two pilots.

- (d) Additionally, the operator should select an aerodrome as:

- (1) a destination alternate aerodrome, or
- (2) fuel ERA aerodrome,

only when the appropriate weather reports and/or forecasts indicate that the weather conditions will be at or above the planning minimums of Table 3 below.

AMC8 CAT.OP.MPA182 Table 3 - Basic fuel scheme with variations- planning minimums - aeroplanes Destination alternate aerodrome, fuel ERA aerodrome

Row	Type of approach operation	Aerodrome ceiling (cloud base or vertical visibility)	RVR/VIS
1	Type B instrument approach operations	DA/H + 200ft	RVR/VIS + 550m
2	3D Type A instrument approach operations, based on a facility with a system minimum of 200ft or less	DA/H + 200ft	RVR/VIS ¹ + 800m
3	Two or more usable type A instrument approach operations ² , each based on a separate navigation aid	DA/H or MDA/H ³ + 200ft	RVR/VIS ¹ + 1000m
4	Other type A instrument approach operations	DA/H or MDA/H + 400ft	RVR/VIS + 1500m
5	Circling approach operations	MDA/H + 400ft	VIS + 1500m

Crosswind planning minimums: see Table 1 of AMC3 CAT.OP.MPA.182.

Wind limitations should be applied taking into account the runway condition (dry, wet, contaminated).

¹ The higher of the usable RVR or VIS.

² Compliance with point CAT.OP.MPA.182(f) should be ensured.

³ The higher of the usable DA/H or MDA/H.

NOTE: The operator may select the most convenient planning minimums row. For example, aerodrome with two type A approaches: one ILS CAT I (DA 350ft/DH250ft/550m) another VOR/DME (MDA 650ft/1500m). The operator may use Row 2 instead of Row 3.

AMC9 CAT.OP.MPA.182 Fuel/energy scheme - aerodrome selection policy - aeroplanes

BASIC FUEL SCHEME WITH VARIATIONS - PLANNING MINIMUMS

- (a) Variations to the basic fuel schemes in the selection of aerodromes in regard to the planning minimums are methods to reduce the meteorological margins based on the established mitigating measures.
- (b) As a minimum, the operator should:

- (1) use a suitable computerized flight-planning system;
- (2) hold an approval for limited-visibility approach operations for that fleet; and
- (3) have established an operational control system that includes flight monitoring.

- (c) Additionally, the operator should select an aerodrome as:

- (1) destination alternate aerodrome;
- (2) fuel ERA aerodrome; or
- (3) isolated destination aerodrome

only when the appropriate weather reports and/or forecasts indicate that the weather conditions will be at or above the planning minimums of Table 4 below.

**AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS -
EFFECTIVE 30 OCTOBER 2022**

**AMC6 CAT.OP.MPA182 Table 4 - Basic fuel scheme with variations - planning minimums
Destination alternate aerodrome, fuel ERA aerodrome, isolated destination aerodrome**

Row	Type of approach operation	Aerodrome ceiling (cloud base or vertical visibility)	RVR/VIS
1	Two or more usable type B instrument approach operations to two separate runways ¹	DA/H ² + 100ft	RVR ³ + 300m
2	One usable type B instrument approach operation	DA/H + 150ft	RVR + 450m
3	3D Type A instrument approach operations, based on a facility with a system minimum of 200ft or less	DA/H + 200ft	RVR/VIS ³ + 800m
4	Two or more usable type A instrument approach operations ¹ , each based on a separate navigation aid	DA/H or MDA/H + 200ft	RVR/VIS ³ + 1000m
5	Other type A instrument approach operations	DA/H or MDA/H + 400ft	RVR/VIS + 1500m
6	Circling approach operations	MDA/H + 400ft	VIS + 1500m
Crosswind planning minimums: see Table 1 of AMC3 CAT.OP.MPA.182.			
Wind limitations should be applied taking into account the runway condition (dry, wet, contaminated).			

¹ Compliance with point CAT.OP.MPA.182(f) should be ensured.

² The higher of the usable DA/H or MDA/H.

³ The higher of the usable RVR or VIS.

NOTE: The operator may select the most convenient planning minimums row. For example, aerodrome with two type B approaches: one CAT 3 (0ft/75m) another CAT 1 (200ft/550m). The operator may use Row 2 and use CAT 3 (0 + 150ft/75 + 450m) instead of Row 1 CAT 1 (200 + 100ft/550 + 300m).