

## CHART LEGEND - EASA AIR OPS AERODROME OPERATING MINIMUMS (AOM)

Publication of minimums does not constitute authority for their use by all operators. Each individual operator must obtain appropriate approval for their use.

### 1. GENERAL

The inverted "Standard" label in the upper left corner of the minimums box indicates that the minimums are based on EASA AIR OPS and State Minimums, if provided. They are not compared against other concepts like ECOMS. For a detailed excerpt of EASA AIR OPS minimums refer to Jeppesen ATC-Chapter "AERODROME OPERATING MINIMUMS - EASA AIR OPERATIONS".

Jeppesen charted minimums are not below any State-provided minimums. RVR/CMV/VIS values are shown in measuring units as reported by the governing agency.

AOM for take-off and landing are either shown on Jeppesen instrument approach or aerodrome charts or on a separate minimums listing.

Landing minimums will be shown as RVR, as provided within the EASA tables.

A Visibility, prefixed "VIS", will only be charted if a VIS value is published as State minimum.

A Converted Meteorological Visibility, prefixed "CMV", will only be charted if a CMV value is published as State minimum.

Take-off minimums are shown as RVR, or without prefix if they are either RVR or VIS.

A Visibility, prefixed "VIS", will only be charted for take-off if a VIS value is published as State minimum.

Circling minimums without prefix are always visibilities.

For separate minimums listings (like 10-9S pages) RVR, CMV and VIS are abbreviated as "R", "C" and "V".

*NOTE: Most of the samples in this document are intended to illustrate only the relevant information of the related paragraph. Other sections (like circling minimums) within the samples are intentionally left blank.*

### 2. TAKE-OFF MINIMUMS

Low visibility take-off operations below a visibility of 800m require that the **operator** verifies that Low Visibility Procedures (LVP) or equivalent procedures have been established and are in force.

Jeppesen charts the lowest possible take-off minimums (including LVTO) because the LVP information is not always published in the AIP.

Only if there is a clear statement within the AIP that LVP are not available for the specific airport, the take-off minimum will be charted as RVR 550m VIS 800m (or higher State value).

The multiple RVR requirement means, that the required RVR value must be achieved for all of the relevant RVR reporting points (touchdown zone, mid and rollout end of runway), except for the initial part, which can be determined by pilot assessment. Approved operators may reduce their take-off minimums to RVR 75m with an approved lateral guidance system and if the runway is protected for CAT III landing operations and equivalent facilities are available.

Jeppesen charts a take-off RVR of 75m only if the runway is approved for CAT IIIB operations with RVR 75m.

Night operations always require runway end lights. This is not indicated in the take-off minimums box.

Sample of Take-off Minimums

	TAKE-OFF					
	Low Visibility Take-off					
	<b>1</b> HIRL, CL & relevant RVR	RL, CL & relevant RVR	RL & CL	Day: RL & RCLM Night: RL or CL	Day: RL or RCLM Night: RL or CL	Adequate vis ref (Day only)
A						
B	TDZ, MID, RO	TDZ, MID, RO				
C	RVR 125m	RVR 150m	RVR 200m	RVR 300m	400m	500m
D						

**1** RWY 08R, 26L: RVR 75m with approved guidance system or HUD/HUDLS.

### 3. CIRCLING MINIMUMS

Circling minimums are only charted if a circling OCA(H) or MDA(H) is provided by the procedure source. Otherwise, the circling box is removed. If circling is not authorized by the procedure source, it will be noted in the Briefing Strip header. Where straight-in minimums are higher than circling minimums (DH/MDH or RVR/VIS), a note is added to remind the pilot that the higher straight-in minimums have to be used.

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## Sample of Circling Minimums

CIRCLE-TO-LAND			
Max Kts	MDA(H)	VIS	
100	750' (667')	1500m	
135	750' (667')	1600m	
180	850' (767')	2400m	
205	850' (767')	3600m	

Normally, only CDFA minimums are shown. They are identified by the use of a DA/MDA(H) label. Jeppesen does not apply an add-on when publishing a DA/MDA(H) for a CDFA non-precision approach, because this depends on operator specific factors.

The CDFA condition will always be identified by the term 'CDFA' above the DA/MDA(H) label.

Non-CDFA minimums are shown in exceptional cases and identified by an MDA(H) label. The MDA(H) label is also charted if the State explicitly publishes an MDA(H) on procedure source instead of an OCA(H). The non-CDFA condition will always be identified by the term 'non-CDFA' above the MDA(H) label.

#### 4. NON-PRECISION APPROACH MINIMUMS AND CHART PROFILE VIEW

According to the EASA AIR OPS requirements for Commercial Air Transport Operations (Part CAT), all non-precision approaches shall be flown using the continuous descent final approach (CDFA) technique with decision altitude (height), and the missed approach shall be executed when reaching the DA(H) or the missed approach point (MAP), whichever occurs first. The lateral part of the missed approach procedure must be flown via the MAP unless stated otherwise in the procedure.

Jeppesen criteria for charting of CDFA or non-CDFA minimums are based on **AMC1 CAT.OP.MPA.115** Approach flight technique – aeroplanes.

## Sample of Non-precision Minimums (CDFA)

Standard		STRAIGHT-IN	
VOR DME CDFA		VOR	
DA/MDA(H) 470' (391')		ALS out	
A B C D	RVR 1100m	RVR 1500m	
		RVR 1800m	

## Sample of Non-precision Minimums (CDFA + non-CDFA)

Standard		STRAIGHT-IN LANDING RWY 09L	
VOR DME CDFA		VOR non-CDFA	
DA/MDA(H) 470' (391')		MDA(H) 470' (391')	
A B C D	RVR 1100m	ALS out	ALS out
		RVR 1500m	RVR 2000m
		RVR 1300m	RVR 2200m
		RVR 1800m	RVR 2200m

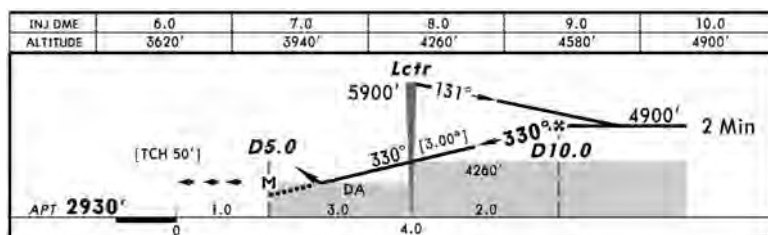
The profile depiction will be modified to show the continuous descent track on final approach. Source-published minimum altitudes will be shown as segment minimum altitudes in the profile (grey shaded box). These minimum altitudes are typically provided for obstacle clearance and must not be violated to remain clear of obstacles or terrain.

If not published by the procedure source, a table depicting distance vs altitude or DME vs altitude information will be calculated by Jeppesen and shown above the profile view.

The missed approach pull-up arrow is shown at the point where the decision height is reached. There is no level segment depicted prior to the MAP, the MAP symbol is shown at the same position as published by the procedure source.

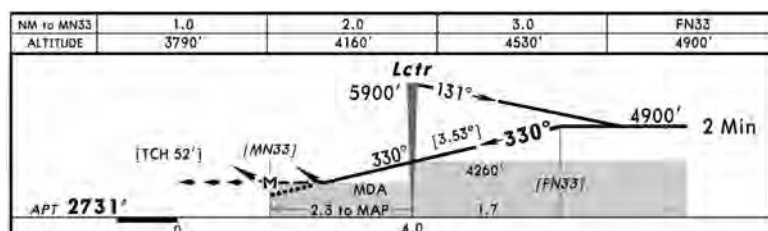
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CDFA depiction (profile view)



In exceptional cases it may be necessary to include both, CDFA and non-CDFA flight path. In this case, a level segment is shown prior to the missed approach point and the pull-up arrow is shown at the MAP to depict the non-CDFA procedure.

CDFA and non-CDFA depiction (profile view)



## 5. CAT I PRECISION AND APV APPROACH MINIMUMS

An RVR of less than 750m may be used:

- for CAT I operations to runways with FALS and TDZ and CL, or
- for CAT I operations to runways with FALS but without TDZ and/or CL when using an approved head-up guidance landing system (HUDLS) or an equivalent approved system, or
- for CAT I operations to runways with FALS but without TDZ and/or CL when conducting a coupled or flight-director-flown approach to decision height, or

- for APV operations to runways with FALS and TDZ and CL when using an approved head-up display (HUD).

**NOTE:** A conversion of reported meteorological visibility to CMV should not be used for any RVR minimum less than 800m. In this case a minimum VIS of 800m applies for the procedure. A charted "RVR XXXm" (any RVR below 800m) have to be understood as "RVR XXXm or VIS 800m".

The European States publish more and more LPV (SBAS CAT I) procedures. To clearly differentiate between the CAT I and APV operations, the terms "LPV CAT I" and "LPV" are used in the minimums box.

Sample of CAT I Minimums (FALS + TDZ + CL)

Standard			
STRAIGHT-IN LANDING RWY 26			
ILS			
DA(H) 529' (200')			
	FULL	TDZ or CL out	ALS out
A			
B			
C	RVR 550m	RVR 550m <b>I</b>	RVR 1200m
D			
<b>I</b> W/a HUD/AP/FD: RVR 750m			

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The note "W/o HUD/AP/FD: RVR 750m" indicates that the use of HUD **or** autopilot **or** flight director is required if TDZ or CL are not available. Otherwise the RVR is 750m.

Sample of CAT I Minimums (FALS, no TDZ and/or no CL)

Standard		STRAIGHT-IN LANDING RWY 26 LPV CAT I	
		DA(H) 529' (200')	
		FULL	ALS out
A			
B			
C		RVR 550m <b>I</b>	RVR 1200m
D			
		<b>I</b> W/o HUD/AP/FD: RVR 750m	

The note "W/o HUD/AP/FD: RVR 750m" indicates that the use of HUD **or** autopilot **or** flight director is required for the charted RVR. Otherwise the RVR is 750m.

Sample of CAT I Minimums (IALS)

Standard		STRAIGHT-IN LANDING RWY 26 ILS	
		DA(H) 529' (200')	
		FULL	ALS out
A			
B			
C		RVR 750m	RVR 1200m
D			

Sample of APV Minimums (FALS + TDZ + CL)

Standard		STRAIGHT-IN LANDING RWY 26 LNAV/VNAV	
		DA(H) 560' (250')	
			ALS out
A			
B			
C		RVR 750m <b>I</b>	RVR 1300m
D			
		<b>I</b> With TDZ & CL & HUD: RVR 550m	

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The RVR is 750m. The RVR could only be reduced to 550m if TDZ and CL are operational and a HUD is used.

Sample of APV Minimums (FALS, no TDZ and/or no CL)

Standard		STRAIGHT-IN LANDING RWY 26	
		LNAV/VNAV	
		DA(H) 560'(250')	
		ALS out	
A	RVR 750m	RVR 1300m	
B			
C			
D			

## 6. LOWER THAN STANDARD CAT I MINIMUMS

Operators must be approved by their authority to conduct lower than standard CAT I operations. For approved operators, tailored charts will be created on customer request only.

The minimum RVR is 300m.

EASA operators: For category D it is required to conduct an autoland. Otherwise, the minimum RVR is 350m; however, this value is not charted on Standard Jeppesen charts.

For US operators: Autoland or HUD to touchdown are required.

## 7. CAT II PRECISION APPROACH MINIMUMS

Minimums are applicable to EASA AIR OPS approved operators as well as to FAR 121 operators and those applying U.S. Operations Specifications (Ops Specs).

Sample of CAT II Minimums

Standard	STRAIGHT-IN LANDING RWY 09L
	CAT II ILS
	ABCD
	RA 100'
	DA(H) 179' (100')
	RVR 300m

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## 8. OTHER THAN STANDARD CAT II PRECISION APPROACH MINIMUMS

Other Than Standard CAT II minimums will only be published if the procedure is approved for it by the aerodrome's Civil Aviation Authority. Charting is similar to standard CAT II minimums. An RVR of 400m or below can only be used if CL are available.

Sample of other than Standard CAT II Minimums (FALS + CL)

Standard	
STRAIGHT-IN LANDING RWY 14	
OTS CAT II ILS ABCD RA 98'	
DA(H) 160' (100')	CL out
RVR 350m	RVR 450m

Sample of other than Standard CAT II Minimums (FALS, no CL)

Standard	
STRAIGHT-IN LANDING RWY 12	
OTS CAT II ILS ABCD RA 112'	
DA(H) 1293' (100')	
RVR 450m	

## 9. CAT III PRECISION APPROACH MINIMUMS

Only CAT IIIA minimums are charted on Standard charts within the EASA AIR OPS application area. The DH 50' value is charted based on customer input and does not necessarily mean that the pilot has to use this value as decision height. There is no State within Europe publishing a *specific* DH value for CAT IIIA operations as State required minimum.

RVR 200m, as the minimum RVR for CAT IIIA operations according to EASA Air OPS, is charted unless a higher value is required by the State of the aerodrome.

Pilots have to check the Flight Operations Manual (or similar documents) for their specific approvals.

## 10. AERODROME MINIMUMS LISTING

On customer request, the EASA AIR OPS minimums may be made available on a minimums listing page. The listings are indexed as 10-9S/10-9S1, 20-9S/20-9S1, etc.

TERPS change 20 was harmonized with the EASA 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 and a 10-9S page is normally not required.

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Sample of 10-9S chart

EDCM/AHE

JEPPESEN

Standard

(3 JAN 17)

(10-9S)

KAMENZ, EUROPE

ANKE INTL

STRAIGHT-IN RWY		A	B	C	D
29L	ILS	5087'(223')	5087'(223')	5087'(223')	5087'(223')
	FULL	R550m	R550m	R550m	R550m
	TDZ or CL out	R550m	R550m	R550m	R550m
	ALS out	R1200m	R1200m	R1200m	R1200m
	LOC	NOT APPLICABLE			
VOR DME		5510'(646')	5510'(646')	5510'(646')	5510'(646')
		R1500m	R1500m	R2300m	R2300m
	ALS out	R1500m	R1500m	R2400m	R2400m
	VOR	5510'(646')	5510'(646')	5510'(646')	5510'(646')
	ALS out	R2500m	R2500m	R2700m	R2700m
29R	RNAV	5810'(948')	5810'(948')	5810'(948')	5810'(948')
	(LNAV/VNAV)	R1500m	R1500m	R2400m	R2400m
	ALS out	R1500m	R1500m	R2400m	R2400m
	RNAV (LNAV)	5810'(948')	5810'(948')	5810'(948')	5810'(948')
	ALS out	R3800m	R3800m	R4000m	R4000m
	ALS out	R4500m	R4500m	R4700m	R4700m

W/o HUD/AP/FD: R750m

Continuous Descent Final Approach

CIRCLE-TO-LAND		100 KT	135 KT	180 KT	205 KT
Not authorized		5800'(960')	5870'(950')	6380'(1460')	6380'(1460')
North of airport		V1500m	V1600m	V2400m	V3600m

or higher minimums of preceding straight-in approach

TAKE-OFF						
Low Visibility Take-off						
ILS, CL & relevant RVR		IL, CL & relevant RVR	IL & CL	Day: IL or RCLM Night: IL or CL	Day: IL or RCLM Night: IL or CL	Approach vis ref (Day only)
A	TDZ, MID, RD	TDZ, MID, RD	R200m	R300m	400m	500m
B	R125m	R150m				
C						
D						

RWY 33: R75m with approved guidance system or HUD/HUDLS.

CHANGES: Take-off minimums

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CHANGES: Take-off minimums

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## 11. DEPICTION OF EASA AIR OPS AOM IN CASE OF EXISTING STATE MINIMUMS

If State minimums are officially published, the depiction of AOM may differ from the standard depiction where all values are expressed as RVR or VIS.

- If RVR and VIS are charted together, the RVR value is compulsory. If no RVR is reported, the reported VIS has to be used without conversion.
- No prefix is charted if RVR and VIS is identical. The reported RVR is compulsory. If no RVR is reported, the reported VIS has to be used without conversion.

- If only VIS is charted, the reported VIS has to be used without conversion.
- If CMV is charted, the pilot converts a reported VIS and compare this value against the charted CMV.