

**STANDARD DEPARTURE CHART**  
**RNAV (GNSS) -**  
**INSTRUMENT (SID)**

TWR 118.6 / 118.25  
APP 120.3  
124.05  
ACC 133.25

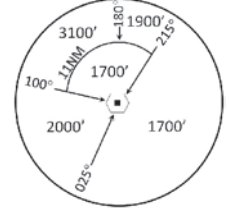
TRANSITION ALTITUDE  
11 000ft

D-ATIS AP ID-WSSS  
128.6

**SINGAPORE/Singapore Changi**  
**RWY 02L**  
**AROSO DEPARTURES**  
**AROSO 3E**

**ELEV, ALT IN FEET**  
BEARINGS, TRACKS AND  
RADIALS ARE MAGNETIC  
VAR 0°23'E (2022)

DISTANCES IN NM



**AROSO**  
02° 08' 46" N  
103° 24' 21" E

307°  
21

**AKMET**  
01° 53' 55" N  
103° 43' 39" E

**A110**

307°  
14

**AKOMA**  
01° 45' 22" N  
103° 54' 43" E

**A070**

335°  
14

**ATRUM**  
01° 32' 56" N  
104° 00' 57" E

**A030**

335°  
3

**MOLVO**  
01° 29' 55" N  
104° 02' 27" E

**A020**

023°  
8

**DER (RWY 02L)**  
01° 23' 05" N  
103° 59' 33" E

**TEKONG**  
DVOR/DME 116.5  
VTK  
01° 24' 55" N  
104° 01' 20" E  
60M

**GENERAL INFORMATION**

**INITIAL CLIMB**  
**3000FT**

**CAUTION: RWY 02R/20L NOT AVAILABLE FOR CIVIL USE UNTIL FURTHER ADVISED**

**NOTE:** RADAR REQUIRED

**NOTE:** RNAV-1 NAVIGATION SPECIFICATION GNSS REQUIRED

**NOTE:** ACFT UNABLE TO FLY THE SID PROFILE SHALL INFORM ATC PRIOR TO DEPARTURE AND EXPECT RADAR VECTURING IF NECESSARY

**NOTE:** WHEN TAKEN OFF THE SID, AS INSTRUCTED BY ATC, REFER TO ENR 1.5, SECTION 3, PARAGRAPH 3.2 [A] - FOR RWY 02L MINIMUM CLIMB GRADIENT

**NOTE:** REFER TO BACK PAGE FOR  
- FORMAL AND TABULAR DESCRIPTIONS  
- RADIO COM FAILURE PROCEDURES

**PROCEDURE INFORMATION**

SID SHALL NOT EXCEED IAS 230KTS UNTIL PASSING 4000FT AMSL AND NOT EXCEED IAS 250KTS UNTIL PASSING 10000FT AMSL.

CRUISING LEVELS WILL BE ISSUED AFTER TAKE-OFF BY SINGAPORE RADAR.

SID SHALL BE ON A MINIMUM CLIMB GRADIENT OF 5% UNTIL REACHING OR PASSING 2500FT, THEREAFTER 3.3%.

GND SPEED - KNOTS	75	100	150	200	250	300
5% V/V (fpm)	380	506	760	1013	1266	1519
3.3% V/V (fpm)	251	334	501	668	835	1003

NOT TO SCALE

31 OCT 2024

**AROSO 3E (SID) RNAV GNSS RWY 02L - DESCRIPTIONS****Formal & Abbreviated Descriptions**

Formal Description	Abbreviated Description	Path Terminator	Fly-Over required
To MOLVO on course 023° at or above 2000ft, turn left.	MOLVO [M023; A020+; L] -	CF	N
To ATRUM.	ATRUM -	TF	N
To AKOMA at or above 7000ft, turn left.	AKOMA [A070+; L] -	TF	N
To AKMET at or above 11000ft.	AKMET [A110+] -	TF	N
To AROSO.	AROSO	TF	N

**Tabular Descriptions**

Path Term	Waypoint Name	Fly-Over	Course °M(°T)	Distance (NM)	Turn Direction	Altitude	Speed Limit	Navigation Spec
CF	MOLVO	-	023(023.4)	8.0	L	A020+	-	RNAV1
TF	ATRUM	-	333(333.4)	3.0	-	-	-	RNAV1
TF	AKOMA	-	333(333.4)	14.0	L	A070+	-	RNAV1
TF	AKMET	-	307(307.4)	14.0	-	A110+	-	RNAV1
TF	AROSO	-	307(307.4)	24.0	-	-	-	RNAV1

**Radio Communications Failure Procedure**

1	<b>SET TRANSPONDER TO MODE A/C CODE 7600</b>
2	<b>COMMUNICATIONS FAILURE OCCURS IMMEDIATELY AFTER DEPARTURE:</b> PROCEED DIRECT TO NYLON HOLDING AREA (NHA) CLIMBING TO THE LAST ASSIGNED ALTITUDE, THEREAFTER REFER TO SINGAPORE AIP ON RADIO COMMUNICATIONS FAILURE PROCEDURE.