

# A380

# Airplane Characteristics For Airport Planning AC

# PRELIMINARY ISSUE

The content of this document is the property of Airbus S.A.S. It is supplied in confidence and commercial security on its contents must be maintained.

It must not be used for any purpose other than that for which it is supplied, nor may information contained in it be disclosed to unauthorized persons. It must not be reproduced in whole or in part without permission in writing from the owners of the copyright. Requests for reproduction of any data in this document and the media authorized for it must be addressed to Airbus S.A.S.

© Airbus S.A.S. 2003. All rights reserved.

AIRBUS S.A.S.
31707 BLAGNAC CEDEX, FRANCE
CUSTOMER SERVICES
TECHNICAL DATA SUPPORT AND SERVICES
PRINTED IN FRANCE
© AIRBUS S.A.S. 2003
ALL RIGHTS RESERVED

AN EADS JOINT COMPANY WITH BAE SYSTEMS

Reference: L. AC Issue: Jan 04

# **AIRPLANE CHARACTERISTICS**

#### HIGHLIGHTS

#### PRELIMINARY ISSUE - JAN 30/04

# Description of technical changes:

SECTION	PAGE(S)	REASON FOR CHANGE
LEP	P1 to P3	Revised to reflect this revision indicating new, revised and/or deleted pages.
TOC	P1 to P3	Revised to reflect this revision.
1-1	P1	Revised paragraph "Correspondence"
2-3	P1	Updated figure "Ground Clearances"
2-7-4	P1 to P2	Added complementary dimensions on figures "Door clearances - cargo compartment doors"
2-7-5	P1 to P3	Added complementary dimensions on figures "Door clearances - cargo compartment doors".
5-0	P1	Revised page to reflect this revision
5-6	P1	New section "Ground Pneumatic Requirements"
5-6-1	P1	New figure "Ground Pneumatic Requirements - Heating"
5-6-2	P1	New figure "Ground Pneumatic Requirements - Cooling"
7-4	P1	Updated values of weights on MLG group for A380-800 and A380-800F models
7-4-2	P1	Updated values of loads on MLG group for A380–800 and A380–800F models
7–9	P1	Updated values of ACN flexible and rigid pavement for A380-800 models
7–9–1	P1	Updated figures "ACN - Flexible Pavement - A380-800 Models"
7-9-2	P1	Updated figure "ACN - Rigid Pavement - A380-800 Models"

### LIST OF EFFECTIVE PAGES

CHAPTER/ SECTION	С	PAGES	DATE	CHAPTER/ SECTION	С	PAGES	DATE
LEP	R	1 TO 3	JAN 30/04	2-7 2-7		3 4	SEP 30/03 SEP 30/03
ROR	R	1	JAN 30/04	2-7-1		1	SEP 30/03
TOC TOC	R	1 2	SEP 30/03 JAN 30/04	2-7-2 2-7-2		1 2	SEP 30/03 SEP 30/03
TOC		3	SEP 30/03	2-7-3		1	SEP 30/03
1-0		1	JUL 01/02	2–7–3		Ż	SEP 30/03
1–1	R	1	JAN 30/04	2-7-4 2-7-4	R R	1 2	JAN 30/04 JAN 30/04
1-2 1-2		1 2	JUL 01/02 JUL 01/02	2-7-4		3	JUL 01/02
1-2-1 1-2-1		1 2	JUL 01/02 JUL 01/02	2-7-5 2-7-5	R R	1 2	JAN 30/04 JAN 30/04
1-2-1		3	JUL 01/02	2-7-5	R	3	JAN 30/04
2-0		1	JUL 01/02	2-7-6		1	JUL 01/02
2–1		1	JUL 01/02	2-7-7 2-7-7		1 2	JUL 01/02 JUL 01/02
2-1-1 2-1-1		1 2	SEP 30/03 SEP 30/03	2-7-8		1	JUL 01/02
2-2		1	SEP 30/03	3-0		1	JUL 01/02
2-3 2-3	R	1 2	JAN 30/04 SEP 30/03	3–1		1	JUL 01/02
2-4		1	JUL 01/02	3–2		1	JUL 01/02
2-4-1		1	JUL 01/02	3-2-1 3-2-1		1 2	JUL 01/02 JUL 01/02
2-4-1 2-4-1		2	JUL 01/02 SEP 30/03	3-2-1 3-2-1		3 4	JUL 01/02 JUL 01/02
2-4-1		1	JUL 01/02	3–3		1	JUL 01/02
2-5-1 2-5-1		1 2	JUL 01/02 JUL 01/02	3-3-1 3-3-1		1 2	JUL 01/02 JUL 01/02
2-5-1		3	SEP 30/03			3	JUL 01/02
2-6		1	JUL 01/02	3-3-1 3-3-1		4	JUL 01/02
2-6-1 2-6-1		1 2	JUL 01/02 SEP 30/03	3-3-2 3-3-2		1 2	JUL 01/02 JUL 01/02
2-6-1		3	JUL 01/02	3-3-2 3-3-2		3 4	JUL 01/02 JUL 01/02
2-6-2		1	SEP 30/03	3-4		1	JUL 01/02
2-6-2		2	SEP 30/03	3-4-1		1	JUL 01/02
2-6-2		3	SEP 30/03	3-4-1		2	JUL 01/02
2-7 2-7		1 2	SEP 30/03 JUL 01/02	3–5		1	JUL 01/02

L.E.P. Page 1 JAN 30/04

# **AIRPLANE CHARACTERISTICS**

### LIST OF EFFECTIVE PAGES

CHAPTER/ SECTION	С	PAGES	DATE	CHAPTER/ SECTION	С	PAGES	DATE
3-5-1		1 2	JUL 01/02 JUL 01/02	5-4		1	JUL 01/02
3–5–1 4–0		1	JUL 01/02	5-4-1 5-4-1		1 2	SEP 30/03 SEP 30/03
4–1		1	JUL 01/02	5-4-3		1	SEP 30/03
4-2		1	JUL 01/02	5-4-4		1	SEP 30/03
4–2 4–3		2	SEP 30/03 JUL 01/02	5-4-6		1	SEP 30/03
4 <b>-</b> 3 4 <b>-</b> 3		1 2	JUL 01/02 JUL 01/02	5-4-7		1	SEP 30/03
4-4		1	JUL 01/02	5-4-8		1	SEP 30/03
4-5		1	JUL 01/02	5-4-10		1	SEP 30/03
4-5-1 4-5-1		1 2	JUL 01/02 JUL 01/02	5–6	N	1	JAN 30/04
4-5-2		1	JUL 01/02	5-6-1	N	1	JAN 30/04
4-5-2		Ż	JUL 01/02	5-6-2	N	1	JAN 30/04
4-5-3		1	SEP 30/03	5-7 5-7		1 2	SEP 30/03 SEP 30/03
4-5-4 4-5-4		1 2	JUL 01/02 JUL 01/02	6-0		1	JUL 01/02
4-5-5 4-5-5		1 2	JUL 01/02 JUL 01/02	6–1		1	JUL 01/02
4-6		1	JUL 01/02	6-1-1 6-1-1		1 2	JUL 01/02 JUL 01/02
4-7 4-7		1 2	JUL 01/02 JUL 01/02	6-1-2 6-1-2		1 2	JUL 01/02 JUL 01/02
4-7		3	JUL 01/02	6-1-3 6-1-3		1 2	JUL 01/02 JUL 01/02
5-0 5-0	R	1 2	SEP 30/03 JAN 30/04	6-1-3 6-1-3		3 4	JUL 01/02 JUL 01/02
5–1		1	JUL 01/02	6-1-4		1	JUL 01/02
5-1-1		1	SEP 30/03	6-1-4		2	JUL 01/02
5-1-2		1	SEP 30/03	6-1-4 6-1-4		3 4	JUL 01/02 JUL 01/02
5-1-3		1	SEP 30/03	6-1-5		1	JUL 01/02
5-1-4		1	SEP 30/03	6-1-5		2	JUL 01/02
5-2 5-2		1 2	JUL 01/02 SEP 30/03	6–1–5 6–1–5		3 4	JUL 01/02 JUL 01/02
5-2-1		1	SEP 30/03	6-1-6 6-1-6		1 2	JUL 01/02 JUL 01/02
5-2-2		1	SEP 30/03	6-1-6			JUL 01/02
5-2-3		1	SEP 30/03	6-1-6		3 4	JUL 01/02
5-3		1	JUL 01/02	6–2		1	JUL 01/02
5-3-1		1	JUL 01/02	6–3		1	JUL 01/02

L.E.P. Page 2 JAN 30/04

### LIST OF EFFECTIVE PAGES

CHAPTER/ SECTION	С	PAGES	DATE	CHAPTER/ SECTION	С	PAGES	DATE
6-4		1	JUL 01/02	9-1 9-1		3 4	JUL 01/02 SEP 30/03
6-4-1		1	JUL 01/02	9-1		1	JUL 01/02
7-0		1	JUL 01/02	9–2		2	SEP 30/03
7-1 7-1		1 2	SEP 30/03 SEP 30/03	9-2 9-2		3 4	JUL 01/02 SEP 30/03
7–1		3	SEP 30/03	9 <b>-</b> 3 9 <b>-</b> 3		1 2	JUL 01/02 SEP 30/03
7–2 7–2		1 2	SEP 30/03 SEP 30/03	9-3 9-3		3 4	JUL 01/02 SEP 30/03
7–3 7–3		1 2	JUL 01/02 SEP 30/03	9-4 9-4		1 2	JUL 01/02 SEP 30/03
7-4	R	1	JAN 30/04	9-4		3	JUL 01/02
7-4-1 7-4-1		1 2	JUL 01/02 JUL 01/02	9-4		4	SEP 30/03
7-4-2	R	1	JAN 30/04				
7-4-3 7-4-3		1 2	SEP 30/03 SEP 30/03				
7-5		1	JUL 01/02				
7–6		1	JUL 01/02				
7–7		1	JUL 01/02				
7–8		1	JUL 01/02				
7-8-1		1	JUL 01/02				
7-8-2 7-8-2		1 2	JUL 01/02 JUL 01/02				
7-8-3		1	JUL 01/02				
7-8-4		1	SEP 30/03				
7–9	R	1	JAN 30/04				
7-9-1 7-9-1	R	1 2	JAN 30/04 SEP 30/03				
7-9-2 7-9-2	R	1 2	JAN 30/04 SEP 30/03				
8-0		1	JUL 01/02				
8–1		1	JUL 01/02				
9-0		1	JUL 01/02				
9–1 9–1		1 2	JUL 01/02 SEP 30/03				

L.E.P. Page 3 JAN 30/04

#### RECORD OF REVISIONS

REVISION NUMBER	ISSUE DATE	REVISION NUMBER	ISSUE DATE	REVISION NUMBER	ISSUE DATE
PRELIMINARY	JAN 01/02				
PRELIMINARY	APR 01/02				
PRELIMINARY	JUL 01/02				
PRELIMINARY	SEP 30/03				
PRELIMINARY	JAN 30/04				

#### TABLE OF CONTENTS

```
1-0
         SCOPE
1-1
          Purpose
1-2
          Introduction
1-2-1
          Glossary
2-0
         AIRPLANE DESCRIPTION
          General Airplane Characteristics
2-1
2-1-1
           General Airplane Characteristics Data
2-2
          General Airplane Dimensions
2-3
          Ground Clearances
          Interior Arrangements - Plan View
2-4
2-4-1
          Standard Configuration
          Interior Arrangement - Cross-section
2-5
2-5-1
          Typical Configuration
2-6
          Cargo Compartments
2-6-1
          Location and Dimensions
2-6-2
           Loading Combinations
          Door Clearances
2-7
2-7-1
           Forward Doors
           Main and Upper Deck Doors
2-7-2
2-7-3
           Aft Doors
2-7-4
           Aft Cargo Compartment Doors
2-7-5
           Forward Cargo Compartment Doors
2-7-6
           Wing Landing Gear Doors
2-7-7
           Body Landing Gear Doors
2-7-8
           APU Doors
2-7-9
           Nose Landing Gear Doors (To Be Issued Later)
3-0
         AIRPLANE PERFORMANCE
3–1
          General Information
3–2
          Payload/Range
3-2-1
           ISA Conditions
3–3
          Take-Off Weight Limitation
3-3-1
           ISA Conditions
3-3-2
           ISA + 15 °C (59 °F)
3-4
          Landing Field Length
3-4-1
          Landing Field Length
3-5
          Final Approach Speed
3-5-1
           Final Approach Speed
4-0
         GROUND MANEUVERING
4-1
          General Information
4-2
          Turning Radii
          Minimum Turning Radii
4-3
4-4
          Visibility from Cockpit in Static Position (To Be Issued Later)
4-5
          Runway and Taxiway Turn Paths
4-5-1
           135° Turn - Runway to Taxiway
           90° Turn - Runway to Taxiway
180° Turn on a Runway
90° Turn - Taxiway to Taxiway
135° Turn - Taxiway to Taxiway
4-5-2
4-5-3
4-5-4
4-5-5
```

# TABLE OF CONTENTS (CONTINUED)

4-6 4-7	Runway Holding Bay (Apron) Airplane Parking
5-0 5-1 5-1-1	TERMINAL SERVICING  Airplane Servicing Arrangements  Typical Ramp Layout - Two Bridges - Standard Servicing Via Main
5-1-2 5-1-3	and Upper Decks Typical Ramp Layout – Two Bridges – Servicing Via Main Deck Typical Ramp Layout – Three Bridges – Servicing Via Main and Upper Decks
5-1-4 5-2 5-2-1	Typical Ramp Layout - Cargo Aircraft Servicing Terminal Operation - Passenger Aircraft Typical Turn-Round Time - Two Bridges - Standard Servicing Via
5-2-2 5-2-3	Main and Upper Decks Typical Turn-Round Time - Two Bridges - Servicing Via Main Deck Typical Turn-Round Time - Three Bridges - Servicing Via Main and Upper Decks
5-3 5-3-1 5-4	Terminal Operation - Cargo Aircraft Typical Turn-Round Time Ground Service Connections
5-4-1 5-4-2 5-4-3	Ground Service Connections Layout Grounding Points (To Be Issued Later) Hydraulic System
5-4-4 5-4-5 5-4-6	Electrical System Oxygen System (To Be Issued Later) Fuel System
5-4-7 5-4-8 5-4-9 5-4-10	Pneumatic System Potable Water System Oil System (To Be Issued Later) Toilet System
5-5 5-5-1 5-5-2 5-5-3 8 5-6	Engine Starting Pneumatic Requirements (To Be Issued Later) Outside Air Temperature = 50 °C (122 °F) (To Be Issued Later) Outside Air Temperature = 15 °C (59 °F) (To Be Issued Later) Outside Air Temperature = -40 °C (-40 °F) (To Be Issued Later) Ground Pneumatic Power Requirements
R 5-6-1 R 5-6-2 5-7	Heating Cooling Preconditioned Airflow Requirements
6-0 6-1 6-1-1 6-1-2 6-1-3 6-1-4 6-1-5 6-1-6 6-2 6-2-1	OPERATING CONDITIONS Engine Exhaust Velocities and Temperatures Engine Exhaust Velocities - Ground Idle Power Engine Exhaust Temperatures - Ground Idle Power Engine Exhaust Velocities - Breakaway Power Engine Exhaust Temperatures - Breakaway Power Engine Exhaust Velocities - Max. Take-Off Power Engine Exhaust Temperatures - Max. Take-Off Power Airport and Community Noise Data (To Be Issued Later) Airport and Community Noise Data (To Be Issued Later)

R R R

# **AIRPLANE CHARACTERISTICS**

# TABLE OF CONTENTS (CONTINUED)

6-3 6-3-1 6-3-2 6-3-3 6-4 6-4-1	Danger Areas of the Engines (To Be Issued Later) Danger Areas of the Engines - Ground Idle Power (To Be Issued Later) Danger Areas of the Engines - Breakaway Power (To Be Issued Later) Danger Areas of the Engines - Max. Take-Off Power (To Be Issued Later) APU Exhaust Velocities (To Be Issued Later) and Temperatures APU Exhaust Velocities (To Be Issued Later) and Temperatures
7-0 7-1 7-2 7-3 7-4 7-4-1 7-4-2 7-4-3 7-5 7-5-1 7-6 7-6-1 7-7 7-7-1 7-8 7-8-1 7-8-2 7-8-3 7-8-4 7-9 7-9-1 7-9-2	PAVEMENT DATA General Information Landing Gear Footprint Maximum Pavements Loads Landing Gear Loading on Pavement Landing Gear Loading on Pavement Wing Gear and Body Gear on Pavement Wing Gear and Body Gear on Pavement Flexible Pavement Requirements - US Army Corps of Engineers Design Method (To be Issued Later) Flexible Pavement Requirements - US Army Corps of Engineers Design Method S-77-1 (To Be Issued Later) Flexible Pavement Requirements - LCN Conversion (To be Issued Later) Flexible Pavement Requirements - LCN Conversion (To Be Issued Later) Rigid Pavement Requirements - Portland Cement Association Design Method (To Be Issued Later) Rigid Pavement Requirements - Portland Cement Association Design Method (To Be Issued Later) Rigid Pavement Requirements - LCN Conversion (To be Issued Later) Radius of Relative Stiffness Rigid Pavement Requirements - LCN Conversion (To Be Issued Later) Radius of relative stiffness (Other Values of E and L) Radius of relative stiffness (Other Values of E and L) ACN/PCN Reporting System Aircraft Classification Number - Flexible Pavement Aircraft Classification Number - Rigid Pavement
8-0 8-1	DERIVATIVE AIRPLANES Possible Future Derivative Airplane
9-0 9-1 9-2 9-3 9-4	SCALED DRAWINGS Scaled Drawing 1 in = 50 ft Scaled Drawing 1 in = 100 ft Scaled Drawing 1 cm = 500 cm Scaled Drawing 1 cm = 1000 cm

1-0 SCOPE

1-1 Purpose

1-2 Introduction

1-2-1 Glossary

#### **AIRPLANE CHARACTERISTICS**

#### 1-1 PURPOSE

This A380 AIRPLANE CHARACTERISTICS (AC) manual is issued for the A380-800 and A380-800F series aircraft to provide preliminary data needed by airport operators and airlines for airport facilities planning.

The A380-800 is a subsonic, very long range, very high capacity, civil transport aircraft.

There are two models in the A380-800 series:

- A380-841 model equipped with Rolls-Royce Trent 970 engine,
- A380-861 model equipped with Engine Alliance GP 7270 engine.

The A380-800F is a subsonic, very long range, civil freighter aircraft.

There are two models in the A380-800F series:

- A380-843F model equipped with Rolls-Royce Trent 977 engine,
- A380-863F model equipped with Engine Alliance GP 7277 engine.

In this manual, effectivity is managed as follows:

- by default, the data is effective for all A380-800 and A380-800F models,
- "A380-800/800F models" indicates that the related data or page is effective for all A380-800 and A380-800F models,
- "A380-800 models" restricts the effectivity of the related data or page to the A380-841 and A380-861 models,
- "A380-800F models" restricts the effectivity of the related data or page to the A380-843F and A380-863F models,
- the mention of a specific model (e.g. A380-841 model, A380-863F model, etc.) restricts the effectivity of the related data or page to that specific model.

This document conforms to NAS 3601.

The data contained in this manual is preliminary data and may be subject to change.

#### CORRESPONDENCE

Correspondence concerning this publication should be directed to:

AIRBUS S.A.S.
Technical Data Support and Services
1 Rond Point Maurice BELLONTE
31707 BLAGNAC CEDEX
FRANCE

#### **AIRPLANE CHARACTERISTICS**

#### 1-2 INTRODUCTION

This manual comprises 9 chapters with a List of Effective Pages (LEP) and a Table Of Contents (TOC) at the beginning of the manual.

Chapter 1 : SCOPE

Chapter 2: AIRPLANE DESCRIPTION

This chapter contains general dimensional and other basic aircraft data.

#### It covers

- aircraft dimensions and ground clearances,
- passengers and cargo compartments arrangement.

Chapter 3: AIRPLANE PERFORMANCE

This chapter indicates the aircraft performance.

#### It covers:

- payload/range,
- take-off and landing runway requirements,
- landing approach speed.

Chapter 4: GROUND MANEUVERING

This chapter provides the aircraft turning capability and maneuvering characteristics on the ground.

#### It includes:

- turning radii and visibility from the cockpit,
- runway and taxiway turn path.

#### Chapter 5: TERMINAL SERVICING

This chapter provides information for the arrangement of ground handling and servicing equipment.

#### It covers:

- location and connections of ground servicing equipment,
- engines starting pneumatic and preconditioned airflow requirements.

#### Chapter 6: OPERATING CONDITIONS

This chapter contains data and safety/environmental precautions related to engine and APU operation on the ground.

#### It includes:

- engine and APU exhaust velocities and temperatures data,
- engine noise data.

#### **AIRPLANE CHARACTERISTICS**

### Chapter 7 : PAVEMENT DATA

This chapter contains the pavements data helpful for airport planning.

#### It gives:

- landing gear foot print and static load,
- charts for flexible pavements with Load Classification Number (LCN),
- charts for rigid pavements with LCN,
- Aircraft Classification Number (ACN), Pavement Classification Number (PCN), reporting system for flexible and rigid pavements.

### Chapter 8 : DERIVATIVE AIRPLANES

This chapter gives relevant data of possible new version with the associated size change.

#### Chapter 9 : SCALED DRAWINGS

This chapter contains different A380-800 and A380-800F scaled drawings.

#### 1-2-1 GLOSSARY

#### 1. List of Abbreviations

A/C	Aircraft
ACN	Aircraft Classification Number
APU	Auxiliary Power Unit
BLG	Body Landing Gear
CAS	Calibrated Air Speed
CBR	California Bearing Ratio
CG	Center of Gravity
C/L	Center Line
Е	Young's Modulus
FAA	Federal Aviation Administration
FDL	Fuselage Datum Line
FR	Frame
FSTE	Full Size Trolley Equivalent
FWD	Forward
GPU	Ground Power Unit
GSE	Ground Support Equipment
ICAO	International Civil Aviation Organisation
ISA	International Standard Atmosphere
L	Left
L	Radius of relative stiffness
LCN	Load Classification Number
LPS	Last Pax Seating
MAC	Mean Aerodynamic Chord
MAX	Maximum
MIN	Minimum
MLW	Maximum Design Landing Weight
MRW	Maximum Design Ramp Weight
MTOW	Maximum Design Take-Off Weight
MTW	Maximum Design Taxi Weight
MZFW	Maximum Design Zero Fuel Weight
NLG	Nose Landing Gear
OAT	Outside Air Temperature
OWE	Operating Weight Empty
PAX	Passenger
PB/D	Passenger Boarding/Deboarding
PCN	Pavement Classification Number
R	Right
SLS	Sea Level Static condition
TBD	To Be Determined
TBIL	To Be Issued Later
ULD	Unit Load Device
US	United States
VF	Variable Frequency
Vref	Landing reference speed

WLG

Wing Landing Gear

#### 2. Units of Measurement

% percent °C degree Celsius ۰F degree Fahrenheit bar bar centimeter cm degree (angle) deg foot ft ft/s foot per second ft/s<sup>2</sup> foot per second squared ft<sup>2</sup> square foot ft<sup>3</sup> cubic foot in inch kg kilogram kg/l kilogram per liter km/h kilometer per hour kt knot kVA kiloVolt Ampere l liter pound lb m meter m/s meter per second  $\mathbf{m}^2$ square meter  $\mathbf{m}^3$ cubic meter

degree (angle)

MN/m³ MegaNewton per cubic meter

MPa MegaPascal nm nautical mile

minute

millimeter

pci pound-force per cubic inch psi pound-force per square inch

t tonne

min

mm

US gal United States gallon

#### **AIRPLANE CHARACTERISTICS**

#### 3. Design Weight Terminology

#### Maximum Design Ramp Weight (MRW):

Maximum weight for ground maneuver (including weight of taxi and runup fuel) as limited by aircraft strength and airworthiness requirements. It is also called Maximum Design Taxi Weight (MTW).

#### Maximum Design Landing Weight (MLW):

Maximum weight for landing as limited by aircraft strength and airworthiness requirements.

### Maximum Design Takeoff Weight (MTOW):

Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the take-off run).

#### Maximum Design Zero Fuel Weight (MZFW):

Maximum permissible weight of the aircraft less usable fuel.

#### Operating Weight Empty (OWE):

Weight of structure, powerplant, furnishings, systems, and other items of equipment that are an integral part of a particular aircraft configuration plus the operator's items.

The operator's items are the flight and cabin crew and their baggage, unusable fuel, engine oil, emergency equipment, toilet chemical and fluids, galley structure, catering equipment, seats, documents, etc.

#### Maximum Payload:

Maximum Design Zero Fuel Weight (MZFW) minus Operating Weight Empty (OWE).

#### Maximum Seating Capacity:

Maximum number of passengers specifically certified or anticipated for certification.

#### Maximum Cargo Volume:

Maximum usable volume available for cargo.

#### Usable Fuel:

Fuel available for aircraft propulsion.

#### 2-0 AIRPLANE DESCRIPTION

- 2-1 General Airplane Characteristics
  - 2-1-1 General Airplane Characteristics Data
- 2-2 General Airplane Dimensions
- 2-3 Ground Clearances
- 2-4 Interior Arrangements Plan View
  - 2-4-1 Standard Configuration
- 2-5 Interior Arrangements Cross-section
  - 2-5-1 Typical Configuration
- 2-6 Cargo Compartments
  - 2-6-1 Location and Dimensions
  - 2-6-2 Loading Combinations
- 2-7 Door Clearances
  - 2-7-1 Forward Doors
  - 2-7-2 Main and Upper Deck Doors
  - 2-7-3 Aft Doors
  - 2-7-4 Aft Cargo Compartment Doors
  - 2-7-5 Forward Cargo Compartment Doors
  - 2-7-6 Wing Landing Gear Doors
  - 2-7-7 Body Landing Gear Doors
  - 2-7-8 APU Doors
  - 2-7-9 Nose Landing Gear Doors (To Be Issued Later)

# **AIRPLANE CHARACTERISTICS**

2-1 GENERAL AIRPLANE CHARACTERISTICS

Airplane Model	A380-841	A380-861	
Engines	TRENT 970	GP 7270	
Maximum Design Ramp	kilograms	562 000	562 000
Weight (MRW)	pounds	1 238 998	1 238 998
Maximum Design TakeOff	kilograms	560 000	560 000
Weight (MTOW)	pounds	1 234 588	1 234 588
Maximum Design Landing	kilograms	386 000	386 000
Weight (MLW)	pounds	850 984	850 984
Maximum Design Zero	kilograms	361 000	361 000
Fuel Weight (MZFW)	pounds	795 869	795 869
Operating Weight	kilograms	280 713	280 724
Empty (OWE) - Typical	pounds	618 866	618 890
Maximum Payload	kilograms	84 320	84 140
	pounds	185 893	185 496
Standard Seating Capacity	Three-Class	555 (1)	555 (1)
Usable Fuel Capacity	liters	315 289	315 289
	US gallons	83 290	83 290
	kilograms (density = 0.785 kg/l)	247 502	247 502
	pounds	545 648	545 648
Volume of cargo compartments	cubic meters	175.2	175.2
(2)	cubic feet	6187	6187

#### NOTE: (1) 555 pax:

- main deck : First Class 22 and Tourist Class 334
- upper deck: Business Class 96 and Tourist Class 103
- (2) Volume of cargo compartments:
  - lower deck forward cargo compartment
    - (usable containerised volume):  $89.4 \text{ m}^3$  (3 157 ft<sup>3</sup>)
  - lower deck aft cargo compartment
    - (usable containerised volume): 71.5 m<sup>3</sup> (2 525 ft<sup>3</sup>)
  - lower bulk cargo compartment
    - (usable volume):  $14.3 \text{ m}^3 (505 \text{ ft}^3)$

General Airplane Characteristics Data A380-800 Models

Airplane Model	A380-843F	A380-863F	
Engines	TRENT 977	GP 7277	
Maximum Design Ramp	kilograms	592 000	592 000
Weight (MRW)	pounds	1 305 136	1 305 136
Maximum Design TakeOff	kilograms	590 000	590 000
Weight (MTOW)	pounds	1 300 727	1 300 727
Maximum Design Landing	kilograms	427 000	427 000
Weight (MLW)	pounds	941 374	941 374
Maximum Design Zero	kilograms	402 000	402 000
Fuel Weight (MZFW)	pounds	886 258	886 258
Operating Weight	kilograms	251 900	252 080
Empty (OWE) - Typical	pounds	555 344	555 741
Maximum Payload	kilograms	150 100	149 920
	pounds	330 913	330 517
Usable Fuel Capacity	liters	315 289 (2)	315 289 (2)
	US gallons	83 290	83 290
	kilograms (density = 0.785 kg/l)	247 502	247 502
	pounds	545 648	545 648
Volume of cargo compartments	cubic meters	952.3	952.3
(1)	cubic feet	33 630	33 630

```
NOTE: (1) Volume of cargo compartments:
```

```
- lower deck forward cargo compartment
```

(usable containerised volume): 89.4 m<sup>3</sup> (3 157 ft<sup>3</sup>)

- lower deck aft cargo compartment

(usable containerised volume): 71.5 m<sup>3</sup> (2 525 ft<sup>3</sup>)

- lower bulk cargo compartment

(usable volume) :  $18.4 \text{ m}^3$  (650 ft<sup>3</sup>)

- main deck cargo compartment

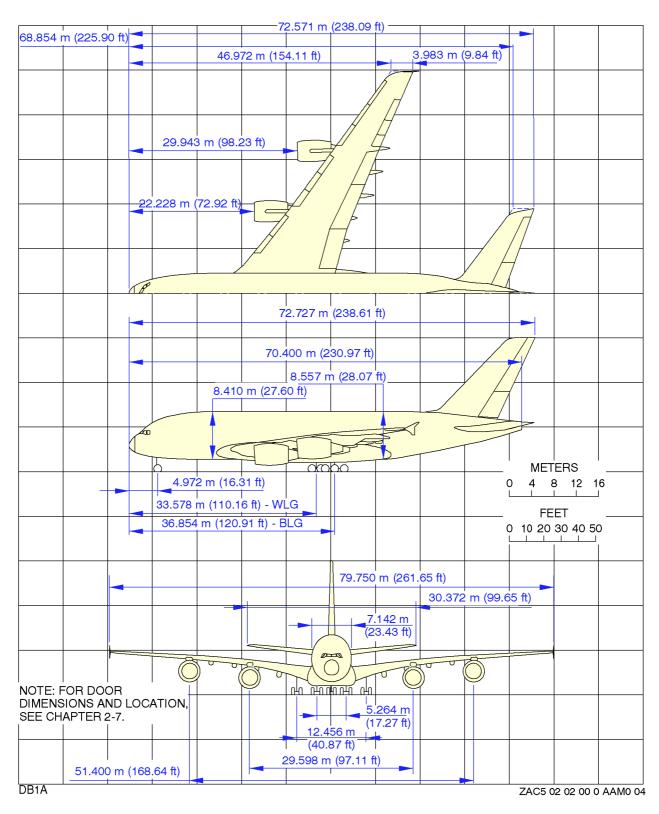
(usable palletized volume): 516 m<sup>3</sup> (18 222 ft<sup>3</sup>)

- upper deck cargo compartment

(usable palletized volume) :  $257 \text{ m}^3$  (9  $075 \text{ ft}^3$ )

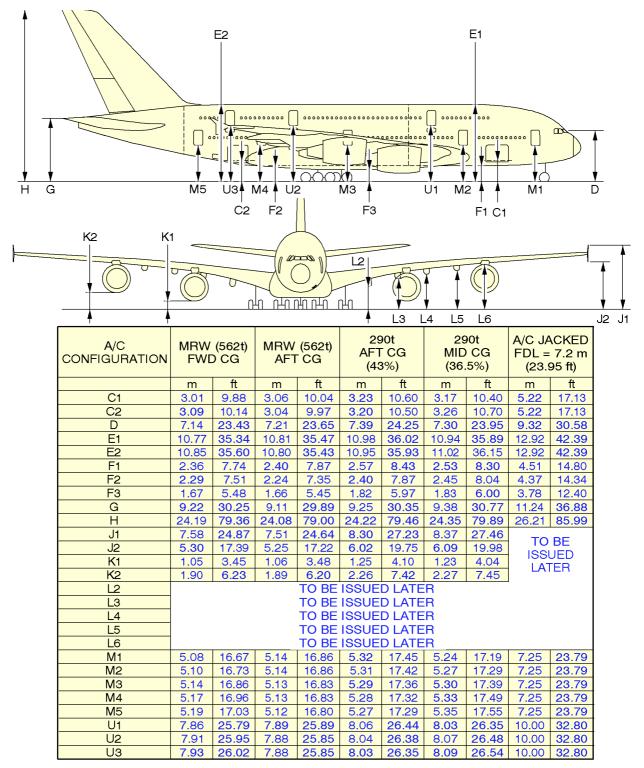
(2) Usable fuel capacity with center tank: 355 850 l (94 005 US gal)

General Airplane Characteristics Data A380-800F Models



General Airplane Dimensions A380-800/800F Models

#### **AIRPLANE CHARACTERISTICS**



NOTE: MAXIMUM JACKING WEIGHT = 333 700 kg

ZAC8 02 03 00 0 AAM0 06

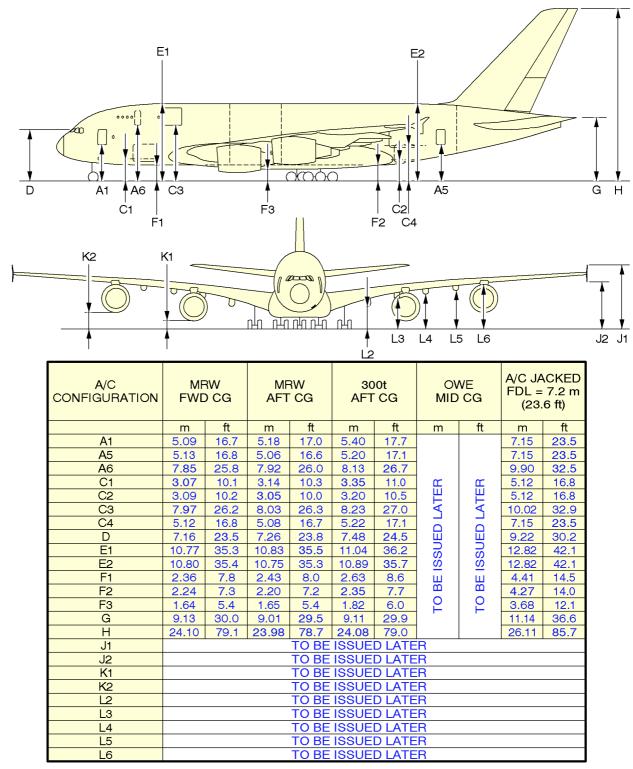
Ground clearances A380-800 Models

2-3 Page 1 JAN 30/04

R

R

#### **AIRPLANE CHARACTERISTICS**



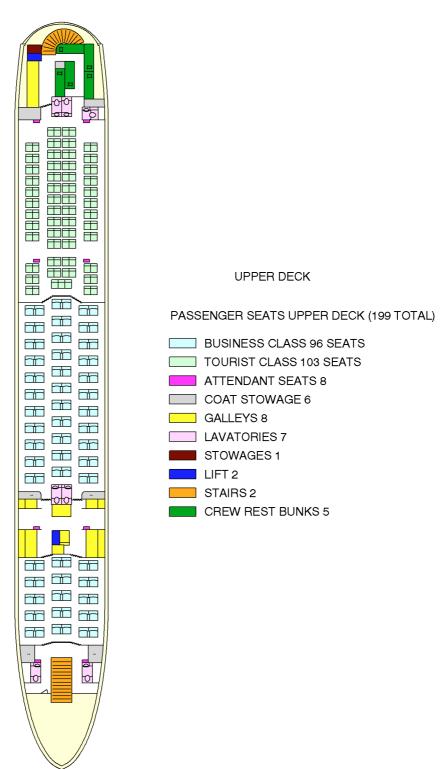
ZAC8 02 03 00 0 AAN0 02

Ground clearances A380-800F Models

R

# **AIRPLANE CHARACTERISTICS**

2-4 INTERIOR ARRANGEMENTS - PLAN VIEW

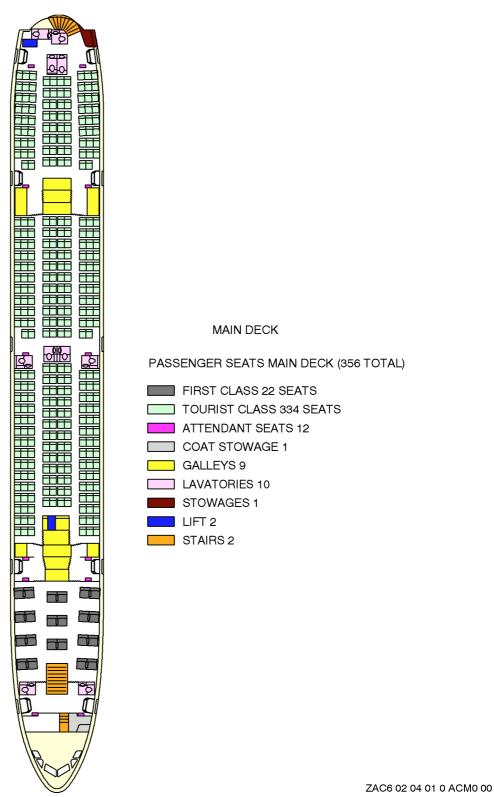


ZAC6 02 04 01 0 AAM0 00

Interior Arrangements - Plan View Standard Configuration (Sheet 1/2) A380-800 Models

> 2-4-1 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**

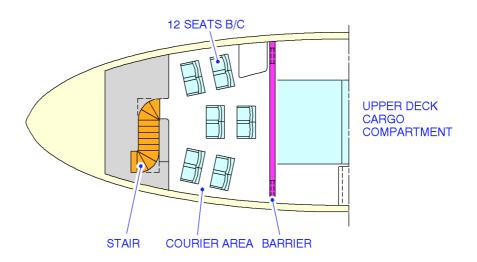


Interior Arrangements - Plan View Standard Configuration (Sheet 2/2) A380-800 Models

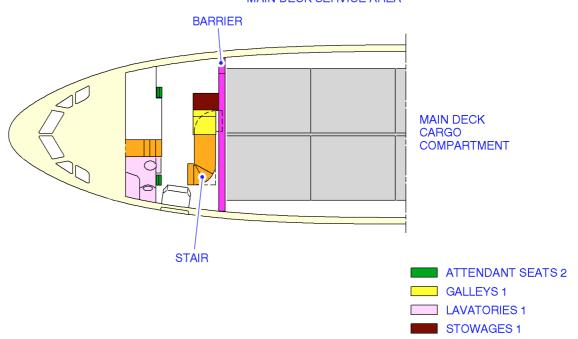
> 2-4-1 Page 2 JUL 01/02

# **AIRPLANE CHARACTERISTICS**

# UPPER DECK COURIER AREA



#### MAIN DECK SERVICE AREA



ZAC6 02 04 01 0 FAM0 01

Interior Arrangements - Plan View Standard Configuration A380-800F Models

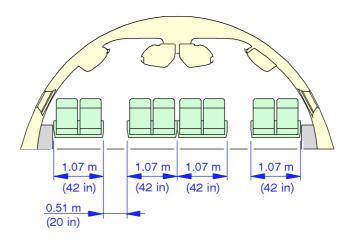
> 2-4-1 Page 3 SEP 30/03

# **AIRPLANE CHARACTERISTICS**

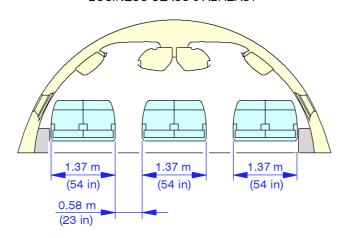
2-5 INTERIOR ARRANGEMENTS - CROSS-SECTION

### **AIRPLANE CHARACTERISTICS**

#### UPPER DECK TOURIST CLASS 8 ABREAST



#### UPPER DECK BUSINESS CLASS 6 ABREAST



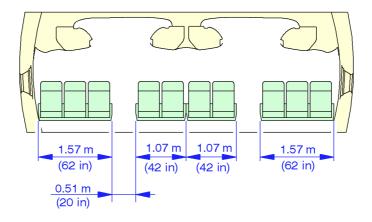
ZAC6 02 05 01 0 AAM0 00

Interior Arrangements - Cross-section Typical Configuration (Sheet 1/2) A380-800 Models

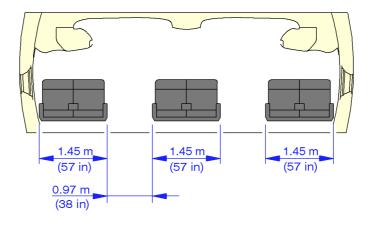
> 2-5-1 Page 1 JUL 01/02

# **AIRPLANE CHARACTERISTICS**

#### MAIN DECK TOURIST CLASS 10 ABREAST



#### MAIN DECK FIRST CLASS 6 ABREAST

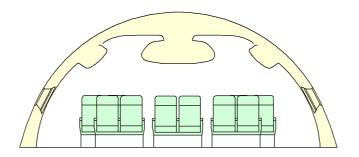


ZAC6 02 05 01 0 ACM0 00

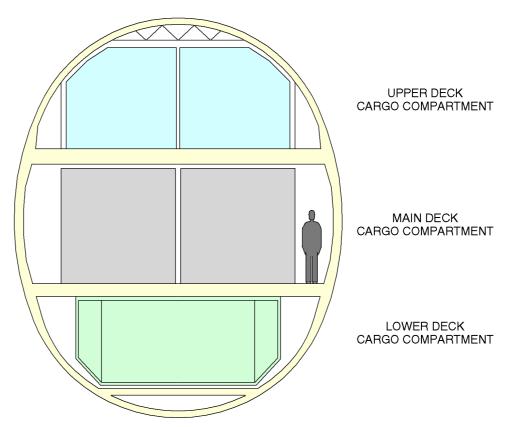
Interior Arrangements - Cross-section Typical Configuration (Sheet 2/2) A380-800 Models

> 2-5-1 Page 2 JUL 01/02

# **AIRPLANE CHARACTERISTICS**



UPPER DECK COURIER AREA



ZAC6 02 05 01 0 FAM0 01

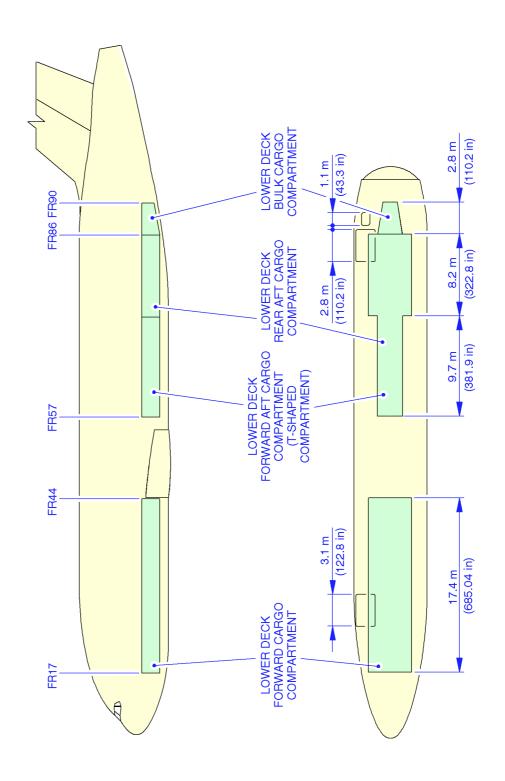
Interior Arrangements - Cross-section Typical Configuration A380-800F Models

> 2-5-1 Page 3 SEP 30/03

# **AIRPLANE CHARACTERISTICS**

2-6 CARGO COMPARTMENTS

# **AIRPLANE CHARACTERISTICS**

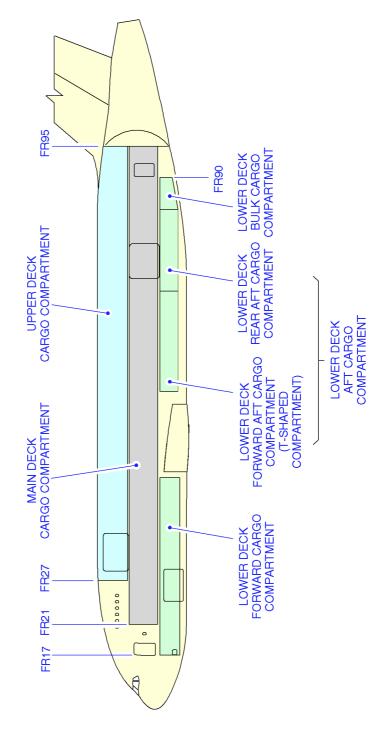


ZAC6 02 06 01 0 AAM0 00

Cargo Compartments Location and Dimensions A380-800 Models

> 2-6-1 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**

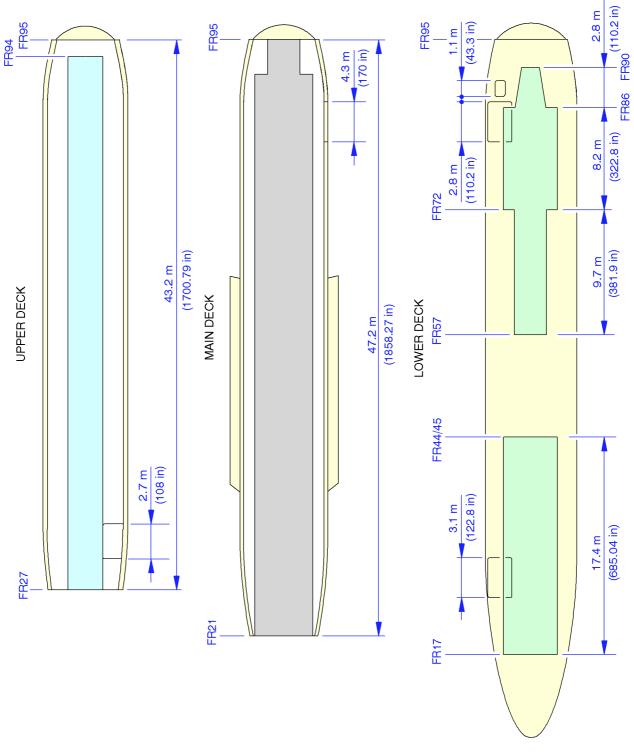


ZAC6 02 06 01 0 FAM0 00

Cargo Compartments Location and Dimensions (Sheet 1/2) A380-800F Models

> 2-6-1 Page 2 SEP 30/03

# **AIRPLANE CHARACTERISTICS**

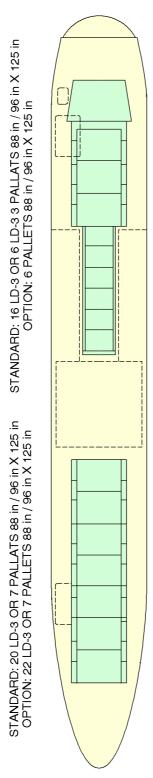


ZAC6 02 06 01 0 FCM0 00

Cargo Compartments Location and Dimensions (Sheet 2/2) A380-800F Models

> 2-6-1 Page 3 JUL 01/02

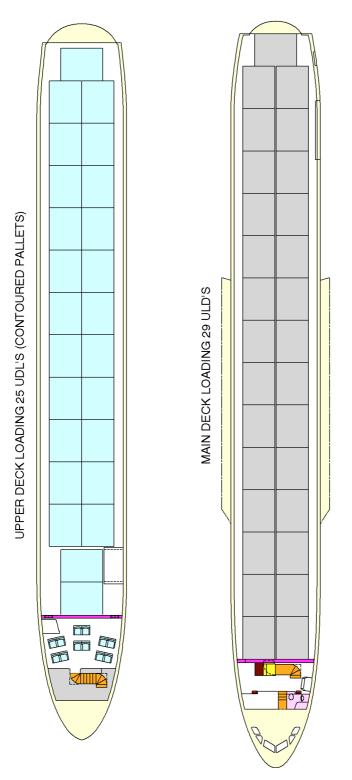
# **AIRPLANE CHARACTERISTICS**



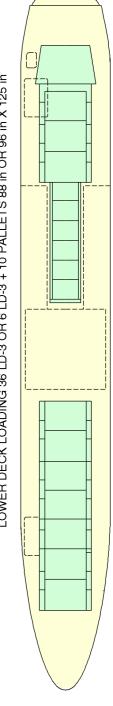
Cargo Compartments Loading Combinations A380-800 Models ZAC6 02 06 02 0 AAM0 01

2-6-2 Page 1 SEP 30/03

## **AIRPLANE CHARACTERISTICS**



LOWER DECK LOADING 36 LD-3 OR 6 LD-3 + 10 PALLETS 88 in OR 96 in X 125 in

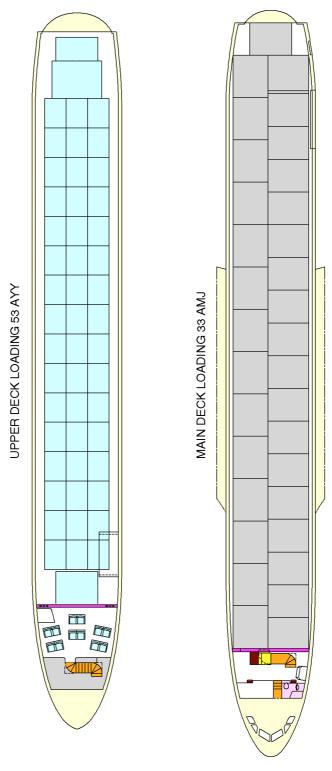


ZAC6 02 06 02 0 FAM0 01

Cargo Compartments Loading Combinations A380-800F Models

> 2-6-2 Page 2 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

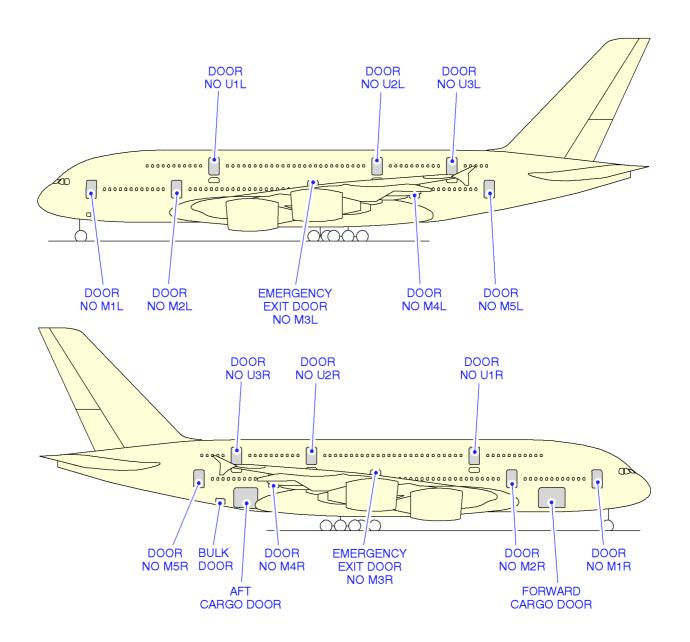


ZAC6 02 06 02 0 FCM0 00

Cargo Compartments Loading Combinations A380-800F Models

> 2-6-2 Page 3 SEP 30/03

#### **AIRPLANE CHARACTERISTICS**

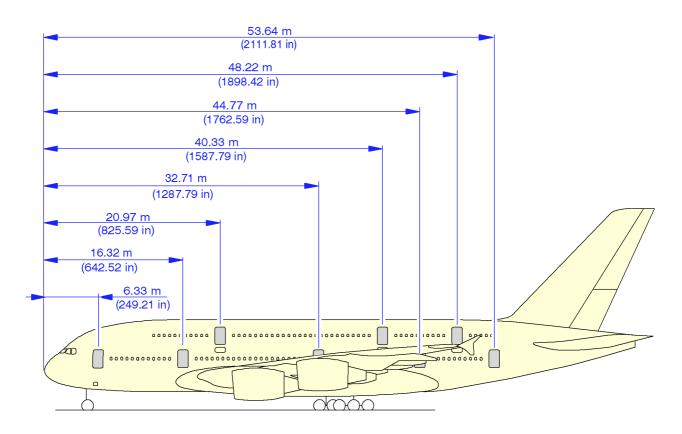


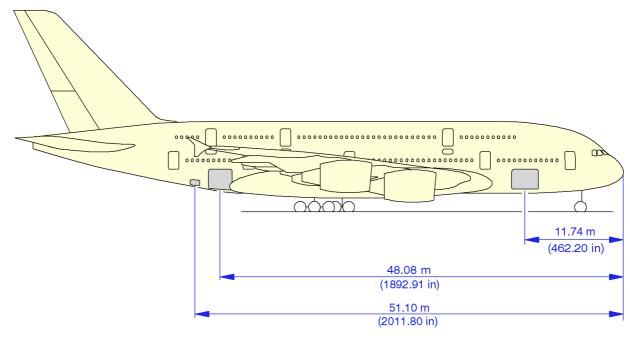
ZAC6 02 07 00 0 AAM0 01

Door Clearances Door Location (Sheet 1/2) A380-800 Models

> 2-7 Page 1 SEP 30/03

## **AIRPLANE CHARACTERISTICS**



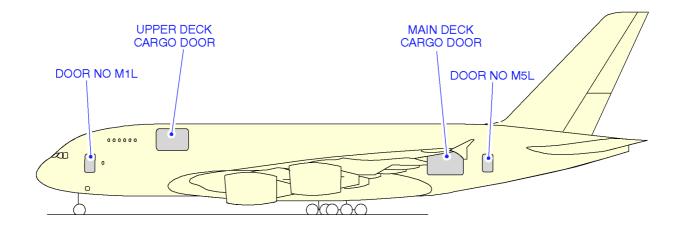


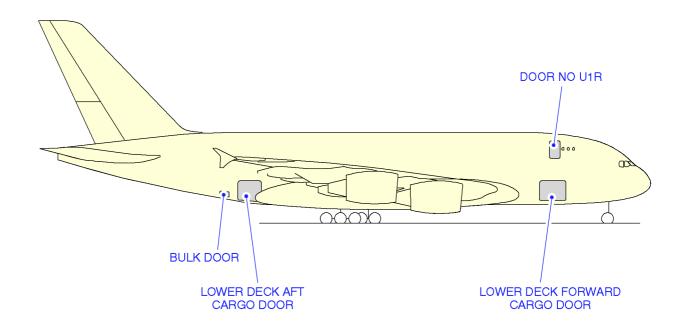
ZAC6 02 07 00 0 ACM0 00

Door Clearances Door Location (Sheet 2/2) A380-800 Models

> 2-7 Page 2 JUL 01/02

## **AIRPLANE CHARACTERISTICS**



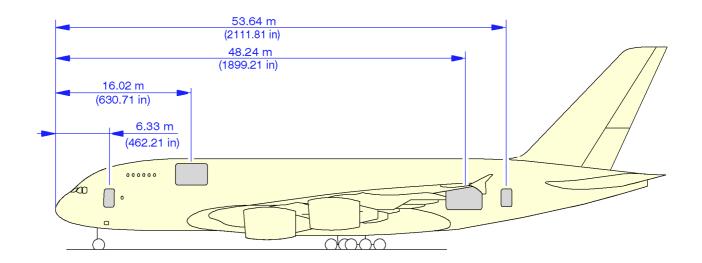


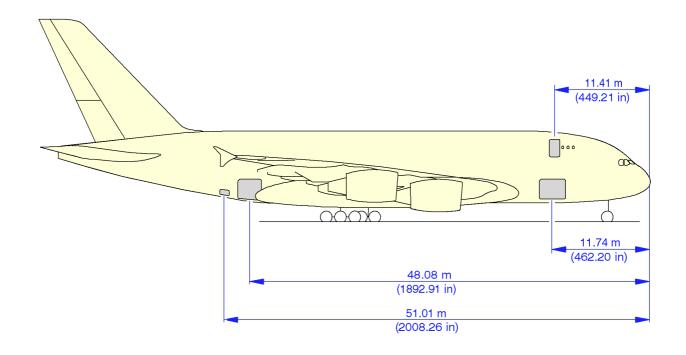
ZAC6 02 07 00 0 FAM0 01

Door Clearances Door Location (sheet 1/2) A380-800F Models

> 2-7 Page 3 SEP 30/03

## **AIRPLANE CHARACTERISTICS**



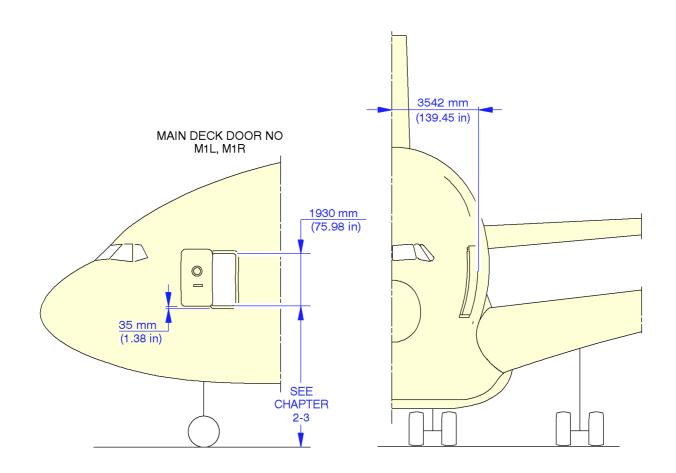


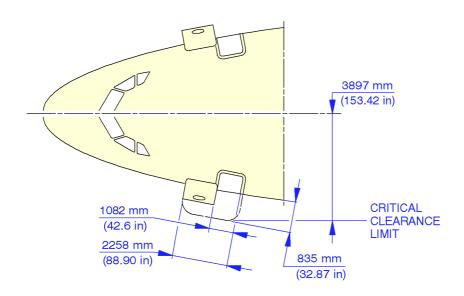
ZAC6 02 07 00 0 FCM0 02

Door Clearances Door Location (Sheet 2/2) A380-800F Models

> 2-7 Page 4 SEP 30/03

## **AIRPLANE CHARACTERISTICS**



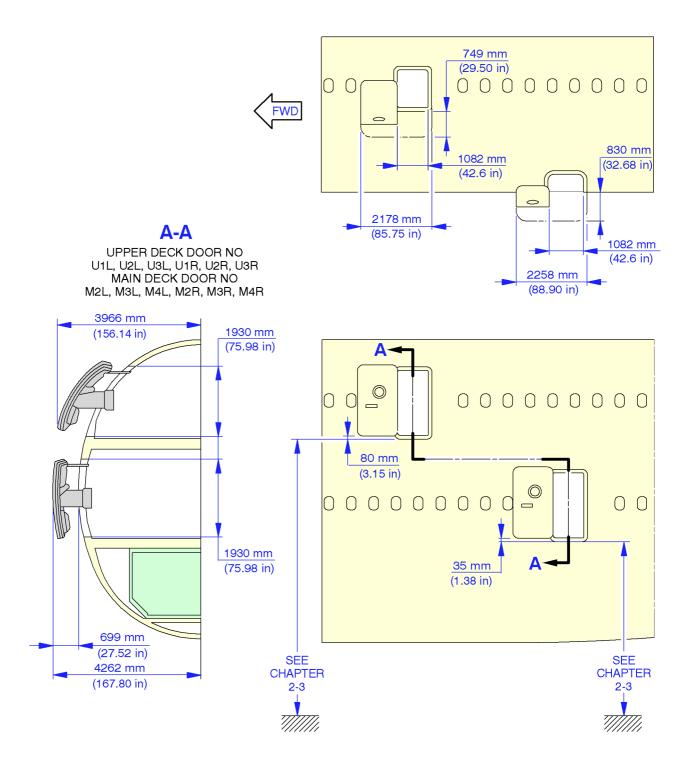


ZAC6 02 07 01 0 AEM0 01

Door Clearances Forward Doors

> 2-7-1 Page 1 SEP 30/03

#### **AIRPLANE CHARACTERISTICS**

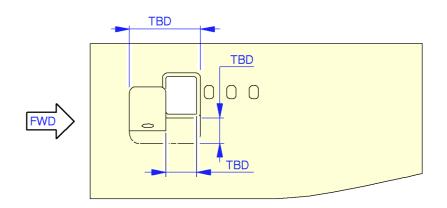


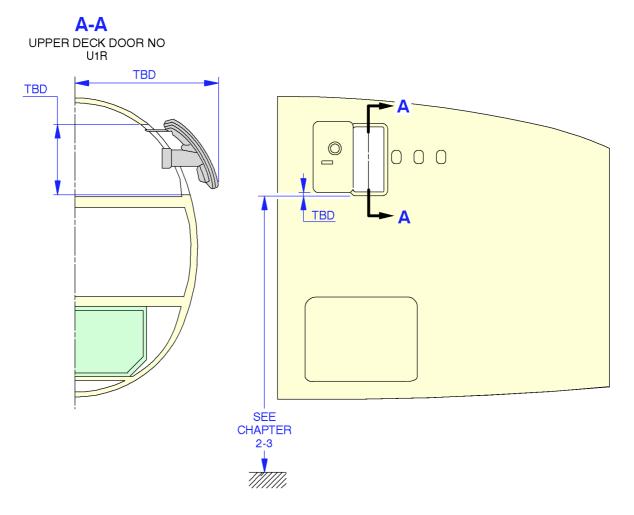
ZAC6 02 07 02 0 AGM0 01

Door Clearances Main and Upper Deck Doors A380-800 Models

> 2-7-2 Page 1 SEP 30/03

## **AIRPLANE CHARACTERISTICS**



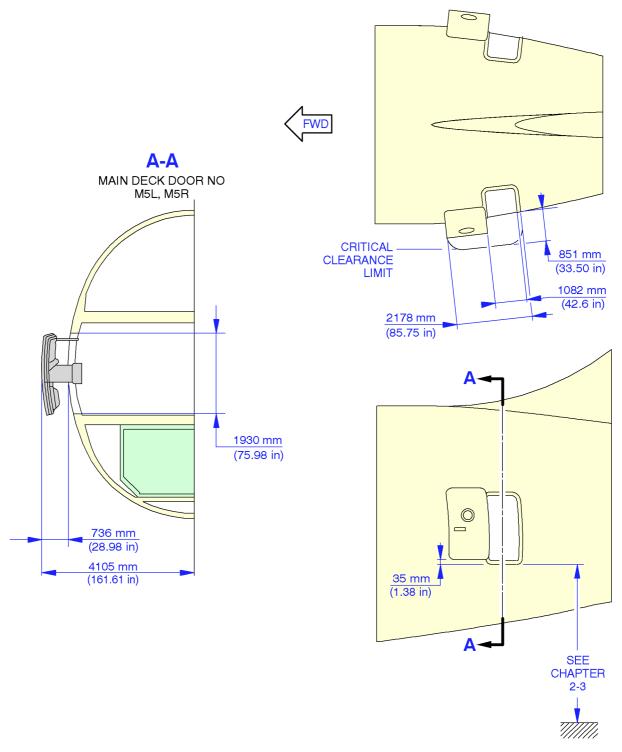


ZAC6 02 07 02 0 FGM0 01

Door Clearances Upper Deck Doors A380-800F Models

> 2-7-2 Page 2 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

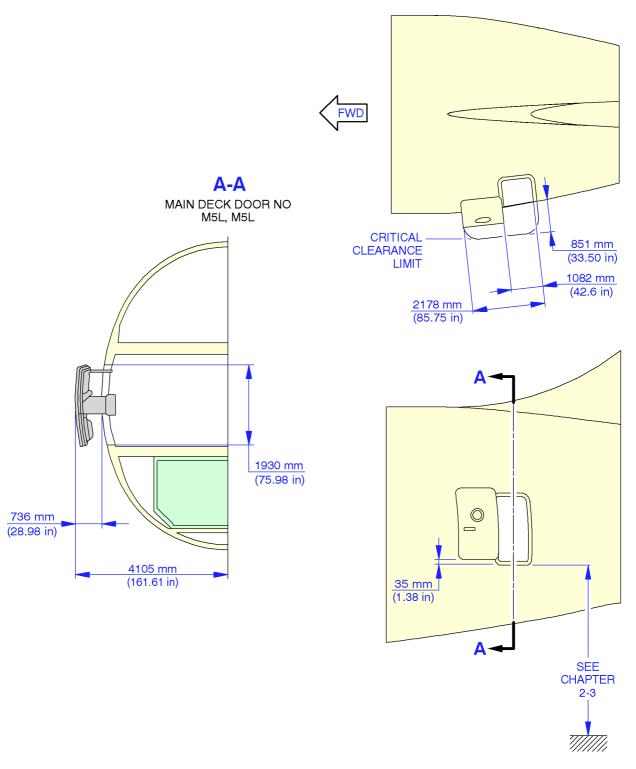


ZAC6 02 07 03 0 AJM0 01

Door Clearances Aft Doors A380-800 Models

> 2-7-3 Page 1 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

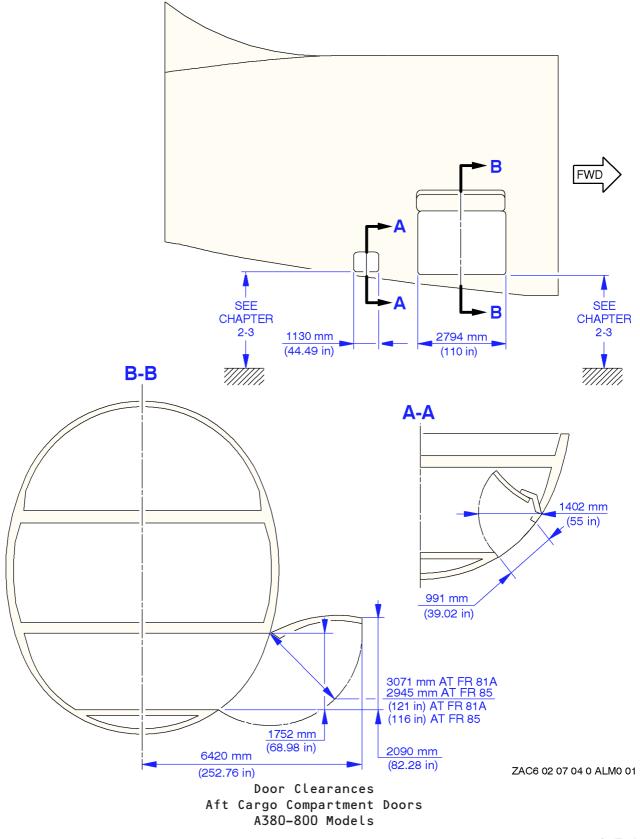


ZAC6 02 07 03 0 FJM0 00

Door Clearances Aft Doors A380-800F Models

> 2-7-3 Page 2 SEP 30/03

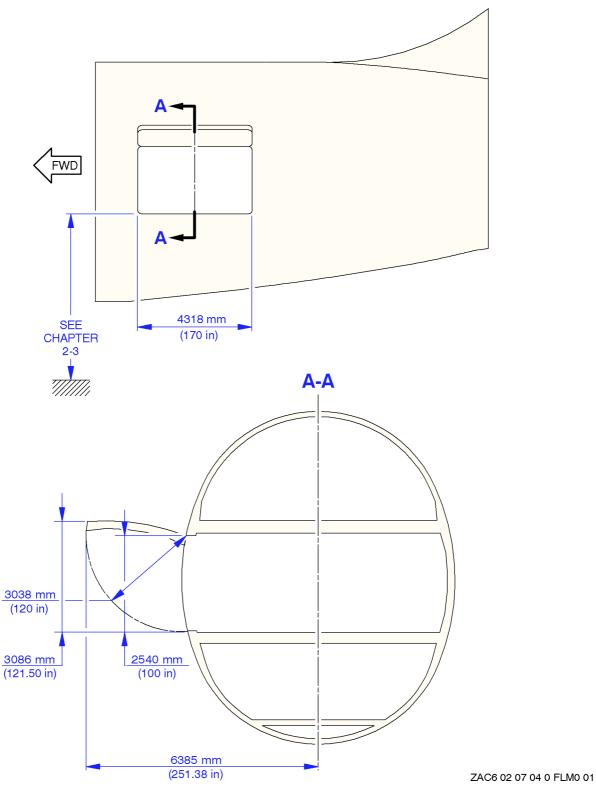
## **AIRPLANE CHARACTERISTICS**



R

R

## **AIRPLANE CHARACTERISTICS**

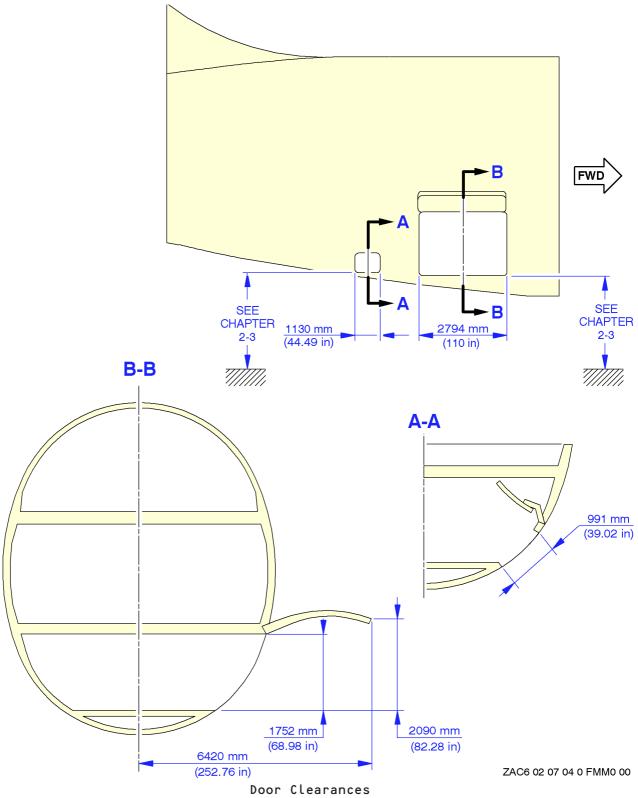


Door Clearances
Aft Cargo Compartment Doors (Sheet 1/2)
A380-800F Models

2-7-4 Page 2 JAN 30/04

R

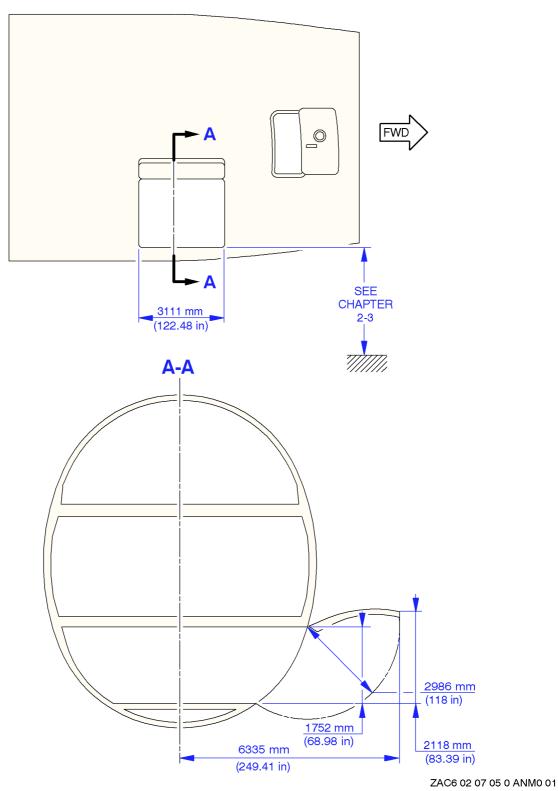
## **AIRPLANE CHARACTERISTICS**



Door Clearances
Aft Cargo Compartment Doors (Sheet 2/2)
A380-800F Models

2-7-4 Page 3 JUL 01/02

## **AIRPLANE CHARACTERISTICS**



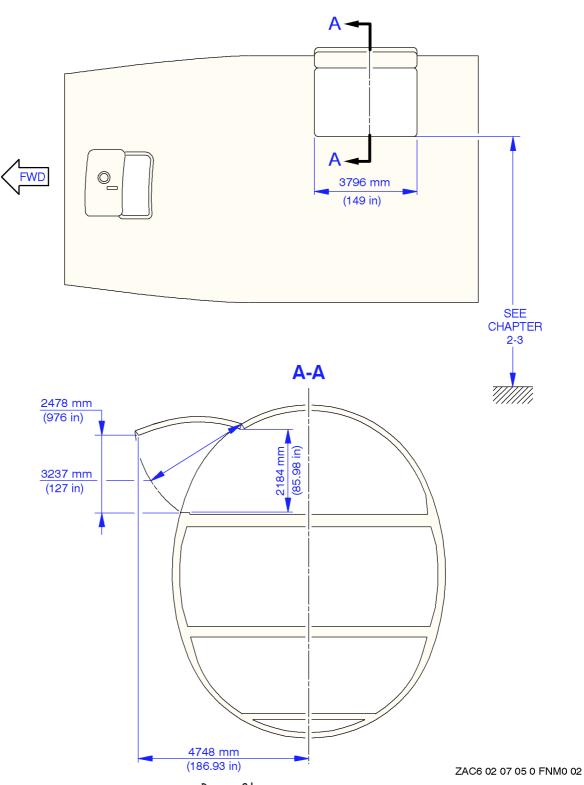
Door Clearances Forward Cargo Compartment Doors A380-800 Models

> 2-7-5 Page 1 JAN 30/04

R

R

## **AIRPLANE CHARACTERISTICS**

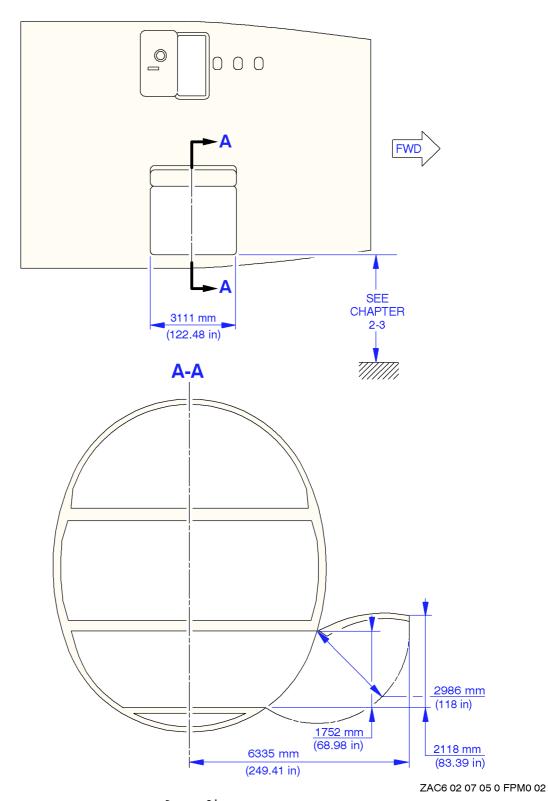


Door Clearances Left Forward Cargo Compartment Doors (Sheet 1/2) A380-800F Models

> 2-7-5 Page 2 JAN 30/04

R

## **AIRPLANE CHARACTERISTICS**

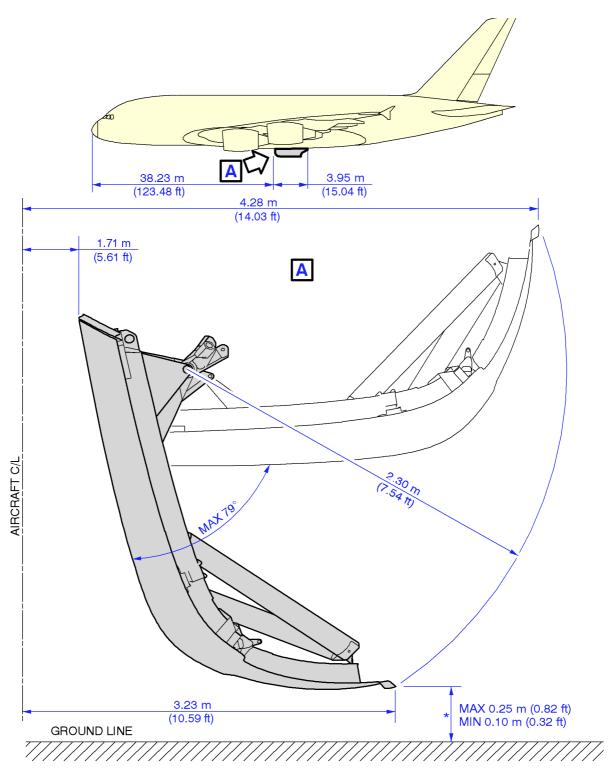


Door Clearances
Right Forward Cargo Compartment Doors (Sheet 2/2)
A380-800F Models

2-7-5 Page 3 JAN 30/04

R

## **AIRPLANE CHARACTERISTICS**



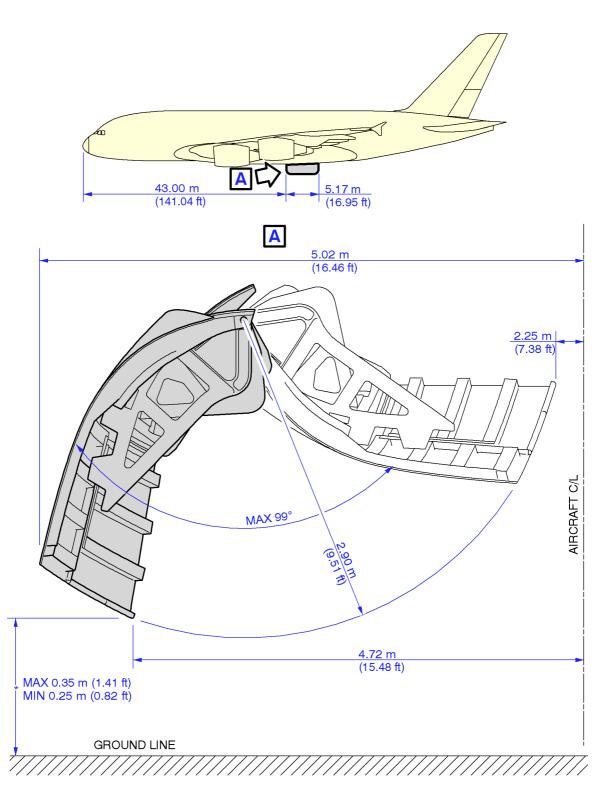
\* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

Door Clearances Wing Landing Gear Doors A380-800/800F Models

> 2-7-6 Page 1 JUL 01/02

ZAC0 02 07 06 0 AAM0 00

## **AIRPLANE CHARACTERISTICS**



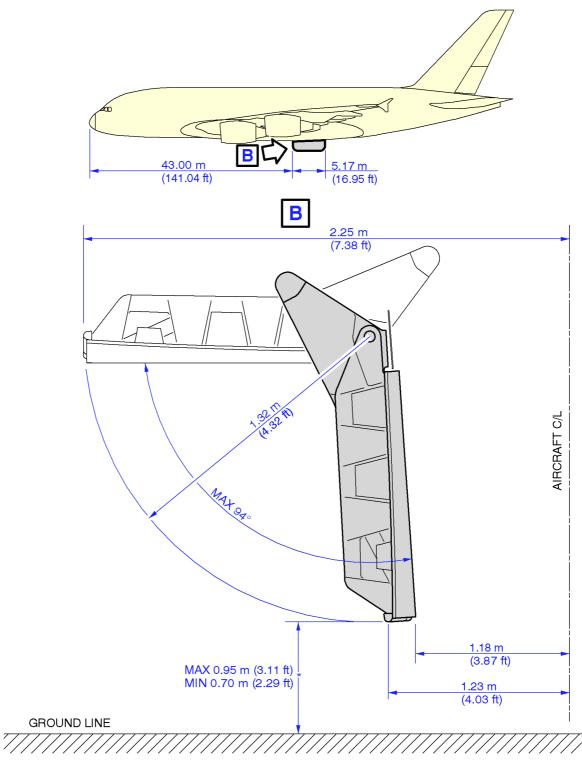
\* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

ZAC0 02 07 07 0 ACMA 00

Door Clearances Body Landing Gear Doors (Sheet 1/2) A380-800/800F Models

> 2-7-7 Page 1 JUL 01/02

## **AIRPLANE CHARACTERISTICS**



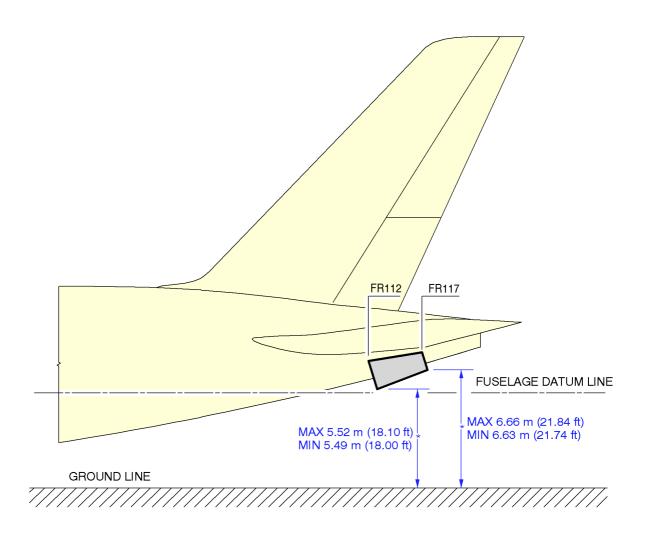
\* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

ZAC0 02 07 07 0 ACMM 00

Door Clearances Body Landing Gear Doors (Sheet 2/2) A380-800/800F Models

> 2-7-7 Page 2 JUL 01/02

## **AIRPLANE CHARACTERISTICS**



\* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

ZAC0 02 07 08 0 AEM0 00

Door Clearances
APU Doors
A380-800/800F Models

2-7-8 Page 1 JUL 01/02

#### 3-0 AIRPLANE PERFORMANCE

- 3-1 General Information
- 3-2 Payload/Range
  - 3-2-1 ISA Conditions
- 3-3 Take Off Weight Limitation
  - 3-3-1 ISA Conditions
  - 3-3-2 ISA + 15 °C (59 °F)
- 3-4 Landing Field Length
  - 3-4-1 Landing Field Length
- 3-5 Final Approach Speed
  - 3-5-1 Final Approach Speed

#### 3-1 General Information

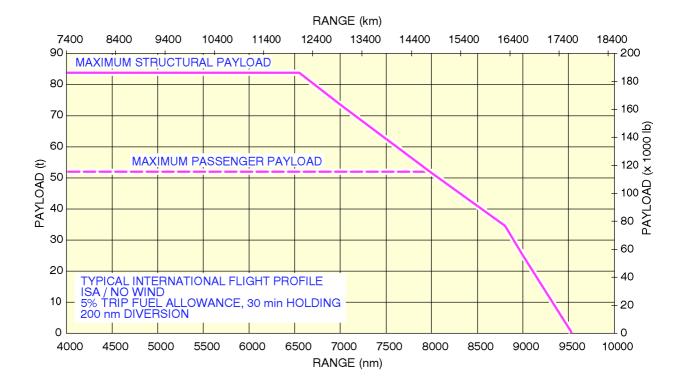
Standard day temperatures for the altitudes shown are tabulated below:

Altitude		Standard Day Temperature	
FEET	METERS	°F	°C
0	0	59.0	15.0
2000	610	51.9	11.6
4000	1220	44.7	7.1
6000	1830	37.6	3.1
8000	2440	30.5	-0.8

## **AIRPLANE CHARACTERISTICS**

3-2 PAYLOAD/RANGE

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

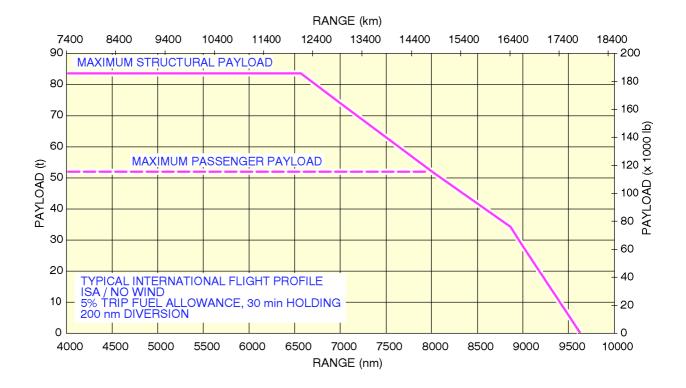


ZAC5 03 02 01 0 AAM0 01

Payload/Range ISA Conditions - TRENT 970 Engines A380-841 Model

> 3-2-1 Page 1 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

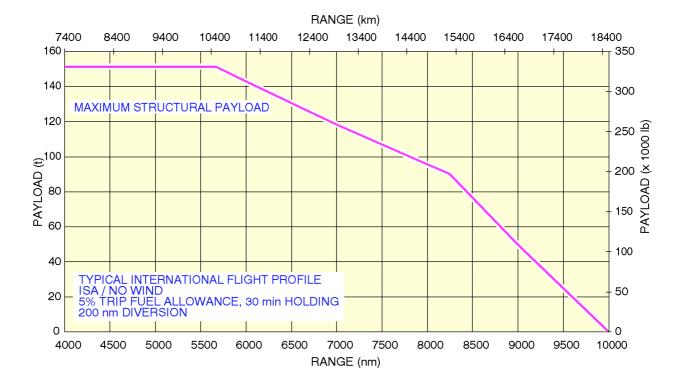


ZAC5 03 02 01 0 ABM0 01

Payload/Range ISA Conditions - GP 7270 Engines A380-861 Model

> 3-2-1 Page 2 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

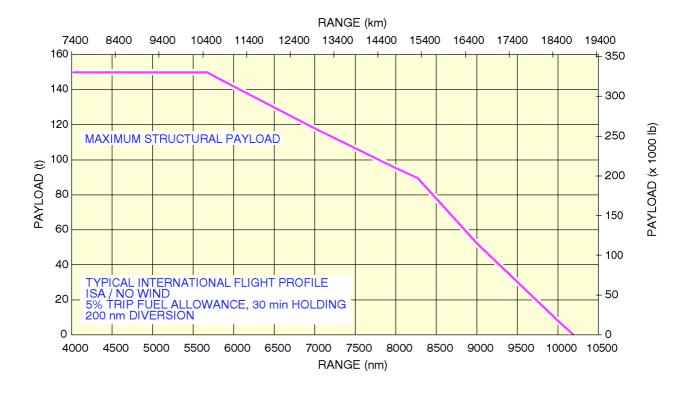


ZAC5 03 02 01 0 BAM0 01

Payload/Range ISA Conditions - TRENT 977 Engines A380-843F Model

> 3-2-1 Page 3 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



ZAC5 03 02 01 0 BBM0 01

Payload/Range ISA Conditions - GP 7277 Engines A380-863F Model

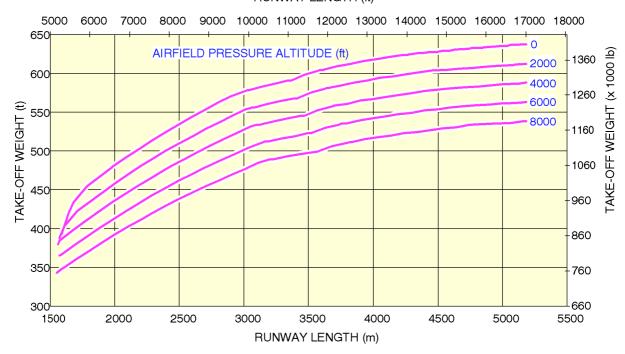
> 3-2-1 Page 4 JUL 01/02

## **AIRPLANE CHARACTERISTICS**

3-3 TAKE-OFF WEIGHT LIMITATION

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

#### RUNWAY LENGTH (ft)

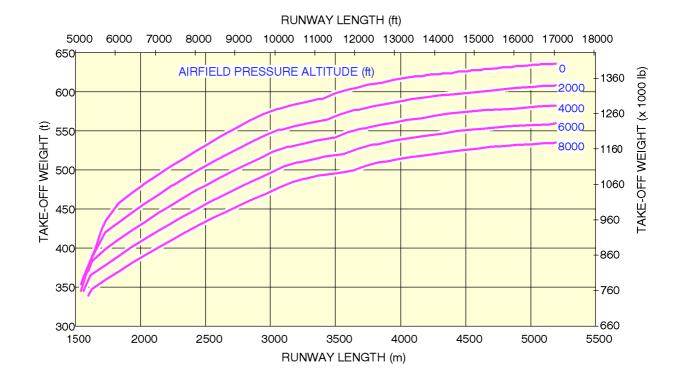


ZAC5 03 03 01 0 AAM0 01

Take-Off Weight Limitation
ISA Conditions - TRENT 970 Engines
A380-841 Model

3-3-1 Page 1 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

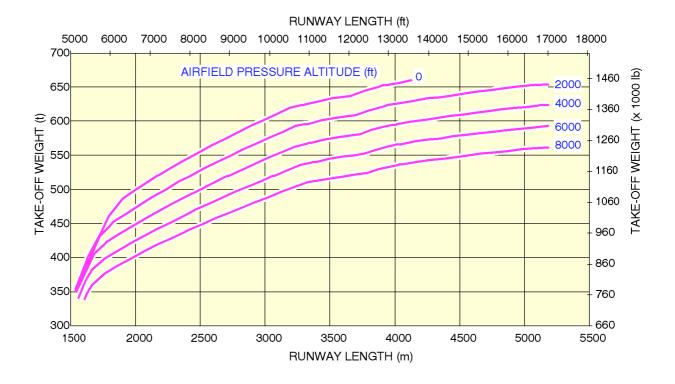


ZAC5 03 03 01 0 ABM0 01

Take-Off Weight Limitation ISA Conditions - GP 7270 Engines A380-861 Model

> 3-3-1 Page 2 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

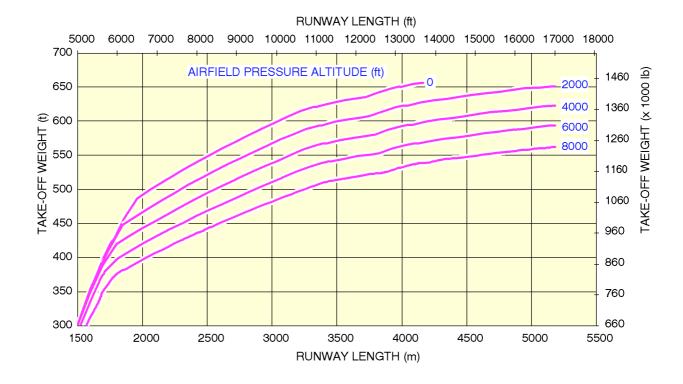


ZAC5 03 03 01 0 BAM0 01

Take-Off Weight Limitation
ISA Conditions - TRENT 977 Engines
A380-843F Model

3-3-1 Page 3 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



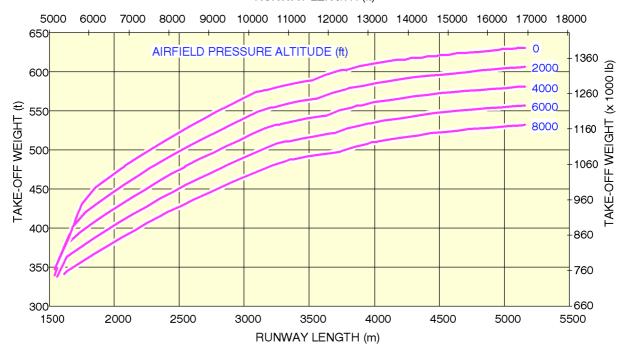
ZAC5 03 03 01 0 BBM0 01

Take-Off Weight Limitation ISA Conditions - GP 7277 Engines A380-863F Model

> 3-3-1 Page 4 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

#### **RUNWAY LENGTH (ft)**



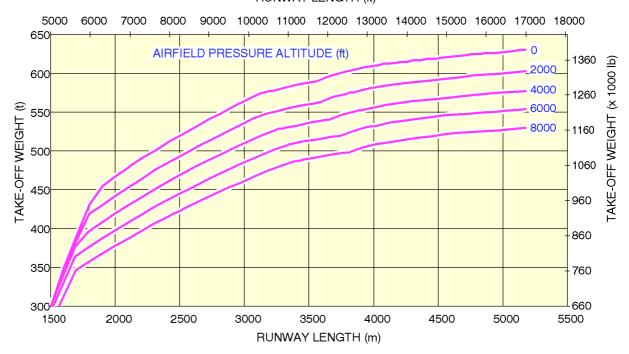
ZAC5 03 03 02 0 AAM0 01

Take-Off Weight Limitation ISA + 15 °C (59 °F) - TRENT 970 Engines A380-841 Model

> 3-3-2 Page 1 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

#### RUNWAY LENGTH (ft)

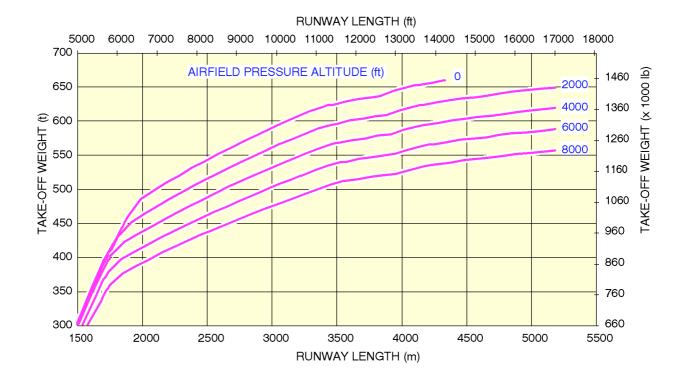


ZAC5 03 03 02 0 ABM0 01

Take-Off Weight Limitation ISA + 15 °C (59 °F) - GP 7270 Engines A380-861 Model

> 3-3-2 Page 2 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

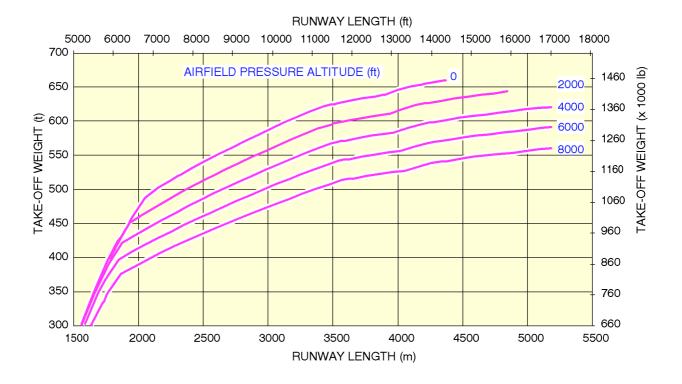


ZAC5 03 03 02 0 BAM0 01

Take-Off Weight Limitation ISA + 15 °C (59 °F) - TRENT 977 Engines A380-843F Model

> 3-3-2 Page 3 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



ZAC5 03 03 02 0 BBM0 01

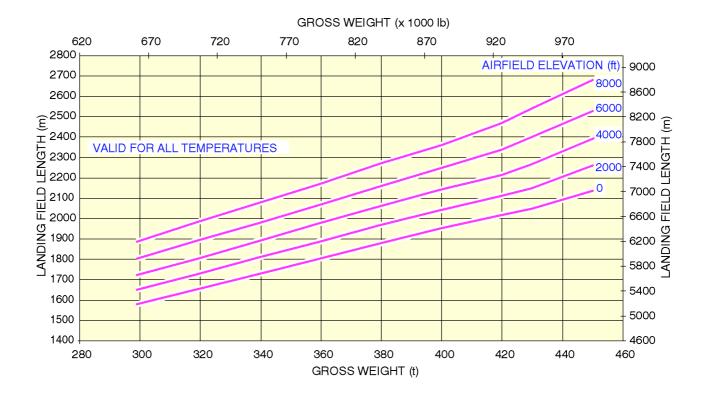
Take-Off Weight Limitation ISA + 15 °C (59 °F) - GP 7277 Engines A380-863F Model

> 3-3-2 Page 4 JUL 01/02

### **AIRPLANE CHARACTERISTICS**

3-4 LANDING FIELD LENGTH

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

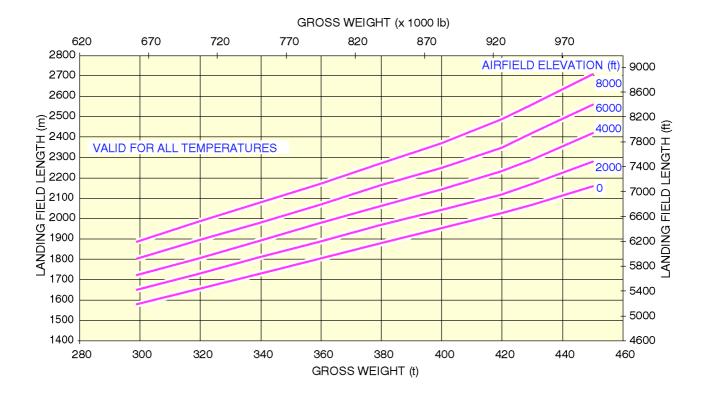


ZAC5 03 04 01 0 AAM0 01

Landing Field Length All Engines A380-800 Models

> 3-4-1 Page 1 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



ZAC5 03 04 01 0 BAM0 01

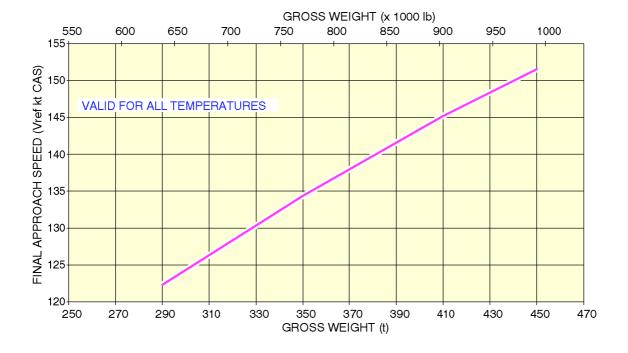
Landing Field Length All Engines A380-800F Models

> 3-4-1 Page 2 JUL 01/02

### **AIRPLANE CHARACTERISTICS**

3-5 FINAL APPROACH SPEED

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

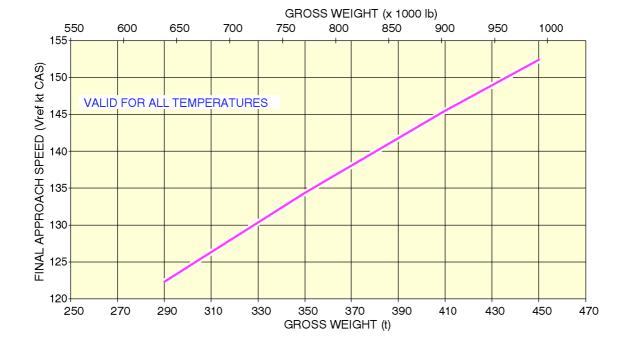


ZAC5 03 05 01 0 AAM0 01

Final Approach Speed All Engines A380-800 Models

> 3-5-1 Page 1 JUL 01/02

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS"
SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



ZAC5 03 05 01 0 BAM0 01

Final Approach Speed All Engines A380-800F Models

> 3-5-1 Page 2 JUL 01/02

#### 4-0 GROUND MANEUVERING

- 4-1 General Information
- 4-2 Turning Radii
- 4-3 Minimum Turning Radii
- 4-4 Visibility from Cockpit in Static Position (To Be Issued Later)
- 4-5 Runway and Taxiway Turn Paths
  - 4-5-1 135° Turn Runway to Taxiway
  - 4-5-2 90° Turn Runway to Taxiway
  - 4-5-3 180° Turn on a Runway
  - 4-5-4 90° Turn Taxiway to Taxiway
  - 4-5-5 135° Turn Taxiway to Taxiway
- 4-6 Runway Holding Bay (Apron)
- 4-7 Airplane Parking

#### **AIRPLANE CHARACTERISTICS**

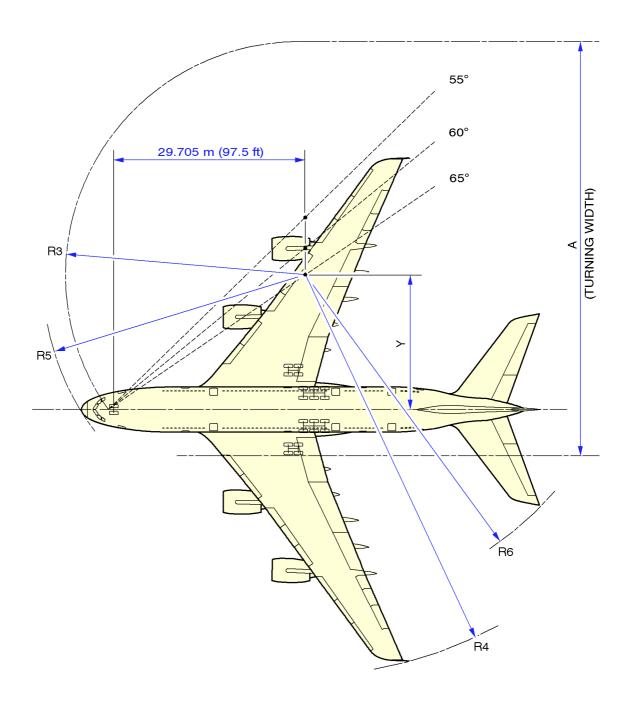
#### 4-1 GENERAL INFORMATION

This section provides airplane turning capability and maneuvering characteristics.

For ease of presentation, this data has been determined from the theoretical limits imposed by the geometry of the aircraft, and where noted, provides for a normal allowance for tire slippage. As such, it reflects the turning capability of the aircraft in favorable operating circumstances. This data should only be used as guidelines for the method of determination of such parameters and for the maneuvering characteristics of this aircraft type.

In the ground operating mode, varying airline practices may demand that more conservative turning procedures be adopted to avoid excessive tire wear and reduce possible maintenance problems. Airline operating techniques will vary in the level of performance, over a wide range of operating circumstances throughout the world. Variations from standard aircraft operating patterns may be necessary to satisfy physical constraints within the maneuvering area, such as adverse grades, limited area or high risk of jet blast damage. For these reasons, ground maneuvering requirements should be coordinated with the using airlines prior to layout planning.

### **AIRPLANE CHARACTERISTICS**



NOTE: SEE PAGE 2 FOR DIMENSIONS

ZAC8 04 02 00 0 AAM0 01

Turning Radii A380-800/800F Models

> 4-2 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**

Type	NLG	Effective		Υ		Α		R3		R4		R5		R6	
of	Angle	Steering													
Turn		Angle	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	
1	70°	69.8°	10.93	35.9	50.73	166.4	32.64	107.1	53.61	175.9	36.5	119.7	45.9	150.6	
2	65°	51.2 °	23.49	77.1	69.19	227.0	38.54	126.4	65.73	215.7	41.0	136.8	54.3	178.2	
2	60°	49.9°	24.76	81.2	71.33	234.0	39.4	129.3	66.94	219.6	42.49	139.4	55.16	181.0	
2	55°	47.2°	27.26	89.4	75.5	247.7	41.07	134.8	69.34	227.5	44.03	144.4	56.97	186.9	
2	50°	43.8°	30.83	101.2	81.59	267.7	43.6	143.0	72.8	238.8	46.35	152.1	59.65	195.7	
2	45°	40.0°	35.27	115.7	89.37	293.2	46.92	154.0	77.11	253.0	49.45	162.2	63.12	207.1	
2	40°	35.7°	41.22	135.2	100.04	328.2	51.65	169.4	82.9	272	53.89	176.8	67.93	222.9	
2	35°	31.3°	48.98	160.7	114.3	375.0	58.16	190.8	90.49	296.9	60.08	197.1	74.46	244.3	
2	30°	26.7°	59.5	195.2	134.09	439.9	67.42	221.2	100.82	330.8	69.0	226.4	83.64	274.4	
2	25°	22.0°	74.7	245.1	163.23	535.5	81.36	266.9	115.79	379.9	82.55	270.8	97.37	319.5	
2	20°	17.1°	98.89	324.4	210.34	690.1	104.28	342.1	139.73	458.4	105.07	344.7	119.95	393.5	

A380-800

Type	NLG	Effective	Υ		Α		R3		R4		R5		R6	
of	Angle	Steering												
Turn		Angle	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
1	70°	69.5°	11.08	36.3	50.97	167.2	32.73	107.4	53.75	176.3	36.54	119.9	45.98	150.9
2	65°	54.9°	20.65	67.7	64.79	212.6	36.98	121.0	62.96	206.6	40.27	132.1	52.22	171.3
2	60°	53.3°	22.02	72.3	67.02	219.9	37.82	124.1	64.27	210.9	41.05	134.7	53.14	174.3
2	55°	50.2°	24.67	80.9	71.31	233.9	39.47	129.5	66.81	219.5	42.54	139.6	55.0	180.5
2	50°	46.2°	28.35	93.0	77.45	254.1	41.93	137.6	70.37	230.9	44.79	147.0	57.72	189.4
2	45°	42°	32.93	108.1	85.34	280.0	45.23	148.4	74.82	245.5	47.85	157.0	61.23	200.9
2	40°	37.5°	38.78	127.2	95.69	314.0	49.75	163.2	80.5	264.1	52.07	170.8	65.89	216.2
2	35°	32.8°	46.25	151.7	109.31	358.6	55.9	183.4	87.8	288.1	57.9	189.9	72.1	236.5
2	30°	28°	56.21	184.4	127.92	419.7	64.55	211.8	97.57	320.1	66.19	217.2	80.7	264.8
2	25°	23.2°	70.31	230.7	154.83	508.0	77.35	253.8	111.45	365.7	78.61	257.9	93.33	306.2
2	20°	18.3°	92.12	302.2	197.15	646.8	97.87	321.1	133.01	436.4	98.72	323.9	113.53	372.5

A380-800F

### NOTE:

TYPE 1 TURNS USE:

ASYMMETRIC THRUST - BOTH ENGINES ON THE INSIDE OF THE TURN TO BE AT IDLE THRUST DIFFERENTIAL BRAKING - BRAKING APPLIED TO THE WING GEAR WHEELS ON THE INSIDE OF THE TURN.

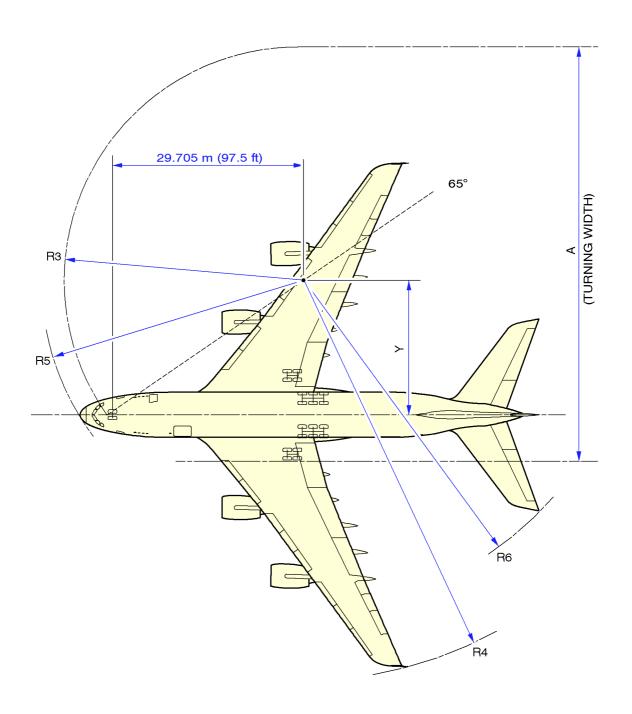
TYPE 2 TURNS USE: SYMMETRIC THRUST AND NO BRAKING.

ZAC8 04 02 00 0 ACM0 01

Turning Radii A300-800/800F Models

> 4-2 Page 2 SEP 30/03

### **AIRPLANE CHARACTERISTICS**



NOTE: SEE PAGE 2 FOR DIMENSIONS

ZAC8 04 03 00 0 AAM0 01

Minimum Turning Radii A380-800/800F Models

> 4-3 Page 1 JUL 01/02

NLG Angle	Effective Steering	Y		A		R3		R4		R5		R6	
	Angle	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
78°	73.7°	8.53	28.0	47.55	156.0	31.85	104.5	51.34	168.5	35.86	117.7	44.57	146.2

NOTE: TURN PERFORMED WITH ASYMMETRIC THRUST (IDLE THRUST ON BOTH ENGINES ON INSIDE OF TURN) AND DIFFERENTIAL BRAKING (BRAKING APPLIED TO ALL WING AND BODY GEAR WHEELS ON ONE SIDE OF AIRCRAFT)

NLG Angle	Effective Steering	Υ		А		R3		R4		R5		R6	
	Angle	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
65°	53.7°	21.34	70.0	65.75	215.7	37.24	122.2	63.66	208.8	40.57	133.1	52.77	173.1

NOTE: TURN PEFORMED WITH SYMMETRIC THRUST AND NO BRAKING

ZAC8 04 03 00 0 ACM0 00

Minimum Turning Radii A380-800/800F Models

### **AIRPLANE CHARACTERISTICS**

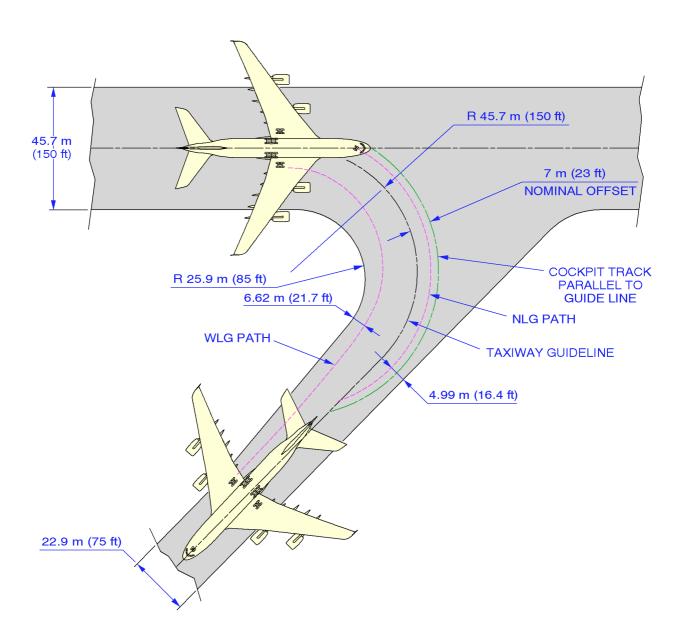
TO BE ISSUED LATER

Visibility from Cockpit in Static Position

### **AIRPLANE CHARACTERISTICS**

4-5 RUNWAY AND TAXIWAY TURN PATHS

### **AIRPLANE CHARACTERISTICS**



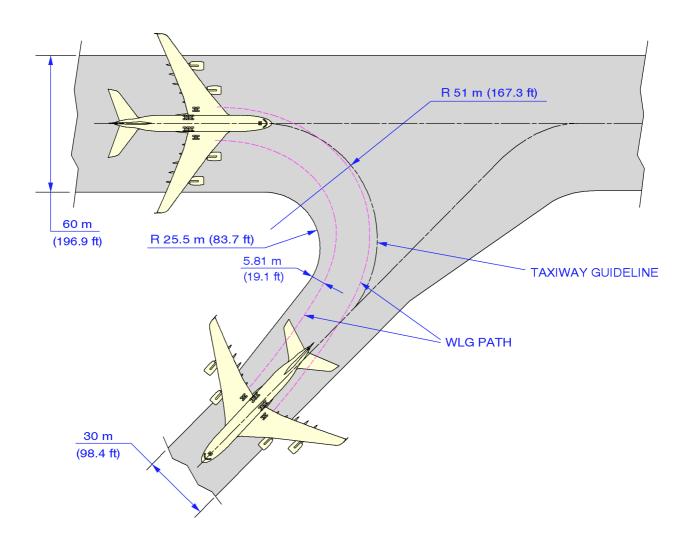
NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZAC8 04 05 01 0 AAM0 02

135° Turn - Runway to Taxiway A380-800/800F Models

4-5-1 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



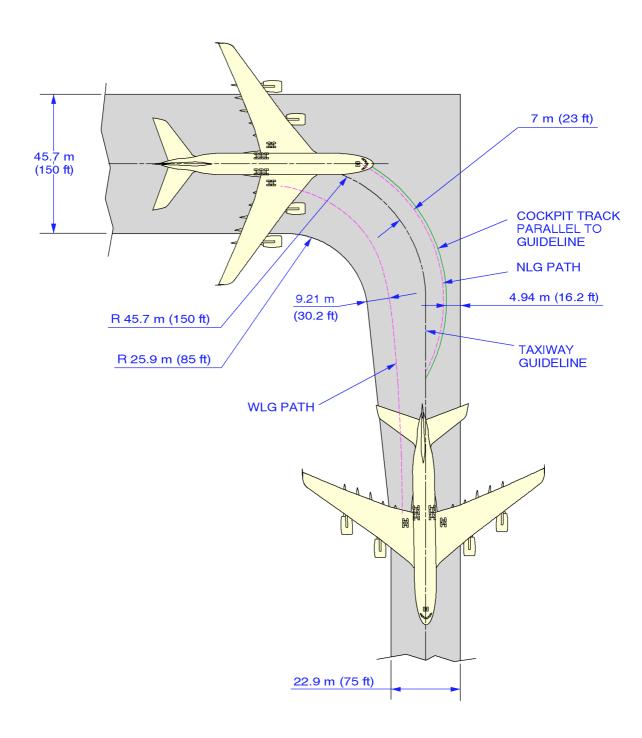
NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZAC8 04 05 01 0 ACM0 02

135° Turn - Runway to Taxiway A380-800/800F Models

4-5-1 Page 2 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



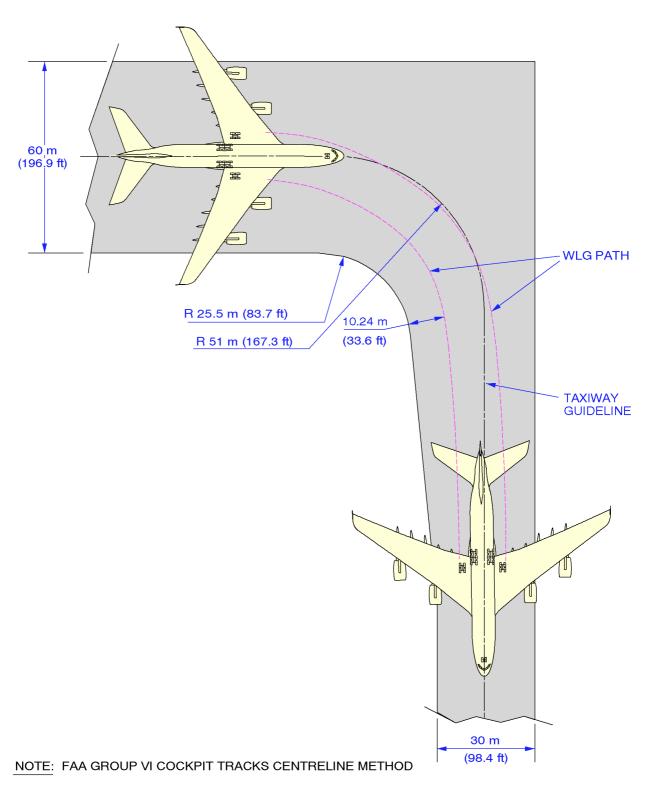
NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZAC8 04 05 02 0 AAM0 01

90° Turn - Runway to Taxiway A380-800/800F Models

> 4-5-2 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**

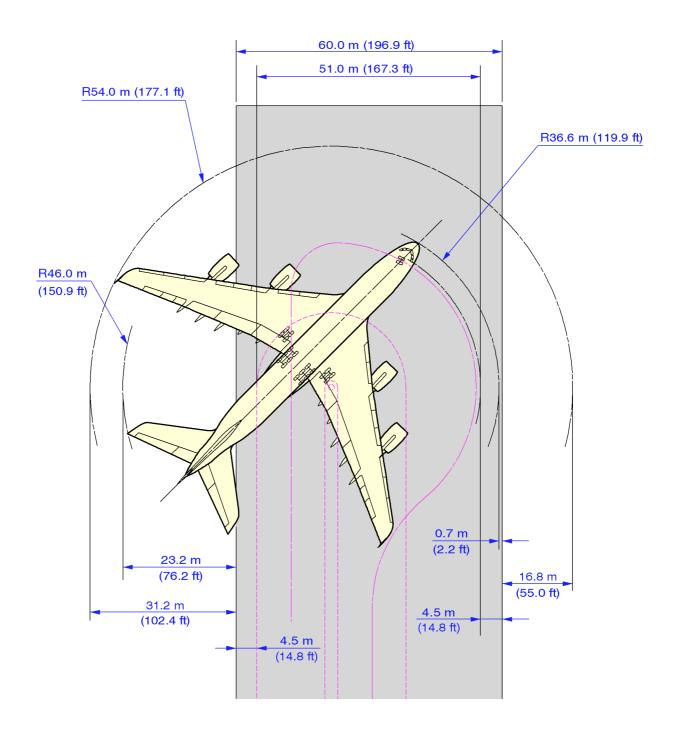


ZAC8 04 05 02 0 ACM0 01

90° Turn - Runway to Taxiway A380-800/800F Models

> 4-5-2 Page 2 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



 $\frac{\text{NOTE:}}{\text{ON A 60.0 m (196.9 ft)}}$  70° NOSE GEAR STEERING ASYMMETRIC THRUST AND BRAKING ON A 60.0 m (196.9 ft) WIDE RUNWAY.

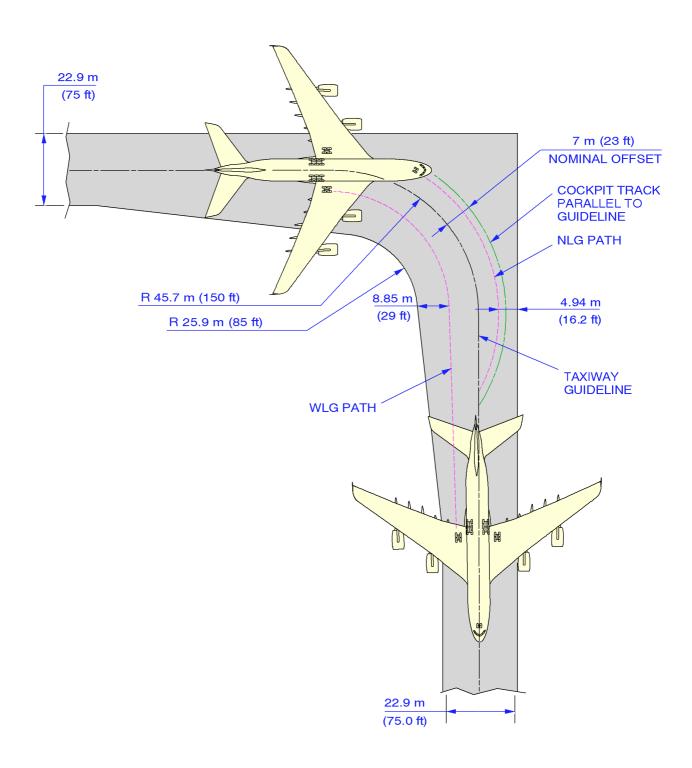
ZAC8 04 05 03 0 AAM0 02

180° Turn on a Runway A380-800/800F Models

4-5-3 Page 1 SEP 30/03

R R

### **AIRPLANE CHARACTERISTICS**



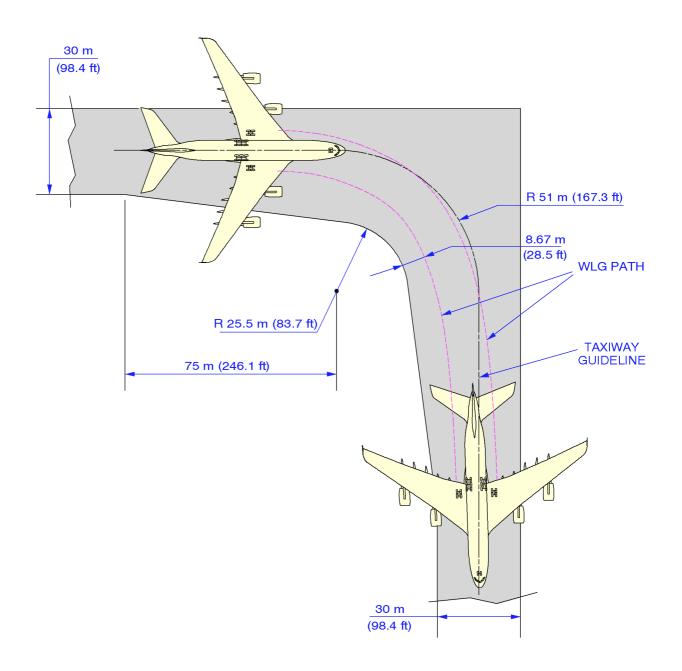
NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZAC8 04 05 04 0 AAM0 01

90° Turn - Taxiway to Taxiway A380-800/800F Models

4-5-4 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



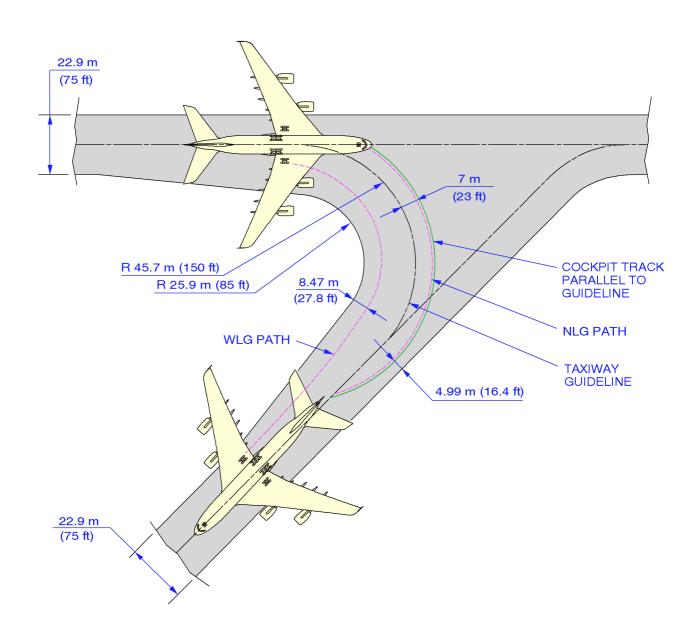
NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZAC8 04 05 04 0 ACM0 02

90° Turn - Taxiway to Taxiway A380-800/800F Models

4-5-4 Page 2 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



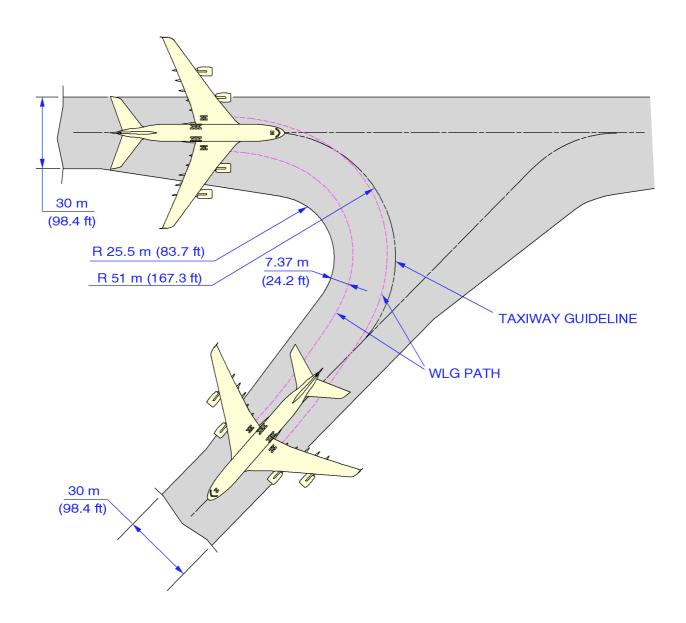
NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZAC8 04 05 05 0 AAM0 02

135° Turn - Taxiway to Taxiway A380-800/800F Models

4-5-5 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



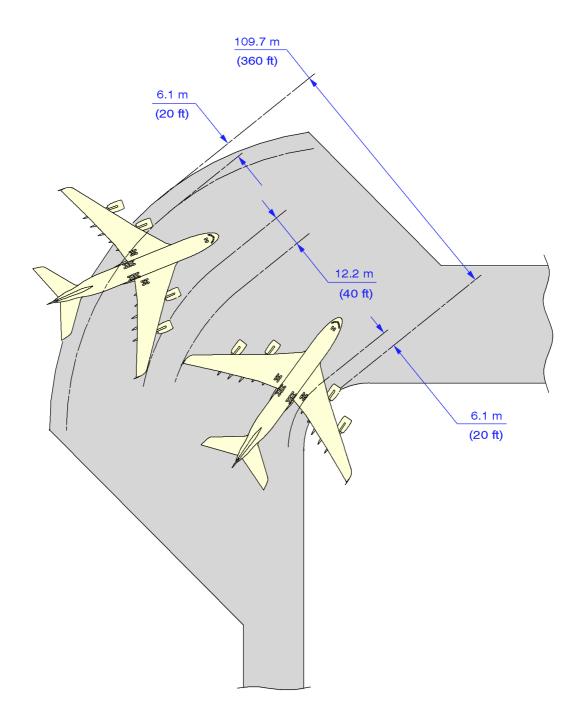
NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZAC8 04 05 05 0 ACM0 02

135° Turn - Taxiway to Taxiway A380-800/800F Models

4-5-5 Page 2 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



NOTE: COORDINATE WITH USING AIRLINE FOR SPECIFIC PLANNED OPERATING PROCEDURE

ZAC8 04 06 00 0 AAM0 01

Runway Holding Bay (Apron) A380-800/800F Models

> 4-6 Page 1 JUL 01/02

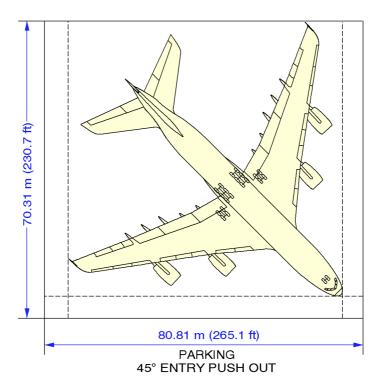
### **AIRPLANE CHARACTERISTICS**

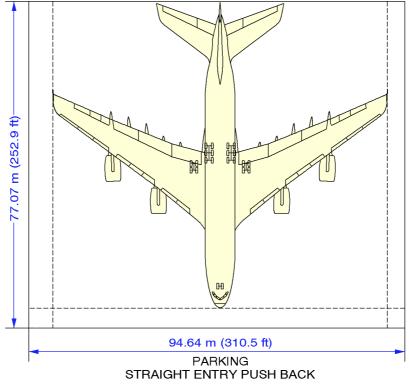
#### 4-7 AIRPLANE PARKING

The following figures and charts show the rectangular space required for parking against the terminal building:

- Steering Geometry : Page 2
- Minimum Parking Space Requirements : Page 3

### **AIRPLANE CHARACTERISTICS**



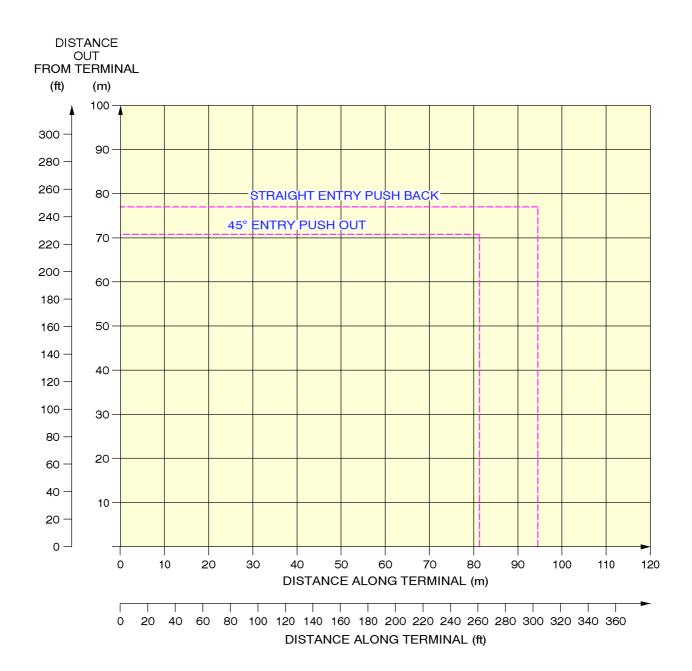


ZAC8 04 07 00 0 AAM0 01

Airplane Parking Steering Geometry A380-800/800F Models

> 4-7 Page 2 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



ZAC8 04 07 00 0 ACM0 01

Airplane Parking Minimum Parking Space Requirements A380-800/800F Models

> 4-7 Page 3 JUL 01/02

#### **AIRPLANE CHARACTERISTICS**

#### 5-0 TERMINAL SERVICING

- 5-1 Airplane Servicing Arrangements
  - 5-1-1 Typical Ramp Layout Two Bridges Standard Servicing Via Main and Upper Decks
  - 5-1-2 Typical Ramp Layout Two Bridges Servicing Via Main Deck
  - 5-1-3 Typical Ramp Layout Three Bridges Servicing Via Main and Upper Decks
  - 5-1-4 Typical Ramp Layout Cargo Aircraft Servicing
- 5-2 Terminal Operation Passenger Aircraft
  - 5-2-1 Typical Turn-Round Time Two Bridges Standard Servicing Via Main and Upper Decks
  - 5-2-2 Typical Turn-Round Time Two Bridges Servicing Via Main Deck
  - 5-2-3 Typical Turn-Round Time Three Bridges Servicing Via Main and Upper Decks
- 5-3 Terminal Operation Cargo Aircraft
  - 5-3-1 Typical Turn-Round Time
- 5-4 Ground Service Connections
  - 5-4-1 Ground Service Connections Layout
  - 5-4-2 Grounding Points (To Be Issued Later)
  - 5-4-3 Hydraulic System
  - 5-4-4 Electrical System
  - 5-4-5 Oxygen System (To Be Issued Later)
  - 5-4-6 Fuel System
  - 5-4-7 Pneumatic System
  - 5-4-8 Potable Water System
  - 5-4-9 Oil System (To Be Issued Later)
  - 5-4-10 Toilet System

- 5-5 Engine Starting Pneumatic Requirements (To Be Issued Later)
  - 5-5-1 Outside Air Temperature = -40 °C (-40 °F) (To Be Issued Later)
  - 5-5-2 Outside Air Temperature = 15 °C (59 °F) (To Be Issued Later)
  - 5-5-3 Outside Air Temperature = 50 °C (122 °F) (To Be Issued Later)
- R 5-6 Ground Pneumatic Power Requirements
- R 5-6-1 Heating
- R 5-6-2 Cooling
  - 5-7 Preconditioned Airflow Requirements

#### **AIRPLANE CHARACTERISTICS**

#### 5-1 AIRPLANE SERVICING ARRANGEMENTS

This section provides typical ramp layouts, showing the various GSE items in position during typical turn-round scenarios.

These ramp layouts show typical arrangements only. Each operator will have its own specific requirements/regulations for the positioning and operation on the ramp.

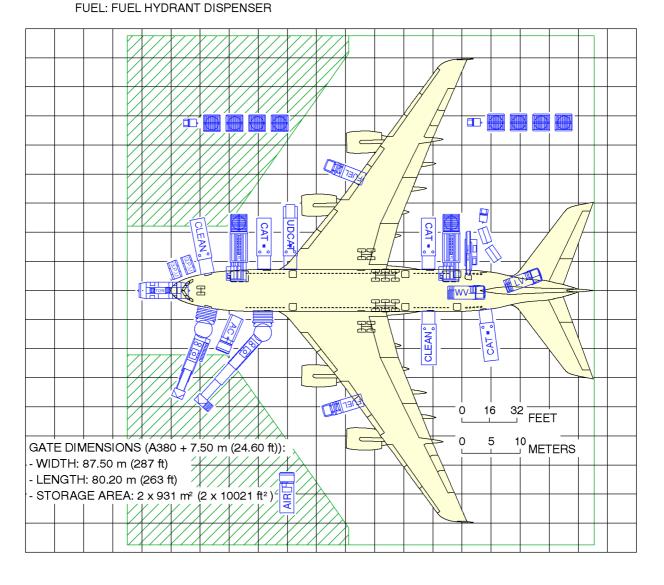
For each ramp layout, the associated typical turn-round time is given in a Chart in the section 5-2 for passenger aircraft and section 5-3 for cargo aircraft.

#### **AIRPLANE CHARACTERISTICS**

AC: AIR COND UNIT
AIR: AIR START UNIT
CAT: CATERING VEHICLE
CLEAN: CLEANING VEHICLE
CONVEYOR: CONVEYOR BELT

GPU: GROUND POWER UNIT LV: LAVATORY VEHICLE PL: PALLET/CONTAINER LOADER TOW: TOWING TRACTOR

WV: POTABLE WATER VEHICLE



RL28/B1A/800/STD ZAC5 05 01 01 0 AAM0 03

Typical Ramp Layout - Two Bridges Standard Servicing Via Main and Upper Decks A380-800 Models

> 5-1-1 Page 1 SEP 30/03

#### **AIRPLANE CHARACTERISTICS**

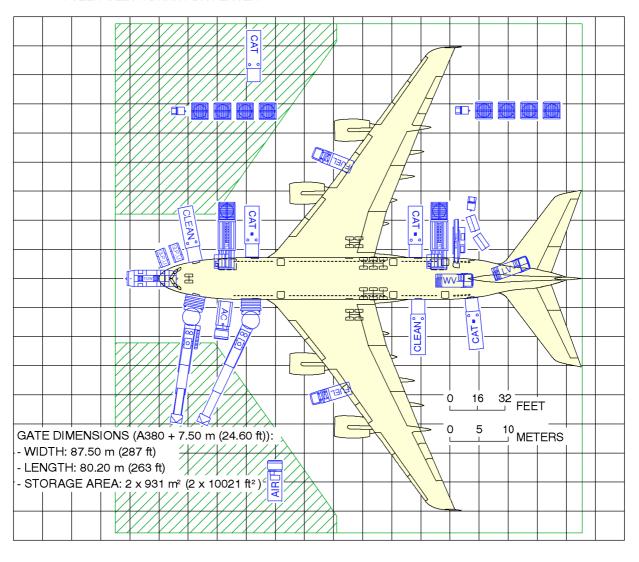
AC: AIR COND UNIT
AIR: AIR START UNIT
CAT: CATERING VEHICLE
CLEAN: CLEANING VEHICLE
CONVEYOR: CONVEYOR BELT

FUEL: FUEL HYDRANT DISPENSER

GPU: GROUND POWER UNIT LV: LAVATORY VEHICLE

PL: PALLET/CONTAINER LOADER

TOW: TOWING TRACTOR WV: POTABLE WATER VEHICLE



RL01/B1A/800/STD ZAC5 05 01 02 0 AAM0 02

Typical Ramp Layout - Two Bridges Servicing Via Main Deck A380-800 Models

> 5-1-2 Page 1 SEP 30/03

#### **AIRPLANE CHARACTERISTICS**

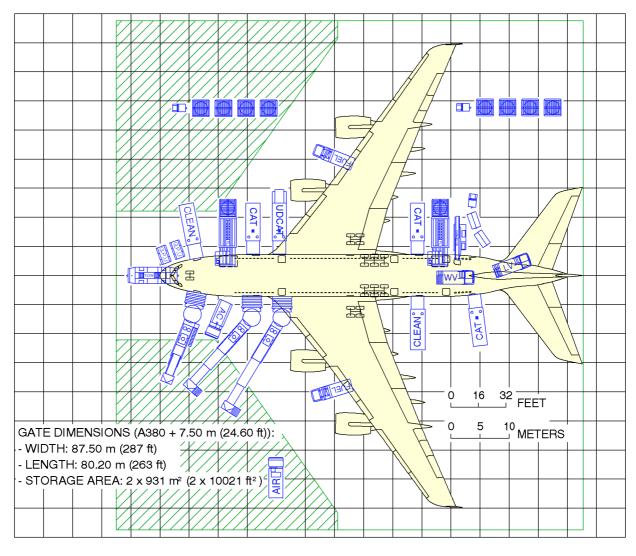
AC: AIR COND UNIT
AIR: AIR START UNIT
CAT: CATERING VEHICLE
CLEAN: CLEANING VEHICLE
CONVEYOR: CONVEYOR BELT

CONVEYOR: CONVEYOR BELT FUEL: FUEL HYDRANT DISPENSER

GPU: GROUND POWER UNIT LV: LAVATORY VEHICLE

PL: PALLET/CONTAINER LOADER

TOW: TOWING TRACTOR
WV: POTABLE WATER VEHICLE



RL02/B1A/800/STD ZAC5 05 01 03 0 AAM0 03

Typical Ramp Layout - Three Bridges Servicing Via Main and Upper Decks A380-800 Models

> 5-1-3 Page 1 SEP 30/03

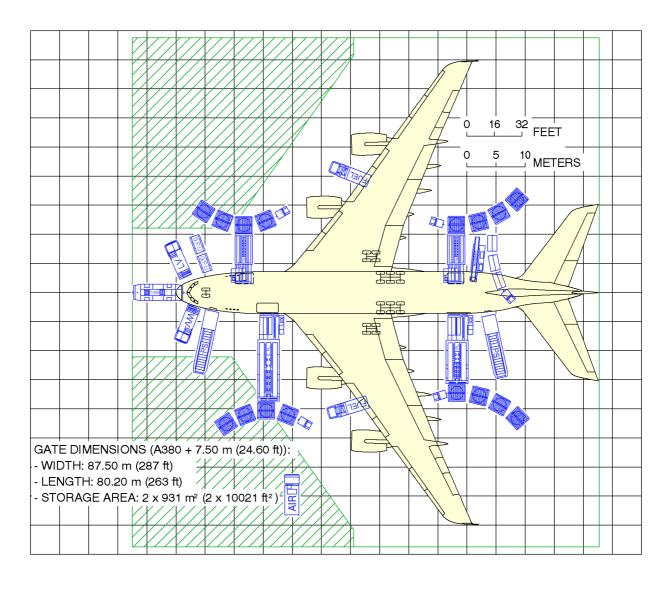
#### **AIRPLANE CHARACTERISTICS**

AC: AIR COND UNIT AIR: AIR START UNIT

CONVEYOR: CONVEYOR BELT FUEL: FUEL HYDRANT DISPENSER GPU: GROUND POWER UNIT LV: LAVATORY VEHICLE

PL: PALLET/CONTAINER LOADER

PS: PASSENGER STAIRS
TOW: TOWING TRACTOR
WV: POTABLE WATER VEHICLE



RL04/B1/800F/STD ZAC5 05 01 04 0 AAM0 03

Typical Ramp Layout A380-800F Models

5-1-4 Page 1 SEP 30/03

#### 5-2 TERMINAL OPERATION - PASSENGER AIRCRAFT

This section provides typical turn-round time charts showing the typical times for ramp activities during aircraft turn-round.

Actual times may vary due to each operator's specific practice and operating conditions.

For each turn-round time chart, the associated typical ramp layout is given in section 5-1.

### ASSUMED TURN-ROUND TIME PARAMETERS

```
PASSENGER BOARDING/DEBOARDING (PB/D) 
ightarrow 100% (555 pax) passenger exchange :
- Doors (type A - 42" wide) used : M1L and M2L (main deck) and U1R (upper deck).
- PB/D rate : boarding = 15 pax/min / deboarding = 25 pax/min
- Last Pax Seating Allowance (LPS) = + 4 min
- 60" stair flow rate : up-flow = 14 pax/min / down-flow = 18 pax/min
CARGO \rightarrow Full LD-3 exchange (22 + 16) LD-3 and bulk exchange of 2 000 kg
        (4 409 lb):
- LD-3 off-loading/loading times :
  off-loading = 1.4 min/LD-3 / loading = 1.7 min/LD-3
- Pallet loading times :
  off-loading = 2.5 min/pallet / loading = 2.9 min/pallet
bulk off-loading/loading times:
  off-loading = 9.2 min/t / loading = 10.5 min/t
REFUELLING \rightarrow Block fuel for Nominal Range through 4 nozzles:
- 255 000 liters (67 364 US gallons) at 40 psi (48 min)
- dispenser positioning or removal = 3 min (fuel truck change) / if any = 5 min
CLEANING → Full cleaning:
- Crew adapted to match catering time
CATERING → Full catering:
- average truck capacity = 30 Full Size Trolley Equivalent (FSTE)
- simultaneous catering and PB/D = not represented
inbound/outbound FSTE = mixed in the same truck
FSTE exchange time :
  - dedicated door-galley = 1.5 min/FSTE
  - cart circulation (1 seat zone) = + 0.5 min/FSTE
  - cart circulation (> 1 seat zone) = + 1.0 min/FSTE
  - via lift:

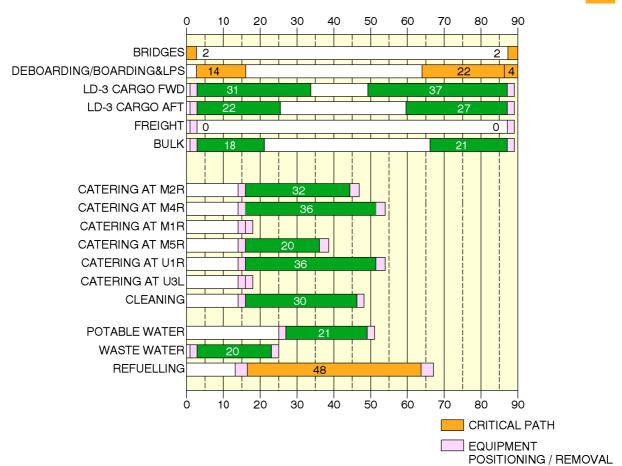
    dedicated door to single lift = 2.0 min/FSTE

GROUND HANDLING/SERVICING
- start of operations :
  - bridges = t0 = 0
  - others = t0 + 1 \min
vehicle positioning/removal = 2 min (fuel truck excluded)
- upper deck vehicle positioning/removal = 3 min
- clearance between GSE = 0.5 m (20 in)
• Ground Power Unit (GPU) = up to 4 \times 90 kVA
- air conditioning = two carts
- potable water (standard/option) = 1 875/2 500 liters (495/660 US gal) at
                                     87.5 l/min (23 US gal/min).
waste water = discharge and rinsing
- dollies per tractor = 4 to 6
```

## **AIRPLANE CHARACTERISTICS**

#### TURN-ROUND TIME IN MINUTES

90'



DB1A

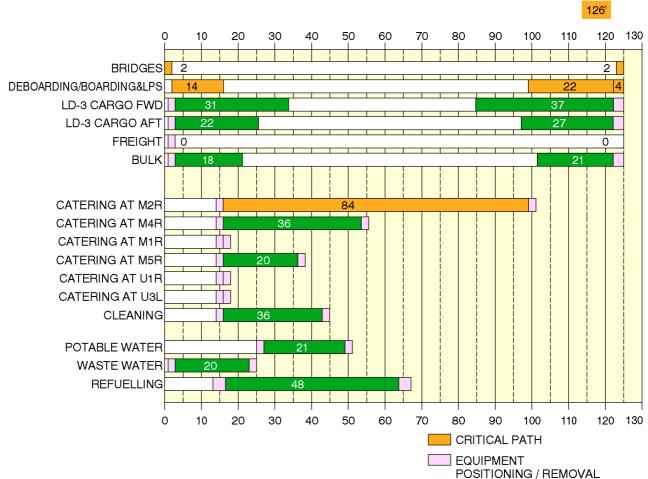
ZAC5 05 02 01 0 AAM0 02

Typical Turn-Round Time - Two Bridges Standard Servicing Via Main and Upper Decks A380-800 Models

> 5-2-1 Page 1 SEP 30/03

### **AIRPLANE CHARACTERISTICS**

## TURN-ROUND TIME IN MINUTES



NOTE: IF REQUIRED, THE A380 CABIN LAYOUT CAN BE OPTIMIZED TO GIVE SHORTER TURN-ROUND TIME WITH ONLY MAIN DECK ACCESS

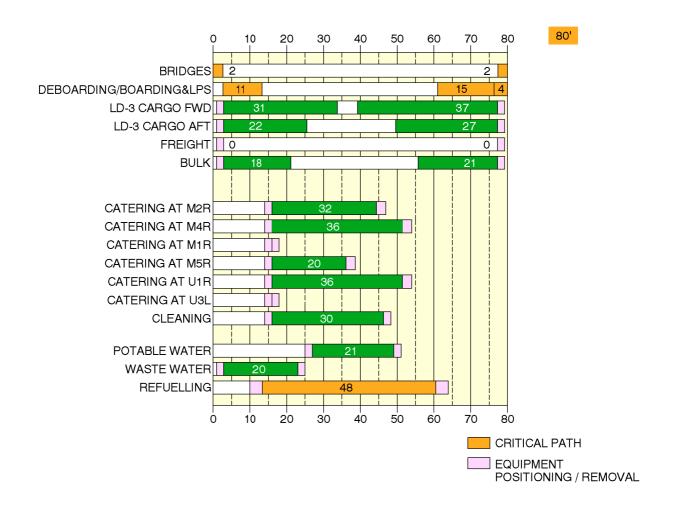
DB1A ZAC5 05 02 02 0 AAM0 02

Typical Turn-Round Time - Two Bridges Servicing Via Main Deck A380-800 Models

> 5-2-2 Page 1 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

### TURN-ROUND TIME IN MINUTES



DB1A ZAC5 05 02 03 0 AAM0 01

Typical Turn-Round Time - Three Bridges Servicing Via Main and Upper Decks A380-800 Models

> 5-2-3 Page 1 SEP 30/03

5-3 TERMINAL OPERATION - CARGO AIRCRAFT

## **AIRPLANE CHARACTERISTICS**

The A380-800F can achieve turn-round times of 120  $\pm$  20 minutes depending on ULD layouts on the three decks.

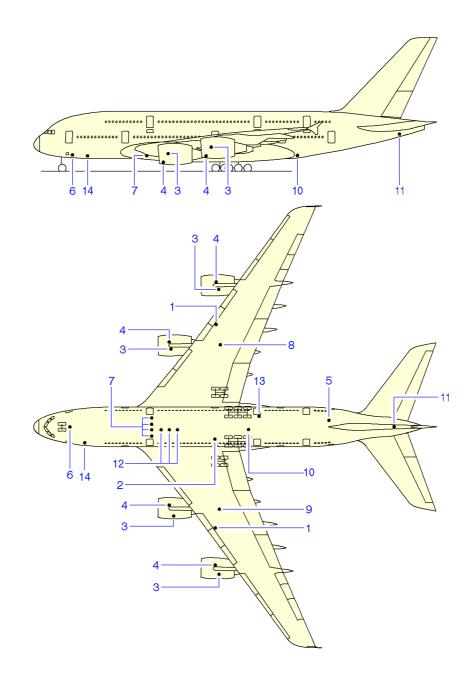
 ${{\hbox{NOTE}}\over {}}$ : These values are similar to other wide-body freighter aircraft in similar operating conditions.

Typical Turn-Round Time A380-800F Models

## **AIRPLANE CHARACTERISTICS**

5-4 GROUND SERVICE CONNECTIONS

### **AIRPLANE CHARACTERISTICS**



- 1 PRESSURE REFUEL CONNECTORS
- 2 HYDRAULIC RESERVOIR SERVICING PANEL (RESERVOIR FILLING AND RESERVOIR PRESSURISATION)
- 3 ÈNGINE OIL FILLING

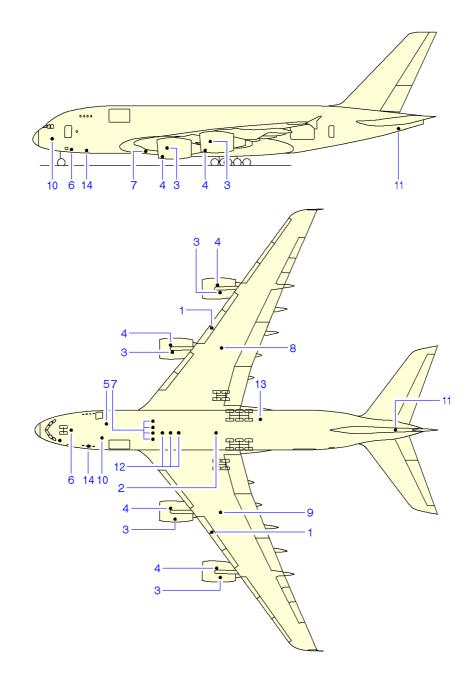
- 4 VF GENERATOR OIL FILLING 5 TOILET AND WASTE SERVICE PANEL 6 GROUND ELECTRICAL POWER 7 LOW PRESSURE PRECONDITIONED AIR
- 8 YELLOW HYDRAULIC GROUND CONNECTOR 9 GREEN HYDRAULIC GROUND CONNECTOR
- 10 POTABLE WATER SERVICE PANEL
- 11 APU OIL FILLING
- 12 HIGH PRESSURE AIR ENGINE START 13 REFUEL/DEFUEL CONTROL PANEL
- 14 OXYGEN SYSTEM

DB<sub>1</sub>A ZAC5 05 04 01 0 AAM0 02

> **Ground Service Connections** Ground Service Connections Layout A380-800 Models

> > 5-4-1 Page 1 SEP 30/03

## **AIRPLANE CHARACTERISTICS**



- 1 PRESSURE REFUEL CONNECTORS 2 HYDRAULIC RESERVOIR SERVICING PANEL (RESERVOIR FILLING AND RESERVOIR PRESSURISATION)
- 3 ÈNGINE OIL FILLING

- 4 VF GENERATOR OIL FILLING 5 TOILET AND WASTE SERVICE PANEL 6 GROUND ELECTRICAL POWER 7 LOW PRESSURE PRECONDITIONED AIR
- 8 YELLOW HYDRAULIC GROUND CONNECTOR 9 GREEN HYDRAULIC GROUND CONNECTOR
- 10 POTABLE WATER SERVICE PANEL
- 11 APU OIL FILLING
- 12 HIGH PRESSURE AIR ENGINE START 13 REFUEL/DEFUEL CONTROL PANEL
- 14 OXYGEN SYSTEM

DB1A ZAC5 05 04 01 0 ABM0 03

> **Ground Service Connections** Ground Service Connections Layout A380-800F Models

> > 5-4-1 Page 2 SEP 30/03

### HYDRAULIC SYSTEM

## A. Doors description:

- Green hydraulic ground connectors : (Access door 198CB)
- Yellow hydraulic ground connector: (Access door 198JB)
- Hydraulic Reservoir Servicing Panel: (Access door 197CB)

DISTANCE : Meters (ft)			
AFT OF			MEAN HEIGHT FROM
NOSE R SIDE L		L SIDE	GROUND
34.67		14.90	5.08
(113.7)		(48.88)	(16.66)
34.67	14.90		5.08
(113.7)	(48.88)		(16.66)
30.17		2.34	1.71
(98.98)		(7.67)	(5.61)

- (2) Reservoir filling
   one connector AE96993E, 1/4 in.

Ground Service Connections Hydraulic System A380-800 Models

### **ELECTRICAL SYSTEM**

A. Ground Service Panel for External Electrical Power Receptacles:

_	Right	side	access	door	:	134AR
---	-------	------	--------	------	---	-------

- Left side access door : 134AL

DISTANCE : Meters (ft)			
AFT OF	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM
NOSE	R SIDE L SIDE		GROUND
5.99 (19.65)	0.45 (1.47)		2.59 (8.49)
5.99 (19.65)		0.45 (1.47)	2.59 (8.49)

- (1) External Power Receptacles:
  - four standard ISO R461 receptacles 90 KVA each.
- (2) Power supply:
  - three phase, 115V, 360-800 Hz.
- (3) Electrical connectors for servicing:

AC outlets: HUBBEL 5258 DC outlets: HUBBEL 7472

Vacuum cleaner outlets: HUBBEL 5258

### FUEL SYSTEM

- A. Ground Service Panel for :
  - Refuel/Defuel control panel: (Access door 199KB)

DISTANCE : Meters (ft)				
AFT OF	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM	
"""		L SIDE	GROUND	
45.74 (150.06)	2.59 (8.49)		2.98 (9.77)	

- B. Refuel/Defuel connectors
  - refuel/defuel coupling, left (Access door 522GB)
  - refuel/defuel coupling, right (Access door 622GB)

31.89 (104.62)		17.97 (58.95)	5.77 (18.93)
31.89 (104.62)	17.97 (58.95)		5.77 (18.93)

- (1) Refuel/Defuel couplings :
  - standard ISO R45, 2.5 in., two per wing
- (2) Refuel pressure:
  - max. pressure : 3.45 bar (50 psi)

### PNEUMATIC SYSTEM

- A. Low Pressure Air Connectors for Preconditionned Air:
  - access doors 191GB, 191JB
  - access doors 192HB, 192KB

DISTANCE : Meters (ft)			
		IRPLANE RLINE	MEAN HEIGHT FROM
NOSE	R SIDE L SIDE		GROUND
22.13 (72.6)		1.21 (3.97)	2.08 (6.82)
22.13 (72.6)	1.21 (3.97)		2.08 (6.82)

- (1) Connectors :
  - four standard MS33562 (ISO1034), 8 in.
- B. High Pressure Air Connectors for Cabin Heating, Cooling and Engine Starting:
  - access doors 193BB

DISTANCE : Meters (ft)			
1 1 1 1 1 1 1 1		IRPLANE RLINE	MEAN HEIGHT FROM
NOSE	R SIDE L SIDE		GROUND
25.37 (83.23)		3.4 (11.15)	1.82 (5.97)

- (1) Connectors:
  - three standard MS33740 (IS02026), 3 in.

Ground Service Connections Pneumatic System A380-800 Models

### POTABLE WATER SYSTEM

A. Potable Water Ground Service Panel:

DISTANCE : Meters (ft)			
AFT OF	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM
NOSL	R SIDE		GROUND
43.67 (143.27)		0.37 (1.21)	2.13 (6.99)

- access door 199NB
- (1) Connectors:
  - 3/4 in.
- (2) Capacity:
  - standard configuration six tanks : 1700 l (449 USgal)
  - optional : 2266 l (598 USgal)
- (3) Filling pressure:
  - 50 lbf/in<sup>2</sup> (345 kPa)

Ground Service Connections Potable Water System A380-800 Models

### VACUUM TOILET SYSTEM

A. Waste Water Ground Service Panel:

FROM AIRPLANE MEAN CENTERLINE AFT OF **HEIGHT** NOSE FROM **GROUND** R SIDE L SIDE 53.31 0.26 3.40 (174.90)(0.85)(11.15)

DISTANCE: Meters (ft)

- access door TBC

(1) Connectors :

- flushing and filling: 1 in.

- draining : 4 in.

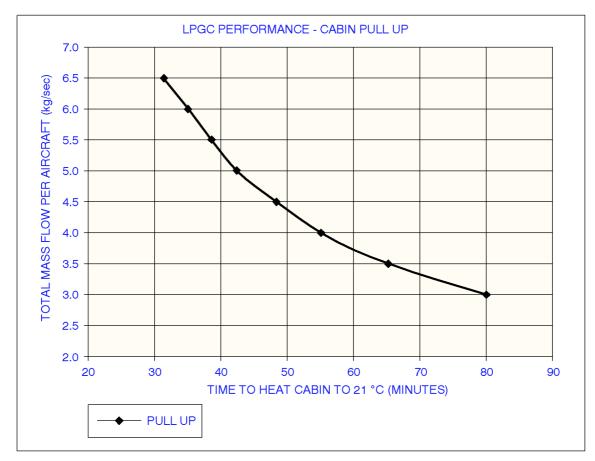
(2) Capacity: TBC

(3) Operating pressure : TBC

(4) Flow rate: TBC

## **AIRPLANE CHARACTERISTICS**

5-6 GROUND PNEUMATIC POWER REQUIREMENTS

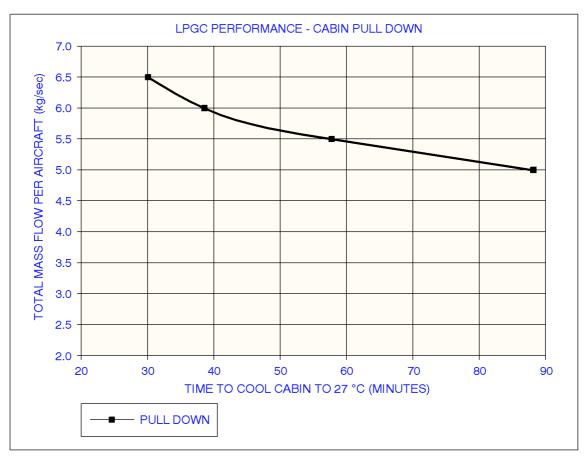


PULL UP: INITIAL CABIN TEMPERATURE AT -23 °C, HEAT UP TO 21 °C ON GROUND, TEMPERATURE AT THE GROUND CONNECTION: 70 °C

TOTAL LPGC AIR FLOW	TIME TO HEAT CABIN TO 21 °C (69.8 °C) ON GROUND PULL UP
kg/sec	min
3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5	80 65 55 48 42.5 38 35 31.6

ZAC6 05 06 01 0 AAM0 00

Ground Pneumatic Power Requirements Heating



SAME BOUNDARY CONDITIONS AS BEFORE (IN ADDITION BLENDS DOWN FOR THE PULL DOWN CASE), HP AND LP FANS ON PULL DOWN:INITIAL CABIN TEMPERATURE AT 38 °C, COOL DOWN TO 27 °C ON GROUND TEMPERATURE AT THE GROUND CONNECTION: 1.5 °C

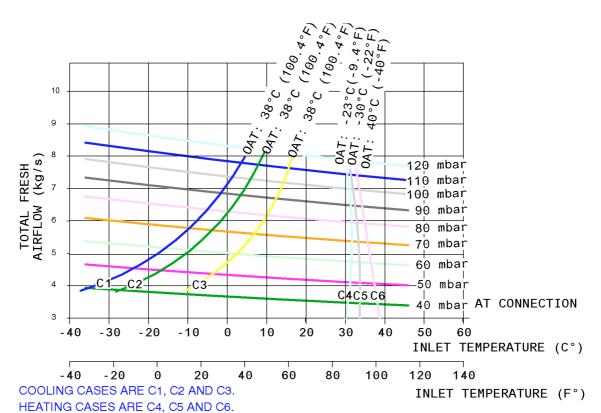
TOTAL LPGC AIR FLOW	TIME TO COOL CABIN TO 27 °C (80.6 °C) ON GROUND PULL DOWN
kg/sec	min
3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5	- - - - 87 58 38 30

ZAC6 05 06 02 0 AAM0 00

Ground Pneumatic Power Requirements Cooling

## **AIRPLANE CHARACTERISTICS**

5-7 PRECONDITIONNED AIRFLOW REQUIREMENTS



C1 CURVE ASSUMES:

- LPGC AIR AT 45% RH
- AIRCRAFT CONFIGURED IN STANDARD ZONES
- CABIN TEMPERATURE: 27°C (80.6°F)
- MAX. PASSENGER LOAD, 19 ATTENDANTS, 5 CREW MEMBERS
- HP RECIRCULATION: ON (HP FILTER CONDITION: NEW CARTRIDGE)
- SOLAR RADIATION IS INCLUDED IN CALCULATIONS
- IFE: ON
- VIDEO OPERATION 75%, PC OPERATION 13%
- BOTH AVIONIC VALVES OFF
- CARGO VALVES ON ( CARGO FLOW SETTING NORMAL)

#### C2 CURVE ASSUMES:

- SAME CONDITIONS AS C1 BUT WITH IFE OFF VIDEO OPERATION 0% PC OPERATION 0% C3 CURVE ASSUMES:
- SAME CONDITIONS AS C1 BUT WITHOUT PASSENGERS C4, C5 AND C6 CURVES ASSUME:
   LPGC AIR AT 45% RH

  - AIRCRAFT CONFIGURED IN STANDARD ZONES
  - CABIN TEMPERATURE: 21°C (69.8°F)
  - NO PASSENGER, 0 ATTENDANT, 0 CREW MEMBER
  - HP RECIRCULATION: ON (HP FILTER CONDITION: NEW CARTRIDGE)
  - SOLAR RADIATION IS NOT INCLUDED
  - IFE: OFF
  - VIDEO OPERATION 0%, PC OPERATION 0%
  - CABIN LIGHTING OFF, GALLEY POWER OFF
  - BOTH AVIONIC VALVES OFF
  - CARGO VALVES OFF ( CARGO FLOW SETTING NORMAL )

NOTE: IFE = IN-FLIGHT ENTERTAINMENT SYSTEM. OAT = OUTSIDE AIR TEMPERATURE.

ZAC5 05 07 00 0 AAM0 00

### **AIRPLANE CHARACTERISTICS**

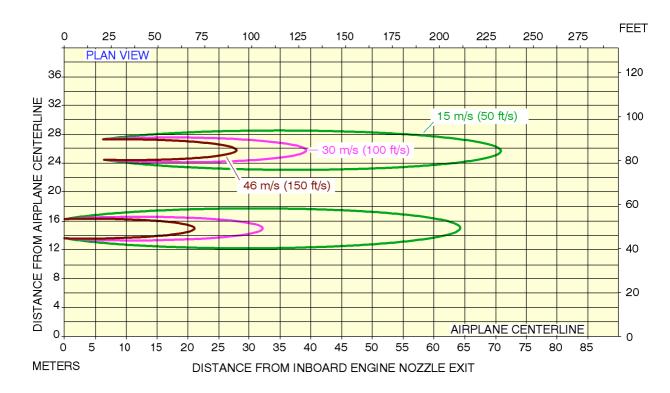
#### 6-0 OPERATING CONDITIONS

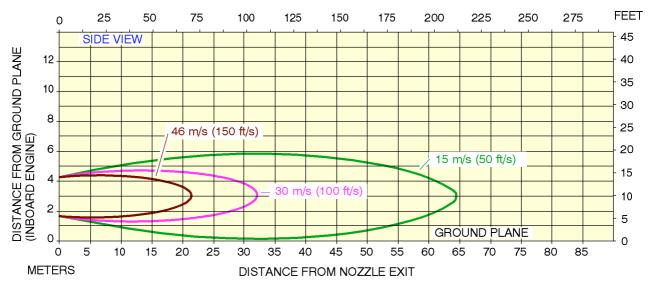
- 6-1 Engine Exhaust Velocities and Temperatures
  - 6-1-1 Engine Exhaust Velocities Ground Idle Power
  - 6-1-2 Engine Exhaust Temperatures Ground Idle Power
  - 6-1-3 Engine Exhaust Velocities Breakaway Power
  - 6-1-4 Engine Exhaust Temperatures Breakaway Power
  - 6-1-5 Engine Exhaust Velocities Max. Take-Off Power
  - 6-1-6 Engine Exhaust Temperatures Max. Take-Off Power
- 6-2 Airport and Community Noise Data (To Be Issued Later)
  - 6-2-1 Airport and Community Noise Data (To Be Issued Later)
- 6-3 Danger Areas of the Engines (To Be Issued Later)
  - 6-3-1 Ground Idle Power (To Be Issued Later)
  - 6-3-2 Breakaway Power (To Be Issued Later)
  - 6-3-3 Max. Take-Off Power (To Be Issued Later)
- 6-4 APU Exhaust Velocities (To Be Issued Later) and Temperatures
  - 6-4-1 APU Exhaust Velocities (To Be Issued Later) and Temperatures

## **AIRPLANE CHARACTERISTICS**

6-1 JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

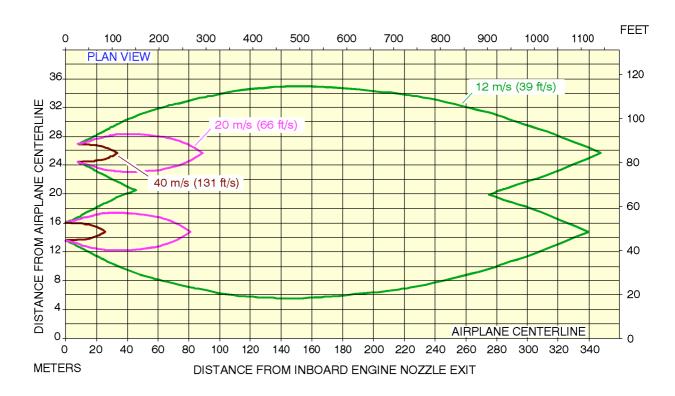
- SEA LEVEL STATIC CONDITIONS
- ISA + 15° C (59° F)
- NO WIND

ZAC5 06 01 01 0 BAM0 01

Engine Exhaust Velocities Ground Idle Power - TRENT 970/977 Engines A380-841/843F Models

> 6-1-1 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

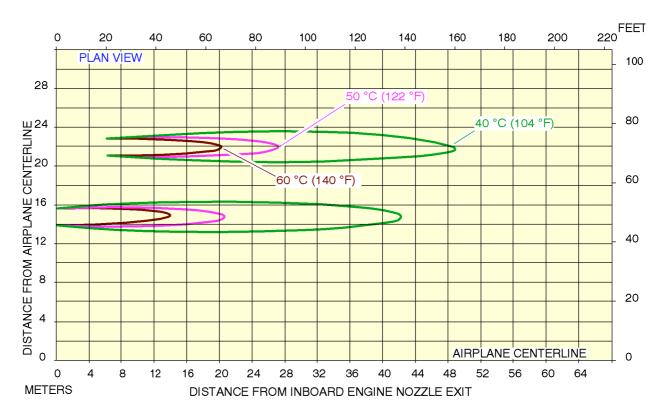
- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

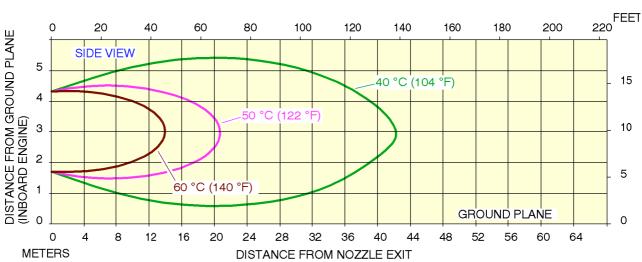
ZAC5 06 01 01 0 AAM0 01

Engine Exhaust Velocities Ground Idle Power - GP 7270/7277 Engines A380-861/863F Models

> 6-1-1 Page 2 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

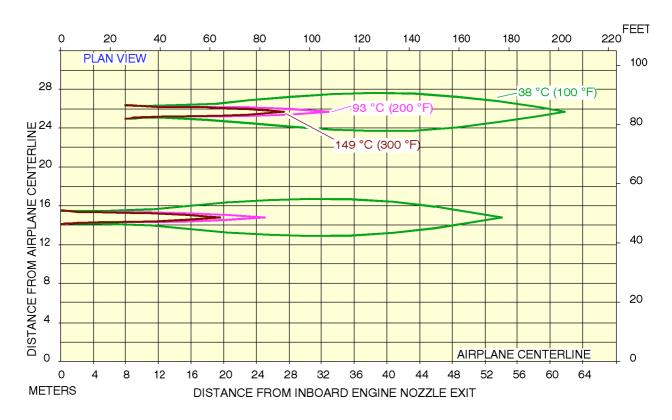
- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F)
- NO WIND

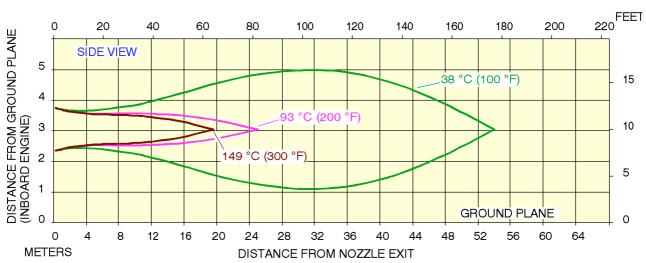
ZAC5 06 01 02 0 BAM0 01

Engine Exhaust Temperatures Ground Idle Power - TRENT 970/977 Engines A380-841/843F Models

> 6-1-2 Page 1 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

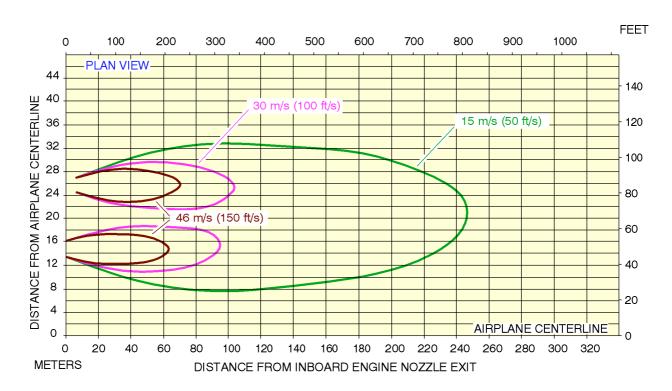
- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

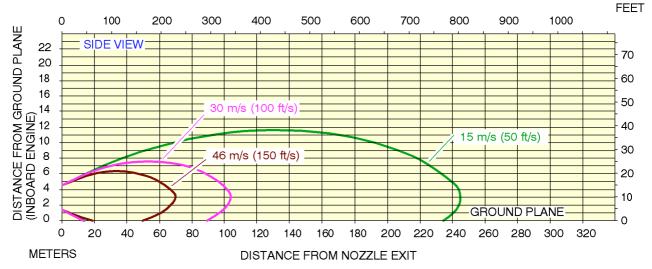
ZAC5 06 01 02 0 AAM0 00

Engine Exhaust Temperatures Ground Idle Power - GP 7270/7277 Engines A380-861/863F Models

> 6-1-2 Page 2 JUL 01/02

### **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

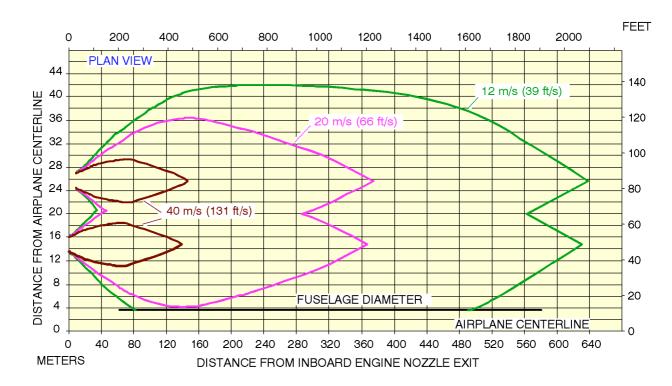
- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F) CONDITIONS
- NO WIND

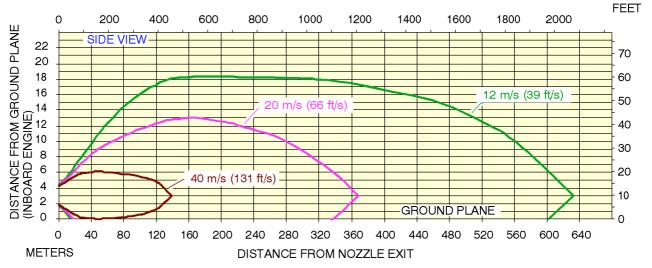
ZAC5 06 01 03 0 BAM0 01

Engine Exhaust Velocities Breakaway Power - TRENT 970 Engines A380-841 Model

> 6-1-3 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

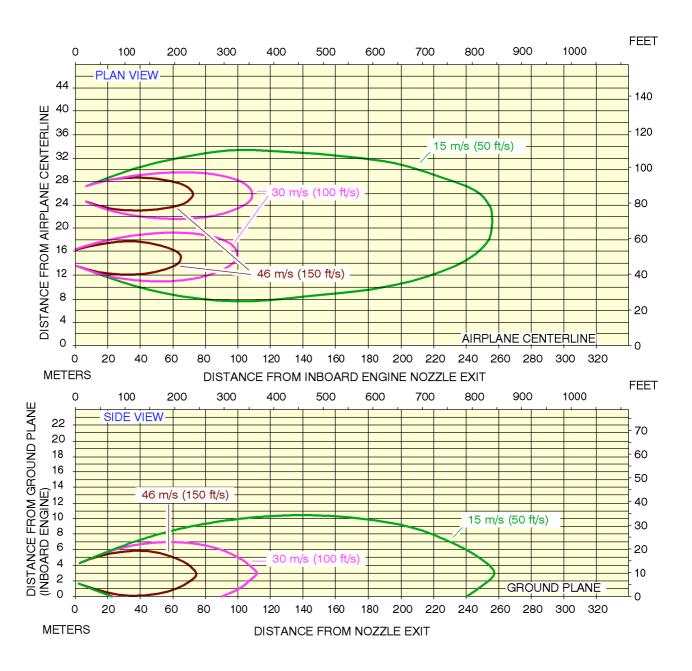
- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZAC5 06 01 03 0 AAM0 01

Engine Exhaust Velocities Breakaway Power - GP 7270 Engines A380-861 Model

> 6-1-3 Page 2 JUL 01/02

## **AIRPLANE CHARACTERISTICS**



NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

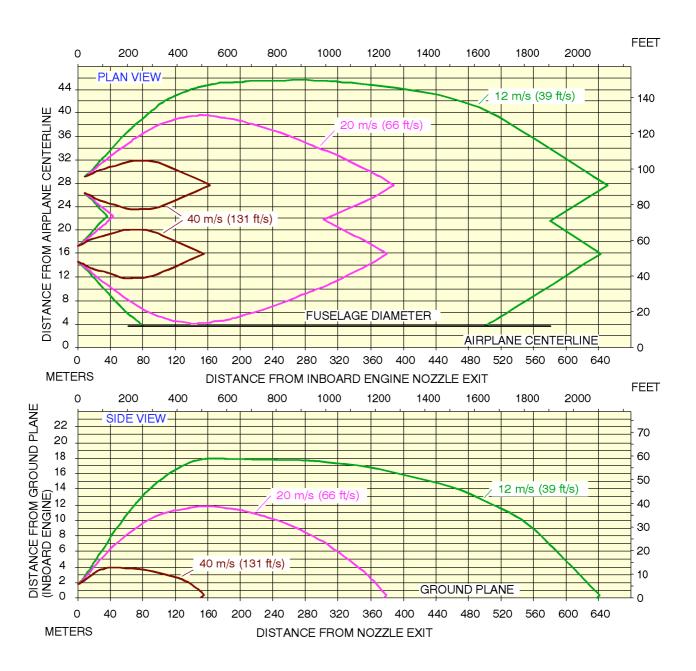
- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F) CONDITIONS
- NO WIND

ZAC5 06 01 03 0 BBM0 01

Engine Exhaust Velocities Breakaway Power - TRENT 977 Engines A380-843F Model

> 6-1-3 Page 3 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



 $\underline{\mathsf{NOTE}}.$  THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

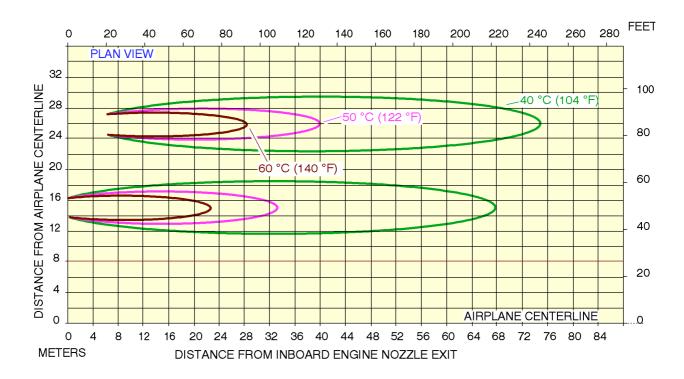
- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

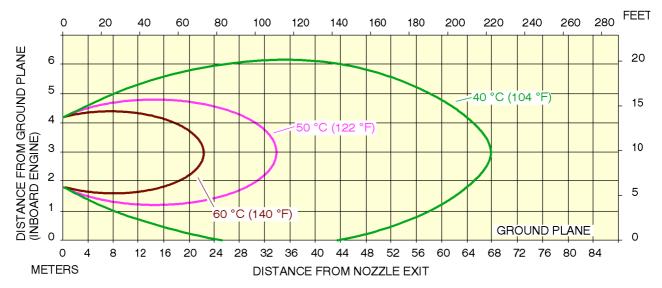
ZAC5 06 01 03 0 ABM0 01

Engine Exhaust Velocities Breakaway Power - GP 7277 Engines A380-863F Model

> 6-1-3 Page 4 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





 $\underline{\mathsf{NOTE}}.$  THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

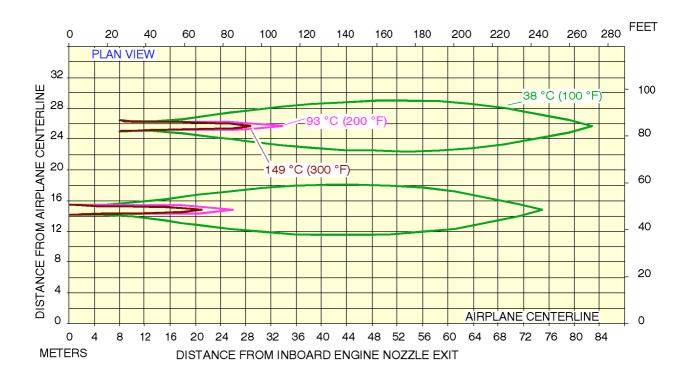
- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F)
- NO WIND

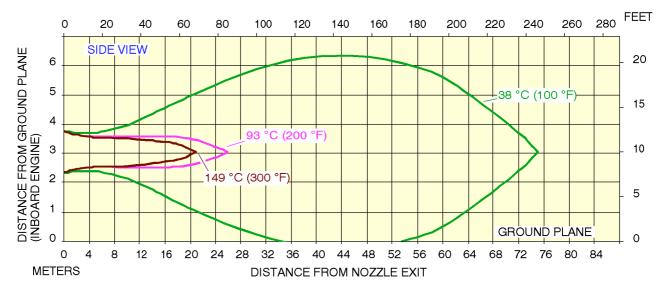
ZAC5 06 01 04 0 BAM0 01

Engine Exhaust Temperatures Breakaway Power - TRENT 970 Engines A380-841 Model

> 6-1-4 Page 1 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

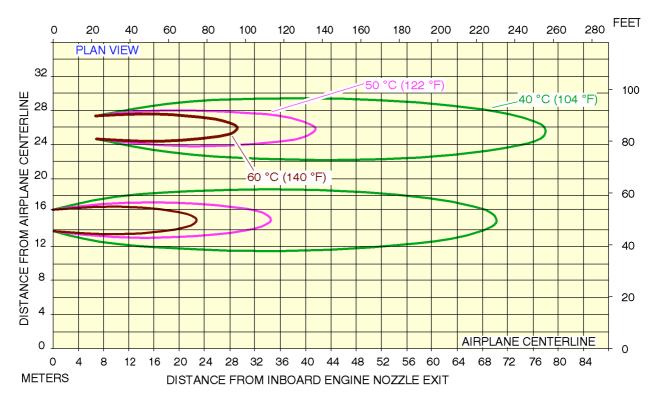
- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

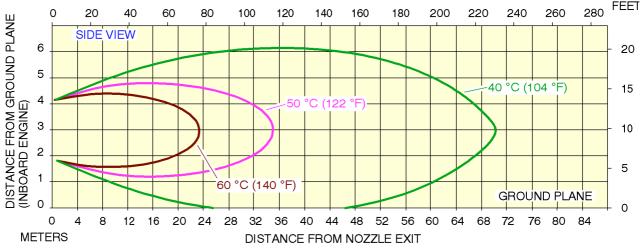
ZAC5 06 01 04 0 AAM0 01

Engine Exhaust Temperatures Breakaway Power - GP 7270 Engines A380-861 Model

> 6-1-4 Page 2 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

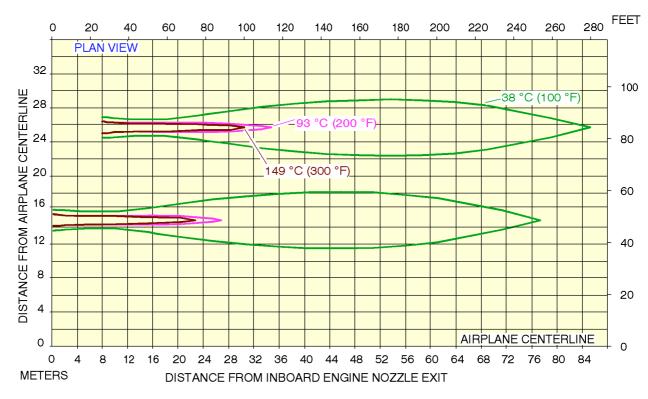
- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F)
- NO WIND

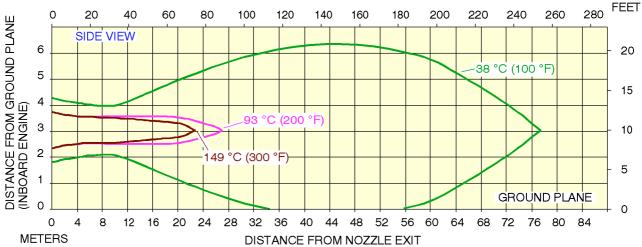
ZAC5 06 01 04 0 BBM0 01

Engine Exhaust Temperatures Breakaway Power - TRENT 977 Engines A380-843F Model

> 6-1-4 Page 3 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

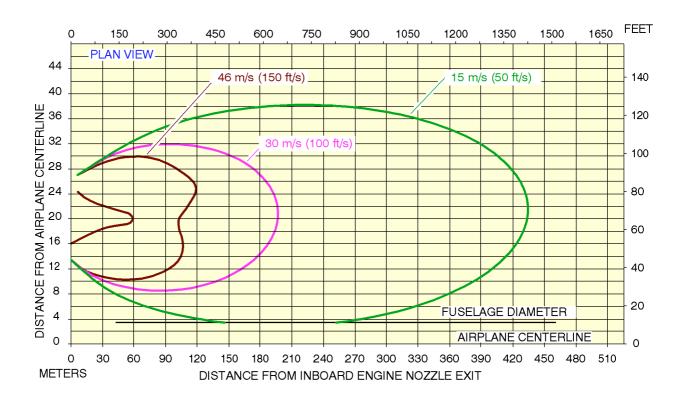
- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

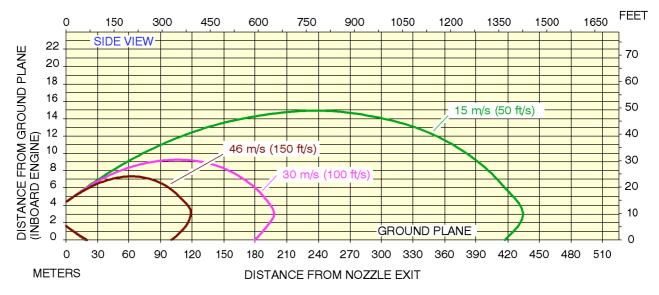
ZAC5 06 01 04 0 ABM0 01

Engine Exhaust Temperatures Breakaway Power - GP 7277 Engines A380-863F Model

> 6-1-4 Page 4 JUL 01/02

### **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F) CONDITIONS
- NO WIND

ZAC5 06 01 05 0 BAM0 01

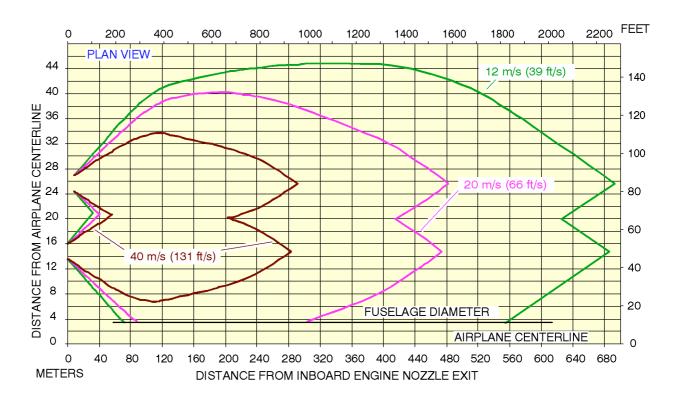
Engine Exhaust Velocities

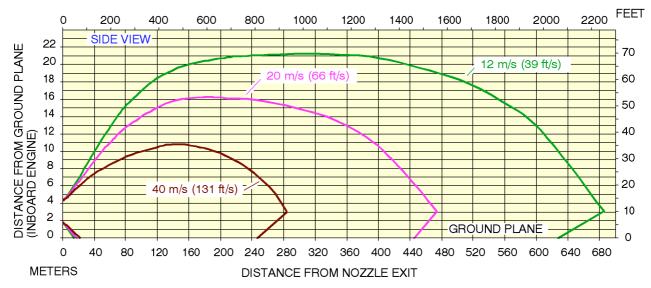
Max. Take-Off Power - TRENT 970 Engines

A380-841 Model

6-1-5 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZAC5 06 01 05 0 AAM0 01

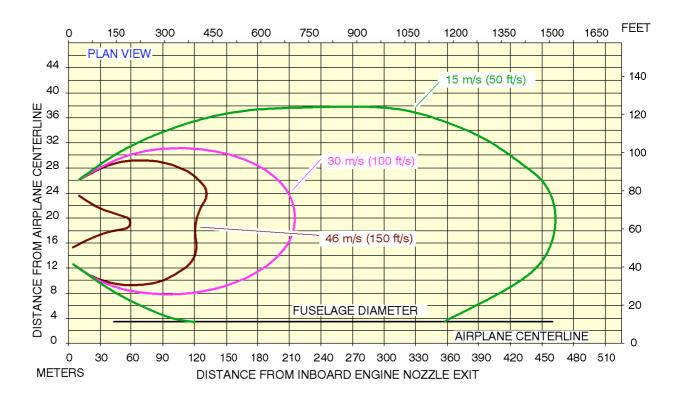
Engine Exhaust Velocities

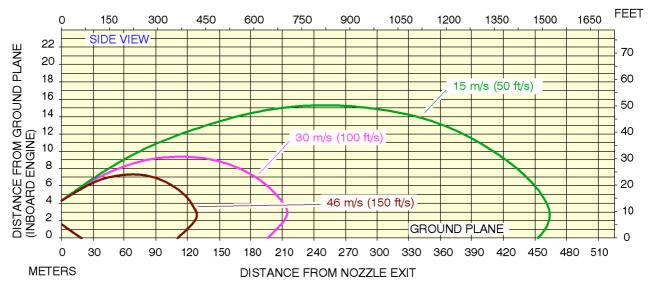
Max. Take-Off Power - GP 7270 Engines

A380-861 Model

6-1-5 Page 2 JUL 01/02

#### **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F) CONDITIONS
- NO WIND

ZAC5 06 01 05 0 BBM0 01

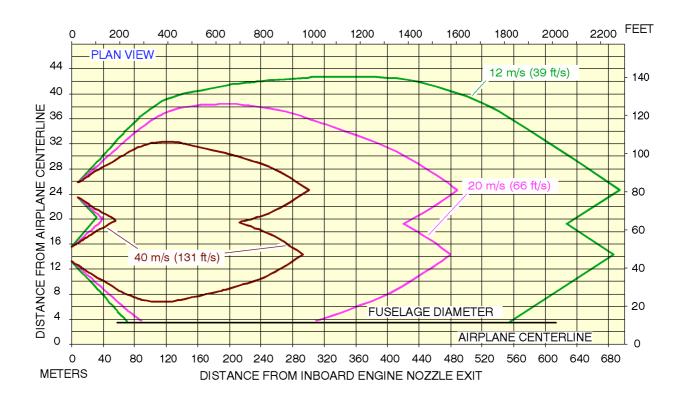
Engine Exhaust Velocities

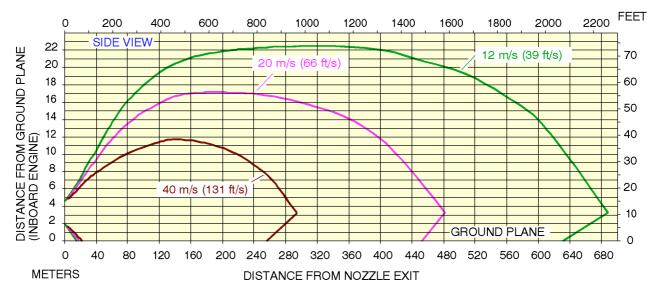
Max. Take-Off Power - TRENT 977 Engines

A380-843F Model

6-1-5 Page 3 JUL 01/02

#### **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

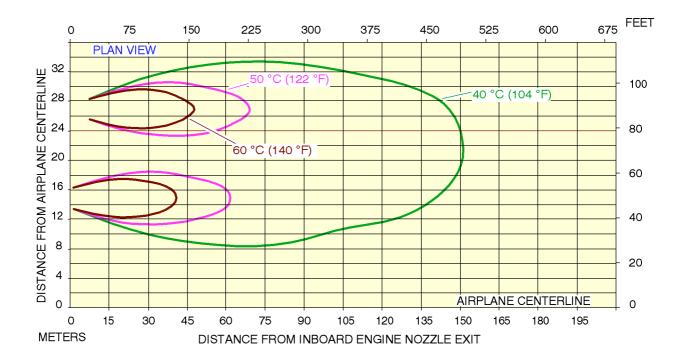
ZAC5 06 01 05 0 ABM0 01

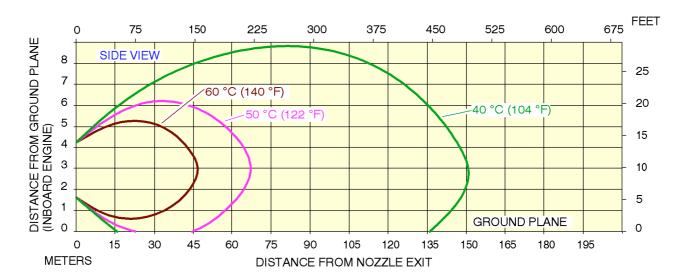
Engine Exhaust Velocities

Max. Take-Off Power - GP 7277 Engines
A380-863F Model

6-1-5 Page 4 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F)
- NO WIND

ZAC5 06 01 06 0 BAM0 01

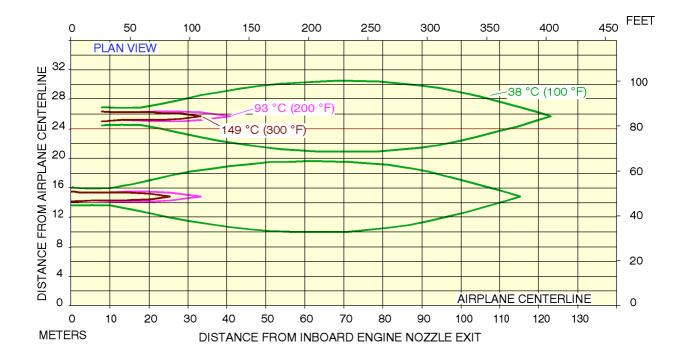
Engine Exhaust Temperatures

Max. Take-Off Power - TRENT 970 Engines

A380-841 Model

6-1-6 Page 1 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZAC5 06 01 06 0 AAM0 01

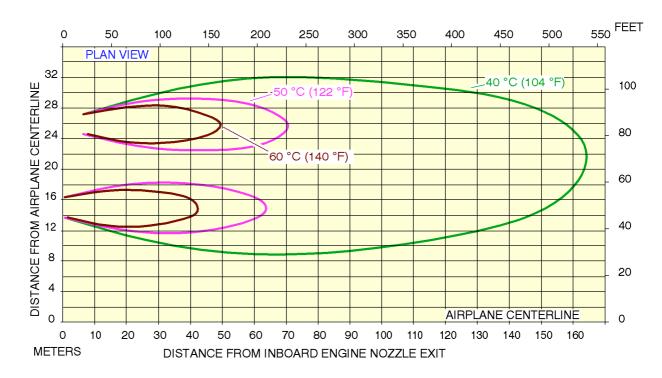
Engine Exhaust Temperatures

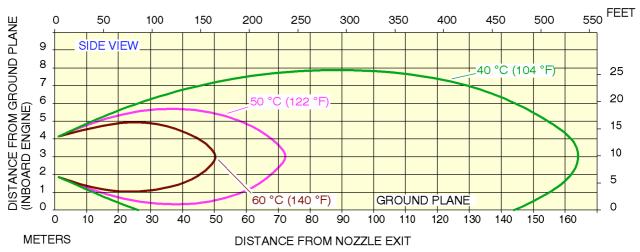
Max. Take-Off Power - GP 7270 Engines

A380-861 Model

6-1-6 Page 2 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F)
- NO WIND

ZAC5 06 01 06 0 BBM0 01

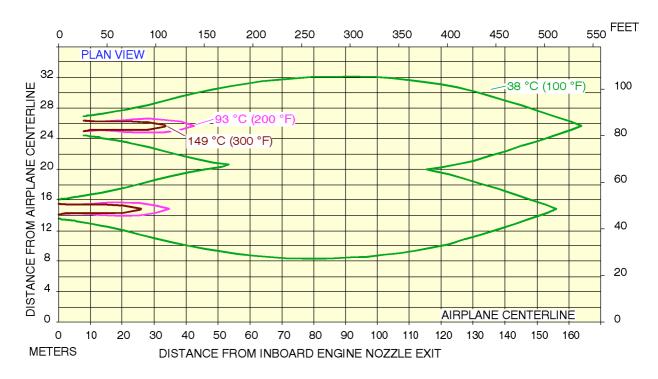
Engine Exhaust Temperatures

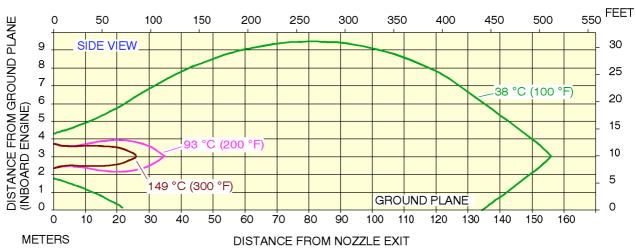
Max. Take-Off Power - TRENT 977 Engines

A380-843F Model

6-1-6 Page 3 JUL 01/02

## **AIRPLANE CHARACTERISTICS**





NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZAC5 06 01 06 0 ABM0 01

Engine Exhaust Temperatures

Max. Take-Off Power - GP 7277 Engines

A380-863F Model

6-1-6 Page 4 JUL 01/02

## **AIRPLANE CHARACTERISTICS**

6-2 AIRPORT AND COMMUNITY NOISE DATA

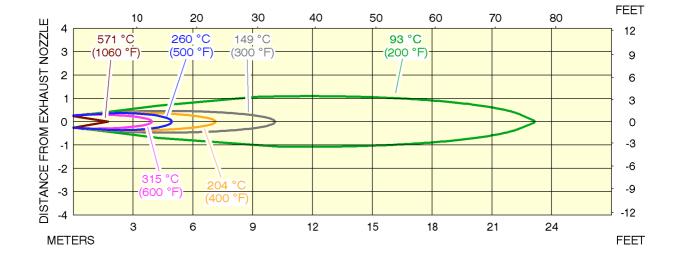
## **AIRPLANE CHARACTERISTICS**

6-3 DANGER AREAS OF THE ENGINES

## **AIRPLANE CHARACTERISTICS**

6-4 APU EXHAUST VELOCITIES (To Be Issued Later) AND TEMPERATURES

## **AIRPLANE CHARACTERISTICS**



ZAC6 06 04 01 0 AAM0 00

APU Exhaust Velocities (To Be Issued Later) and Temperatures PW 980A APU  ${\rm A}380{\rm -}800/800F~{\rm Models}$ 

6-4-1 Page 1 JUL 01/02

#### **AIRPLANE CHARACTERISTICS**

#### 7-0 PAVEMENT DATA

- 7-1 General Information
- 7-2 Landing Gear Footprint
- 7-3 Maximum Pavement Loads
- 7-4 Landing Gear Loading on Pavement
  - 7-4-1 Landing Gear Loading on Pavement
  - 7-4-2 Wing Gear and Body Gear Loading on Pavement
  - 7-4-3 Wing Gear and Body Gear Loading on Pavement
- 7-5 Flexible Pavement Requirements US Army Corps of Engineers Design Method (To Be Issued Later)
  - 7-5-1 Flexible Pavement Requirements US Army Corps of Engineers Design Method S-77-1 (To Be Issued Later)
- 7-6 Flexible Pavement Requirements LCN Conversion (To Be Issued Later)
  - 7-6-1 Flexible Pavement Requirements LCN Conversion (To Be Issued Later)
- 7-7 Rigid Pavement Requirements Portland Cement Association Design Method (To Be Issued Later)
  - 7-7-1 Rigid Pavement Requirements Portland Cement Association Design Method (To Be Issued Later)
- 7-8 Rigid Pavement Requirements LCN Conversion (To Be Issued Later)
  - 7-8-1 Radius of Relative Stiffness
  - 7-8-2 Rigid Pavement Requirements LCN Conversion (To Be Issued Later)
  - 7-8-3 Radius of Relative Stiffness (Other values of E and L)
  - 7-8-4 Radius of Relative Stiffness (Other values of E and L)
- 7-9 ACN/PCN Reporting System Flexible and Rigid Pavements
  - 7-9-1 Aircraft Classification Number Flexible Pavement
  - 7-9-2 Aircraft Classification Number Rigid Pavement

#### **AIRPLANE CHARACTERISTICS**

#### 7-1 GENERAL INFORMATION

A brief description of the pavement charts that follow will help in airport planning.

To aid in the interpolation between the discrete values shown, each airplane configuration is shown with a minimum range of five loads on the main landing gear.

All curves on the charts represent data at a constant specified tire pressure with:

- the airplane loaded to the maximum ramp weight
- the CG at is maximum permissible aft position.

Pavement requirements for commercial airplanes are derived from the static analysis of loads imposed on the main landing gear struts.

Section 7-2, presents basic data on the landing gear footprint configuration, maximum ramp weights and tire sizes and pressures. Section 7-2 Page 1: Model -800 and Section 7-2 Page 2: Model -800F.

Section 7-3, shows maximum vertical and horizontal pavement loads for certain critical conditions at the tire-ground interfaces.

Section 7-3 Page 1: Model -800 and Section 7-3 Page 2: Model -800F.

Section 7-4 contains charts to find these loads throughout the stability limit of the airplane at rest on the pavement.

Section 7-4-1 Page 1: Model -800 and Section 7-4-1 Page 2: Model -800F.

Section 7-4-3 shows the distribution of the main landing gear load to the wing and body gears.

Section 7-4-3 Page 1: Model -800 and Section 7-4-3 Page 2: Model -800F.

These main landing gear loads are used as the point of entry to the pavement design charts which follow, interpolating load values where necessary.

Section 7-5-1 uses procedures in Instruction Report No. S-77-1 "Procedures for Development of CBR Design Curves", dated June 1977 to show flexible pavement design curves.

The report was prepared by the U.S. Army Corps Engineers Waterways Experiment Station, Soils and Pavement Laboratory, Vicksburg, Mississippi. Section 7-5-1 Page 1: Model -800 and Section 7-5-1 Page 2: Model -800F.

The line showing 10 000 coverages is used to calculate the Aircraft Classification Number (ACN).

#### **AIRPLANE CHARACTERISTICS**

The procedure that follows is used to develop flexible pavement design curves such as those shown in Section 7-5-1.

- With the scale for pavement thickness at the bottom and the scale for CBR at the top, an arbitrary line is drawn representing 10 000 coverages.
- 2. Incremental values of the weight on the main landing gear are then plotted.
- 3. Annual departure lines are drawn based on the load lines of the weight on the main landing gear that is shown on the graph.

Section 7-7-1 gives the rigid pavement design curves that have been prepared with the use of the Westergaard Equation. This is in general accordance with the procedures outlined in the Portland Cement Association publications, "Design of Concrete Airport Pavement", 1973 and "Computer Program for Airport Pavement Design", (Program PDILB), 1967 both by Robert G. Packard. Section 7-7-1 Page 1: Model -800 and Section 7-7-1 Page 2: Model -800F.

The procedure that follows is used to develop rigid pavement design curves such as those shown in Section 7-7-1.

- 1. With the scale for pavement thickness on the left and the scale for allowable working stress on the right, an arbitrary line load line is drawn. This represents the main landing gear maximum weight to be shown.
- 2. All values of the subgrade modulus (k values) are then plotted.
- 3. Additional load lines for the incremental values of weight on the main landing gear are drawn on the basis of the curve for k=300 already shown on the graph.

All Load Classification Number (LCN) curves shown in Section 7-6-1 and Section 7-8-2 have been developed from a computer program based on data provided in the International Civil Aviation Organisation (ICAO) document 7920-AN/865/2, Aerodrome Manual, Part 2, "Aerodrome Physical Characteristics", Second Edition, 1965.

The flexible pavement charts in Section 7-6-1 show LCN against equivalent single wheel load, and equivalent single wheel load against pavement thickness.

Section 7-6-1 Page 1: Model -800 and Section 7-6-1 Page 2: Model -800F.

The rigid pavement charts in Section 7-8-2 show LCN against equivalent single wheel load against radius of relative stiffness. Section 7-8-2 Page 1: Model -800 and Section 7-8-2 Page 2: Model -800F.

Section 7-9 provides ACN data prepared according to the ACN/PCN system as referenced in ICAO Annex 14, "Aerodromes", Volume 1 Third Edition July 1999, incorporating Amendments 1 to 3.

The ACN/PCN system provides a standardized international airplane/pavement rating system replacing the various S, T, TT, LCN, AUW, ISWL, etc., rating systems used throughout the world.

ACN is the Aircraft Classification Number and PCN is the corresponding Pavement Classification Number.

An aircraft having an ACN equal to or less than the PCN can operate without restriction on the pavement.

Numerically the ACN is two times the derived single wheel load (expressed in thousands of kilograms).

The derived single wheel load is defined as the load on a single tire inflated to 1.25 MPa (181 psi) that would have the same pavement requirements as the aircraft.

Computationally, the ACN/PCN system uses PCA program PDILB for rigid pavement and S-77-1 for flexible pavements to calculate ACN values.

The Airport Authority must decide on the method of pavement analysis and the results of their evaluation shown as follows:

PCN						
PAVEMENT TYPE	SUBGRADE CATEGORY	TIRE-PRESSURE CATEGORY	EVALUATION METHOD			
R-Rigid F-Flexible	A-High B-Medium C-Low D-Ultra Low	W-No Limit X-To 1.50 MPa (217 psi) Y-To 1.00 MPa (145 psi) Z-To 0.50 MPa (73 psi)	T-Technical U-Using aircraft			

Section 7-9-1 page 1 (A380-800) and page 2 (A380-800F) show the aircraft ACN values for flexible pavements.

The four subgrade categories are :

A High Strength CBR 15
B Medium Strength CBR 10
C Low Strength CBR 6
D Ultra Low Strength CBR 3

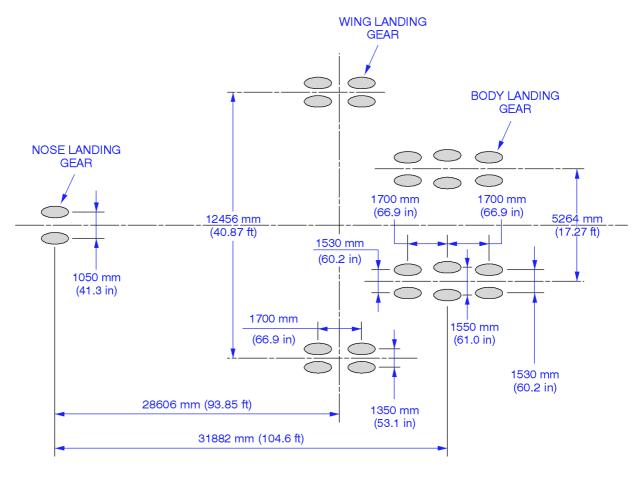
Section 7-9-2 page 1 (A380-800) and page 2 (A380-800F) show the aircraft ACN for rigid pavements.

The four subgrade categories are :

A High Strength Subgrade  $k=150~\text{MN/m}^3~\text{(550 pci)}$  B Medium Strength Subgrade  $k=80~\text{MN/m}^3~\text{(300 pci)}$  C Low Strength Subgrade  $k=40~\text{MN/m}^3~\text{(150 pci)}$  D Ultra Low Strength Subgrade  $k=20~\text{MN/m}^3~\text{(75 pci)}$ 

## **AIRPLANE CHARACTERISTICS**

MAXIMUM RAMP WEIGHT	562 000 kg (1 239 000 lb)			
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SHEET 7-4-1 PAGE 1			
NOSE GEAR TIRE SIZE	1270 x 455R22 32PR			
NOSE GEAR TIRE PRESSURE	13.8 bar (200 psi)			
WING GEAR TIRE SIZE	1400 x 530R23 40PR			
WING GEAR TIRE PRESSURE	14.6 bar (212 psi)			
BODY GEAR TIRE SIZE	1400 x 530R23 40PR			
BODY GEAR TIRE PRESSURE	14.6 bar (212 psi)			



ZAC8 07 02 00 0 AAM0 03

Landing Gear Footprint A380-800 Models

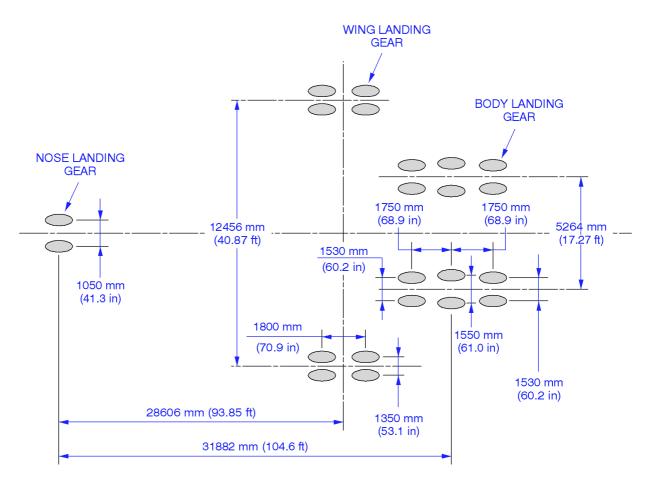
7-2 Page 1 SEP 30/03

R

R

## **AIRPLANE CHARACTERISTICS**

MAXIMUM RAMP WEIGHT	592 000 kg (1 305 125 lb)			
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SHEET 7-4-1 PAGE 2			
NOSE GEAR TIRE SIZE	1400 x 530R23 40PR			
NOSE GEAR TIRE PRESSURE	11.8 bar (171 psi)			
WING GEAR TIRE SIZE	56 x 22R24 40PR			
WING GEAR TIRE PRESSURE	13.6 bar (197 psi)			
BODY GEAR TIRE SIZE	56 x 22R24 40PR			
BODY GEAR TIRE PRESSURE	13.6 bar (197 psi)			



ZAC8 07 02 00 0 ACM0 02

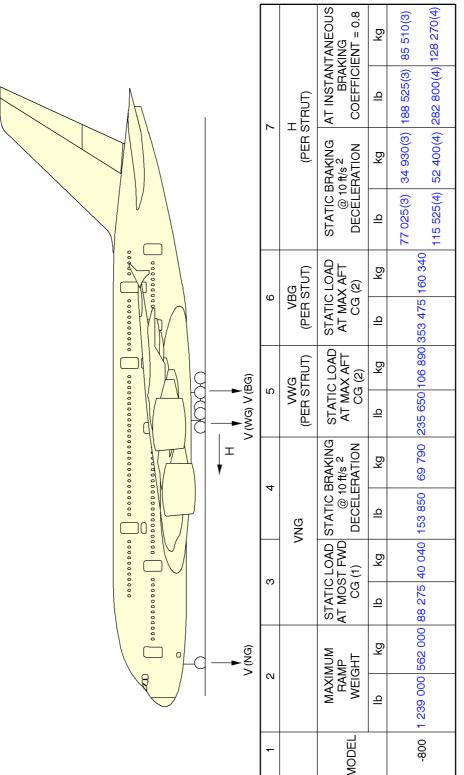
Landing Gear Footprint A380-800F Models

R

R

#### PRELIMINARY DATA **©A380**

## **AIRPLANE CHARACTERISTICS**



MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG MAXIMUM VERTICAL WING GEAR GROUND LOAD AT MOST AFT CG V(WG) (NG)

MAXIMUM VERTICAL BODY GEAR GROUND LOAD AT MOST AFT CG V (BG)

MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

AFT CG = 43.0 % MAC (S) (E)

FWD CG = 37.5 % MAC

 $\Xi$ 

BRAKED WING GEAR BRAKED BODY GEAR ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

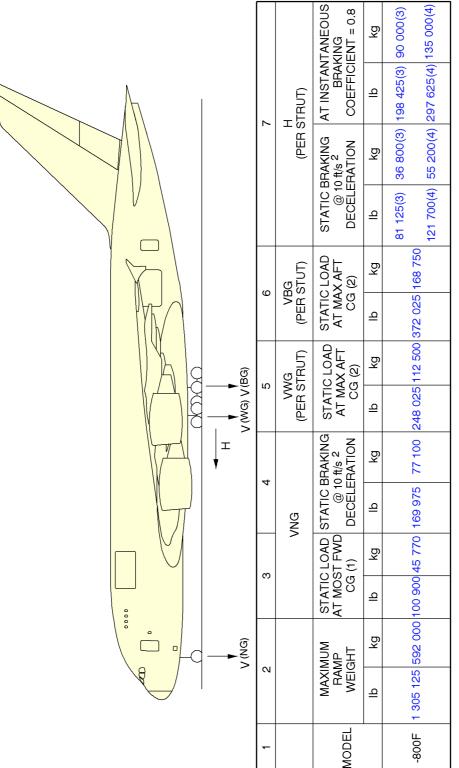
ZAC8 07 03 00 0 AAM0 02

Maximum Pavement Loads A380-800 Models

> 7-3 Page 1 JUL 01/02

#### PRELIMINARY DATA **©A380**

## **AIRPLANE CHARACTERISTICS**



MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG MAXIMUM VERTICAL WING GEAR GROUND LOAD AT MOST AFT CG V(NG) V(WG)

MAXIMUM VERTICAL BODY GEAR GROUND LOAD AT MOST AFT CG

MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

FWD CG = 36.0 % MAC

AFT CG = 42.8 % MAC BRAKED WING GEAR E Ø ®

BRAKED BODY GEAR

ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

ZAC8 07 03 00 0 ACM0 03

Maximum Pavement Loads A380-800F Models

> 7-3 Page 2 SEP 30/03

#### **AIRPLANE CHARACTERISTICS**

#### 7-4 LANDING GEAR LOADING ON PAVEMENT

The Main Landing Gear Group consists of two Wing Gears (4 Wheel Bogies) plus two Body Gears (6 Wheel Bogies).

#### - A380-800 models :

In the example shown in Section 7-4-1 Page 1, the Gross Aircraft Weight is 450 tonnes (992 080 lb) and the percentage of weight on the Main Landing gear is 95.1 %.

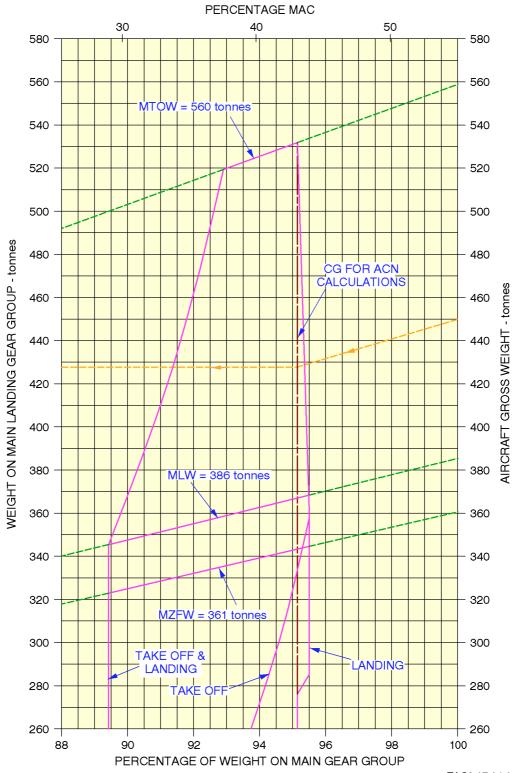
For these conditions the total weight on the Main Landing Gear Group is 428 tonnes (943 580 lb).

#### - A380-800F models:

In the example shown in Section 7-4-1 Page 2, the Gross Aircraft Weight is 450 tonnes (992 080 lb) and the percentage of weight on the Main Landing gear is 95 %.

For these conditions the total weight on the MLG Group is 427.5 tonnes (942 475 lb).

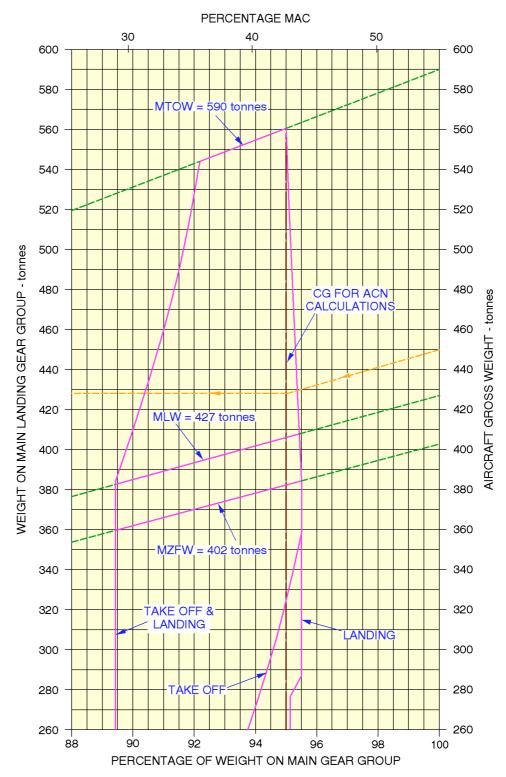
## **AIRPLANE CHARACTERISTICS**



ZAC8 07 04 01 0 AAM0 01

Landing Gear Loading on Pavement A380-800 Models

7-4-1 Page 1 JUL 01/02



ZAC8 07 04 01 0 ACM0 01

Landing Gear Loading on Pavement A380-800F Models

7-4-1 Page 2 JUL 01/02

#### **AIRPLANE CHARACTERISTICS**

#### 7-4-2 WING GEAR AND BODY GEAR LOADING ON PAVEMENT

The Main Landing Gear Group consists of two Wing Gears (4 Wheel Bogies) plus two Body Gears (6 Wheel Bogies).

#### - A380-800 models :

In the example shown in Section 7-4-3 Page 1, the Gross Aircraft Weight is 450 tonnes (992 080 lb) at Aft CG for ACN Calculations (see Section 7-4-1, Page 1)
For these conditions the load on the two Wing Gears is 171.2 tonnes (377 430 lb) and the load on the two Body Gears is 256.8 tonnes (566 150 lb).
The total weight on the Main Landing Gear Group is 428 tonnes (943 580 lb)

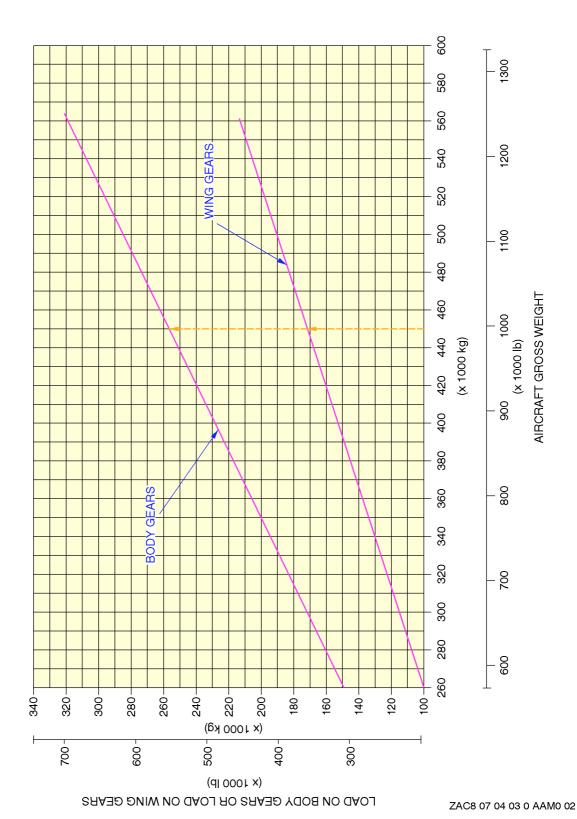
#### - A380-800F models:

(942 475 lb)

In the example shown in Section 7-4-3 Page 2, the Gross Aircraft Weight is 450 tonnes (992 080 lb) at Aft CG for ACN Calculations (see Section 7-4-1, Page 2) For these conditions the load on the two Wing Gears is 171 tonnes (376 990 lb) and the load on the two Body Gears is 256.5 tonnes (565 485 lb).

The total weight on the Main Landing Gear Group is 427.5 tonnes

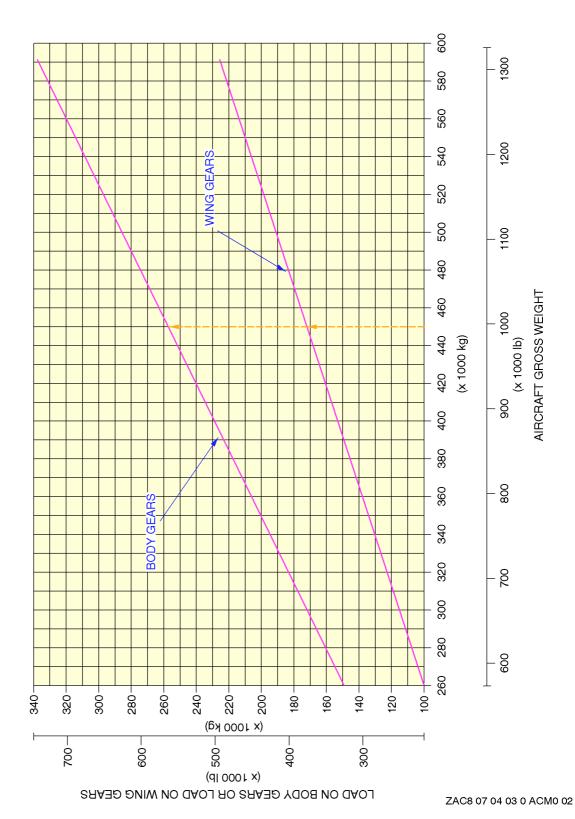
CG FOR ACN CALCULATIONS: 43 % MAC SEE SECTION 7-4-1 PAGE 1



Wing Gear and Body Gear Loading on Pavement A380-800 Models

7-4-3 Page 1 SEP 30/03

CG FOR ACN CALCULATIONS: 42.8 % MAC SEE SECTION 7-4-1 PAGE 2



Wing Gear and Body Gear Loading on Pavement A380-800F Models

7-4-3 Page 2 SEP 30/03

7-5 FLEXIBLE PAVEMENT REQUIREMENTS - US ARMY CORPS OF ENGINEERS DESIGN METHOD

In order to determine a particular Flexible Pavement Thickness, the Subgrade Strength (CBR), the Annual Departure Level and the weight on the Wing and Body Gears must be known.

#### 7-6 FLEXIBLE PAVEMENT REQUIREMENTS - LCN CONVERSION

In order to determine the airplane weight that can be accommodated on a particular Flexible Pavement, both the LCN of the pavement and the thickness (h) must be known.

## **AIRPLANE CHARACTERISTICS**

7-7 RIGID PAVEMENT REQUIREMENTS - PORTLAND CEMENT ASSOCIATION DESIGN METHOD

In order to determine a particular Rigid Pavement Thickness, the Subgrade Modulus (K), the allowable working stress and the weight on the Wing and Body Landing Gears must be known.

#### 7-8 RIGID PAVEMENT REQUIREMENTS - LCN CONVERSION

In order to determine the airplane weight that can be accommodated on a particular Rigid Pavement, both the LCN of the pavement and the Radius of Relative Stiffness (L) must be known.

# RADIUS OF RELATIVE STIFFNESS (L) VALUES IN INCHES

$$L = 4 \sqrt{\frac{Ed^3}{12 (1 - \mu^2) k}} = 24.1652 \quad 4 \sqrt{\frac{d^3}{k}}$$

WHERE E = Young's Modulus = 4 x 10 psi

k = Subgrade Modulus, lbf/in<sup>3</sup>

d = Rigid Pavement Thickness, inches

 $\mu$  = Poisson's Ratio = 0.15

d	k=75	k=100	k=150	k=200	k=250	k=300	k=350	k=400	k=550
6.0	31.48	29.30	26.47	24.63	23.30	22.26	21.42	20.72	19.13
6.5	33.43	31.11	28.11	26.16	24.74	23.64	22.74	22.00	20.31
7.0	35.34	32.89	29.72	27.65	26.15	24.99	24.04	23.25	21.47
7.5	37.22	34.63	31.29	29.12	27.54	26.32	25.32	24.49	22.61
8.0	39.06	36.35	32.85	30.57	28.91	27.62	26.58	25.70	23.74
8.5	40.88	38.04	34.37	31.99	30.25	28.91	27.81	26.90	24.84
9.0	42.67	39.71	35.88	33.39	31.58	30.17	29.03	28.08	25.93
9.5	44.43	41.35	37.36	34.77	32.89	31.42	30.23	29.24	27.00
10.0	46.18	42.97	38.83	36.14	34.17	32.65	31.42	30.39	28.06
10.5	47.90	44.57	40.28	37.48	35.45	33.87	32.59	31.52	29.11
11.0	49.60	46.16	41.71	38.81	36.71	35.07	33.75	32.64	30.14
11.5	51.28	47.72	43.12	40.13	37.95	36.26	34.89	33.74	31.16
12.0	52.94	49.27	44.52	41.43	39.18	37.44	36.02	34.84	32.17
12.5	54.59	50.80	45.90	42.72	40.40	38.60	37.14	35.92	33.17
13.0	56.22	52.32	47.27	43.99	41.61	39.75	38.25	36.99	34.16
13.5	57.83	53.82	48.63	45.26	42.80	40.89	39.35	38.06	35.14
14.0	59.43	55.31	49.98	46.51	43.98	42.02	40.44	39.11	36.12
14.5	61.02	56.78	51.31	47.75	45.16	43.15	41.51	40.15	37.08
15.0	62.59	58.25	52.63	48.98	46.32	44.26	42.58	41.19	38.03
15.5	64.15	59.70	53.94	50.20	47.47	45.36	43.64	42.21	38.98
16.0	65.69	61.13	55.24	51.41	48.62	46.45	44.70	43.23	39.92
16.5	67.23	62.56	56.53	52.61	49.75	47.54	45.74	44.24	40.85
17.0	68.75	63.98	57.81	53.80	50.88	48.61	46.77	45.24	41.78
17.5	70.26	65.38	59.08	54.98	52.00	49.68	47.80	46.23	42.70
18.0	71.76	66.78	60.34	56.15	53.11	50.74	48.82	47.22	43.61
19.0	74.73	69.54	62.84	58.48	55.31	52.84	50.84	49.17	45.41
20.0	77.66	72.27	65.30	60.77	57.47	54.91	52.84	51.10	47.19
21.0	80.55	74.96	67.74	63.04	59.62	56.96	54.81	53.01	48.95
22.0	83.41	77.63	70.14	65.28	61.73	58.98	56.75	54.89	50.69
23.0	86.24	80.26	72.52	67.49	63.83	60.98	58.68	56.75	52.41
24.0	89.04	82.86	74.87	69.68	65.90	62.96	60.58	58.59	54.11
25.0	91.81	85.44	77.20	71.84	67.95	64.92	62.46	60.41	55.79

REFERENCE: PORTLAND CEMENT ASSOCIATION

ZAC8 07 08 01 0 AAM0 01

Radius of Relative Stiffness

To Be Issued Later

Rigid Pavement Requirements - LCN Conversion A380-800 Models

To Be Issued Later

Rigid Pavement Requirements - LCN Conversion A380-800F Models

#### **AIRPLANE CHARACTERISTICS**

#### 7-8-3 RADIUS OF RELATIVE STIFFNESS (Other values of E and "L")

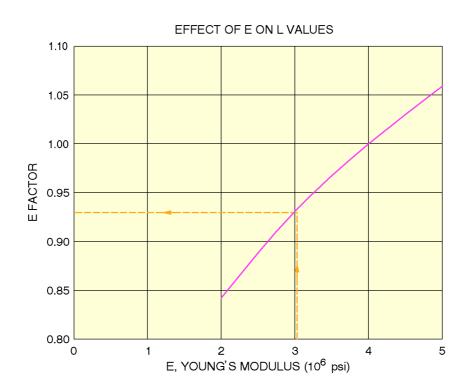
The chart of Section 7-8-1 Page 1 presents "L" values based on Young's Modulus (E) of 4 000 000 psi and Poisson's Ratio ( $\mu$ ) of 0.15.

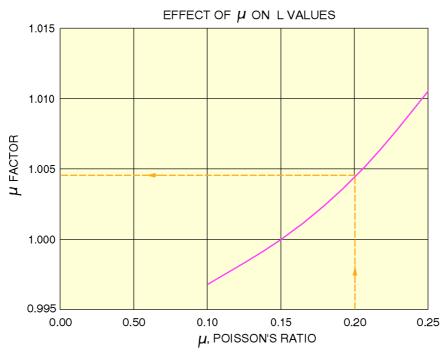
For convenience in finding "L" values based on other values of E and  $\mu$ , the curves of section 7-8-4 are included.

For example, to find an "L" value based on an E of 3 000 000 psi, the "E" factor of 0.931 is multiplied by the "L" value found in table of Section 7-8-1 Page 1.

The effect of variations of  $\mu$  on the "L" value is treated in a similar manner.

## **AIRPLANE CHARACTERISTICS**





NOTE: BOTH CURVES ON THIS PAGE ARE USED TO ADJUST THE L VALUES OF TABLE 7-8-1

ZAC8 07 08 04 0 AAM0 02

Radius of Relative Stiffness

7-8-4 Page 1 SEP 30/03

#### 7-9 ACN/PCN REPORTING SYSTEM

To determine the ACN of an aircraft on flexible or rigid pavement, both the aircraft gross weight and the subgrade strength must be known.

#### - A380-800 models :

R

R

R

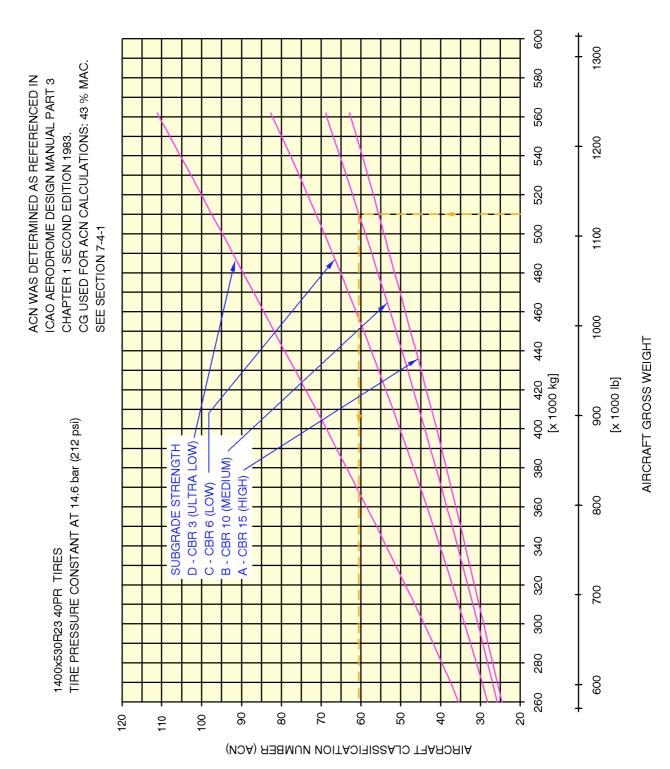
- In the example shown in Section 7-9-1, Page 1, for an Aircraft Gross Weight of 510 tonnes (1 124 360 lb) and medium subgrade strength (code B), the ACN for the flexible pavement is 60.5.
- In the example shown in Section 7-9-2, Page 1, for the same Aircraft Gross Weight and medium subgrade strength (code B), the ACN for the rigid pavement is 58.

#### - A380-800F models:

- In the example shown in Section 7-9-1, Page 2, for an Aircraft Gross Weight of 510 tonnes (1 124 360 lb) and medium subgrade strength (code B), the ACN for the flexible pavement is 59.
- In the example shown in Section 7-9-2, Page 2, for the same Aircraft Gross Weight and medium subgrade strength (code B), the ACN for the rigid pavement is 55.

NOTE: An aircraft with an ACN equal to or less than the reported PCN can operate on that pavement, subject to tire pressure limitations if applicable.

## **AIRPLANE CHARACTERISTICS**



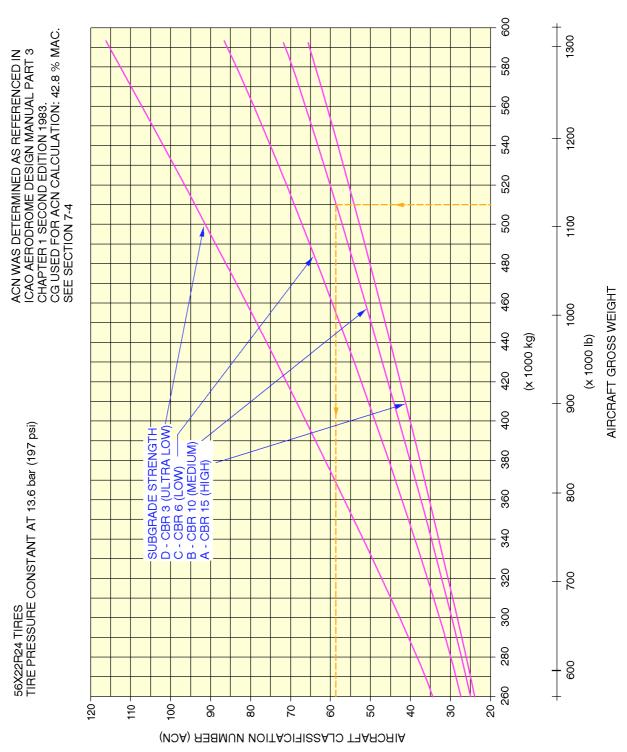
ZAC8 07 09 01 0 AAM0 04

Aircraft Classification Number - Flexible Pavement A380-800 Models

7-9-1 Page 1 JAN 30/04

R R

## **AIRPLANE CHARACTERISTICS**

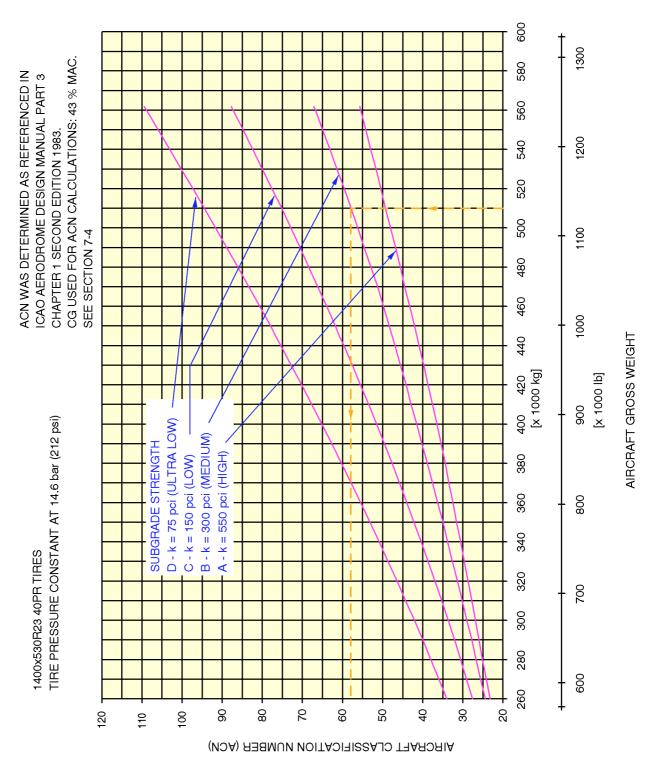


ZAC8 07 09 01 0 ACM0 03

Aircraft Classification Number - Flexible Pavement A380-800F Models

7-9-1 Page 2 SEP 30/03

### **AIRPLANE CHARACTERISTICS**



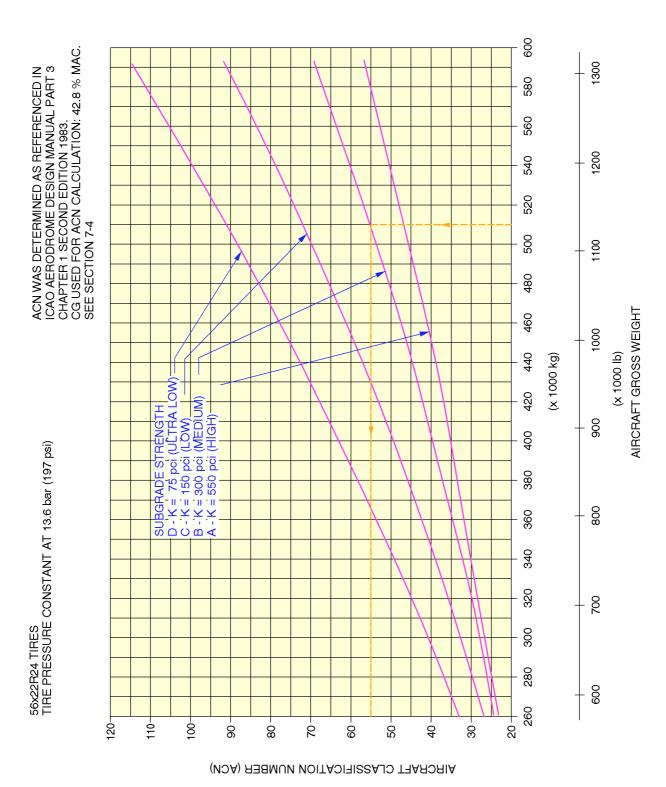
ZAC8 07 09 02 0 AAM0 04

Aircraft Classification Number - Rigid Pavement A380-800 Models

7-9-2 Page 1 JAN 30/04

R R

### **AIRPLANE CHARACTERISTICS**



ZAC8 07 09 02 0 ACM0 03

Aircraft Classification Number - Rigid Pavement A380-800F Models

7-9-2 Page 2 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

8-0 DERIVATIVE AIRPLANES

8-1 Possible Future Derivative Airplane

### **AIRPLANE CHARACTERISTICS**

#### 8-1 POSSIBLE FUTURE DERIVATIVE AIRPLANES

All product line airplanes are studied for possible size changes that might be required for fulfilling future airline needs. History has proved that derivative airplanes of a given model can encompass both increases and decreases in linear dimensions and weight.

### **AIRPLANE CHARACTERISTICS**

#### 9-0 SCALED DRAWINGS

9-1 Scaled Drawing - 1 in = 50 ft

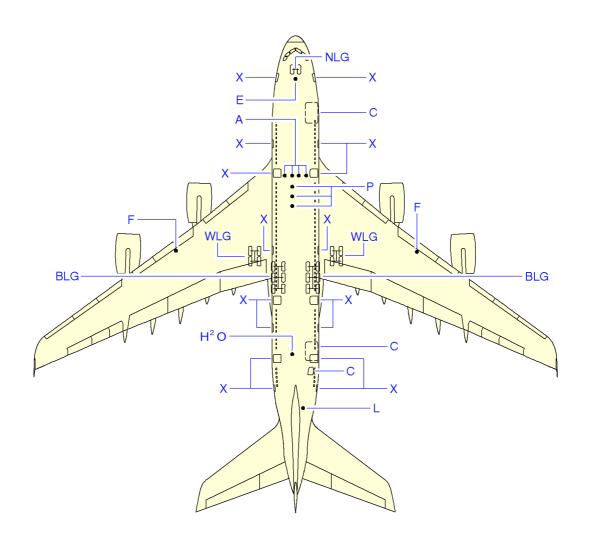
9-2 Scaled Drawing - 1 in = 100 ft

9-3 Scaled Drawing - 1 cm = 500 cm

9-4 Scaled Drawing - 1 cm = 1000 cm

 ${\hbox{{\tt NOTE}}\over\hbox{{\tt rono}}}$ : Reproduction of these scaled drawings can modify the scale. When printing or copying these drawings, adjust the scale if necessary.

### **AIRPLANE CHARACTERISTICS**



A AIR CONDITIONING

B BULK CARGO COMPT DOOR

BLG BODY LANDING GEAR

C CARGO COMPT DOOR

E ELECTRICAL

F FUEL

H<sup>2</sup>O POTABLE WATER

L LAVATORY

NLG NOSE LANDING GEAR

P PNEUMATIC

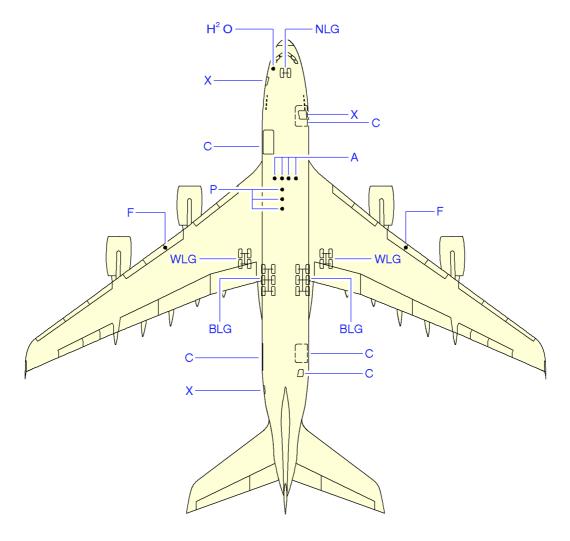
WLG WING LANDING GEAR
X PASSENGER/CREW DOOR

DB1A ZAC5 09 01 00 0 AAM0 01

Scaled Drawing - 1 in = 50 ft A380-800 Models

> 9-1 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



A AIR CONDITIONING

B BULK CARGO COMPT DOOR

BLG BODY LANDING GEAR

C CARGO COMPT DOOR

E ELECTRICAL

F FUEL

H<sup>2</sup>O POTABLE WATER

L LAVATORY

NLG NOSE LANDING GEAR

P PNEUMATIC

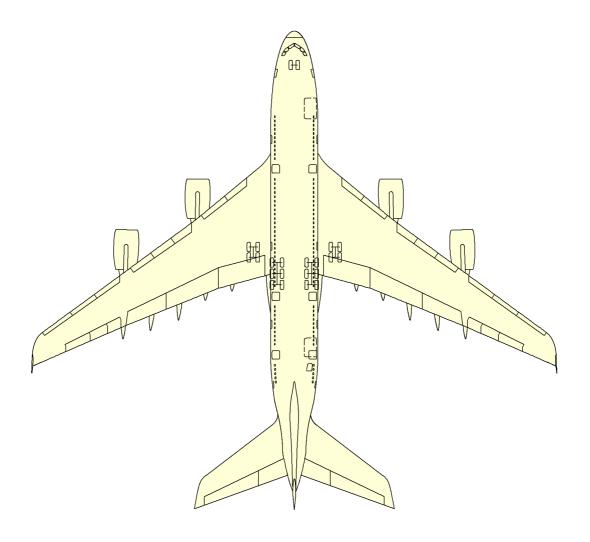
WLG WING LANDING GEAR
X COURIER/CREW DOOR

DB1A ZAC5 09 01 00 0 ABM0 02

Scaled Drawing - 1 in = 50 ft A380-800F Models

> 9-1 Page 2 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

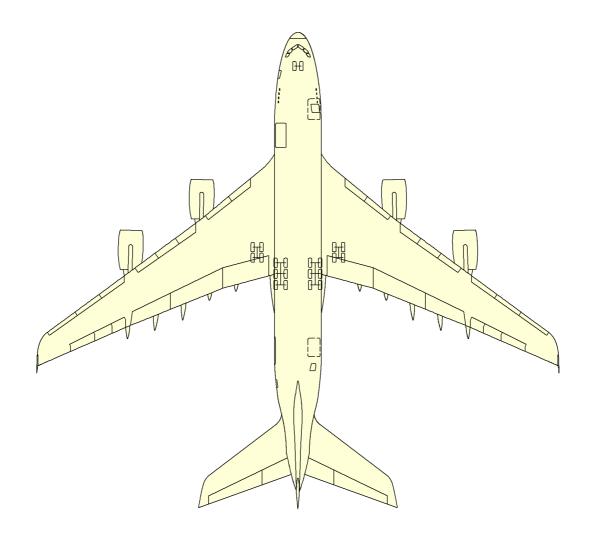


DB1A ZAC5 09 01 00 0 BAM0 00

Scaled Drawing - 1 in = 50 ft A380-800 Models

> 9-1 Page 3 JUL 01/02

## **AIRPLANE CHARACTERISTICS**

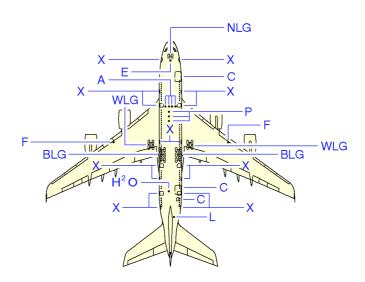


DB1A ZAC5 09 01 00 0 BBM0 01

Scaled Drawing - 1 in = 50 ft A380-800F Models

> 9-1 Page 4 SEP 30/03

### **AIRPLANE CHARACTERISTICS**



A AIR CONDITIONING

B BULK CARGO COMPT DOOR

BLG BODY LANDING GEAR

C CARGO COMPT DOOR

E ELECTRICAL

F FUEL

H<sup>2</sup>O POTABLE WATER

L LAVATORY

NLG NOSE LANDING GEAR

P PNEUMATIC

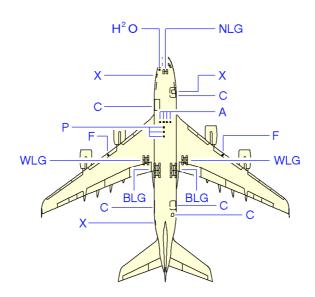
WLG WING LANDING GEAR
X PASSENGER/CREW DOOR

DB1A ZAC5 09 02 00 0 AAM0 01

Scaled Drawing - 1 in = 100 ft A380-800 Models

> 9-2 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



A AIR CONDITIONING

B BULK CARGO COMPT DOOR

BLG BODY LANDING GEAR

C CARGO COMPT DOOR

E ELECTRICAL

F FUEL

H<sup>2</sup>O POTABLE WATER

L LAVATORY

NLG NOSE LANDING GEAR

P PNEUMATIC

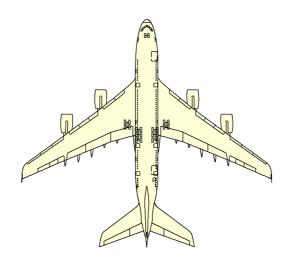
WLG WING LANDING GEAR
X COURIER/CREW DOOR

DB1A ZAC5 09 02 00 0 ABM0 02

Scaled Drawing - 1 in = 100 ft A380-800F Models

> 9-2 Page 2 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

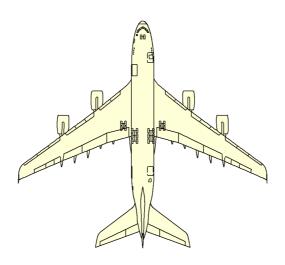


DB1A ZAC5 09 02 00 0 BAM0 00

Scaled Drawing - 1 in = 100 ft A380-800 Models

> 9-2 Page 3 JUL 01/02

## **AIRPLANE CHARACTERISTICS**

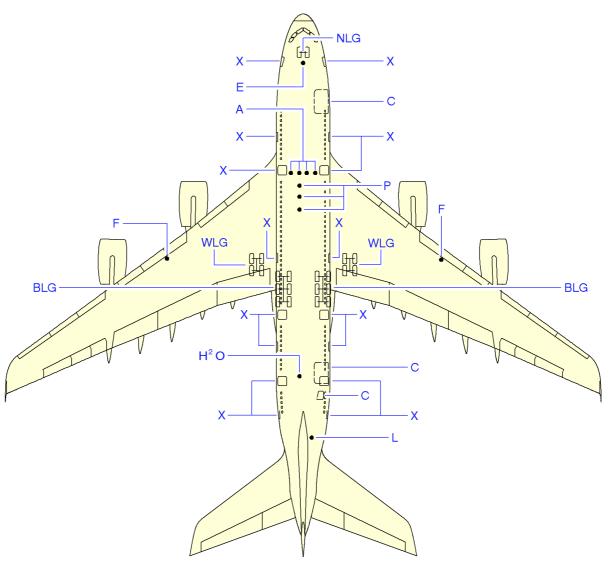


DB1A ZAC5 09 02 00 0 BBM0 01

Scaled Drawing - 1 in = 100 ft A380-800F Models

> 9-2 Page 4 SEP 30/03

### **AIRPLANE CHARACTERISTICS**



A AIR CONDITIONING

B BULK CARGO COMPT DOOR

BLG BODY LANDING GEAR

C CARGO COMPT DOOR

E ELECTRICAL

F FUEL

H<sup>2</sup>O POTABLE WATER

L LAVATORY

NLG NOSE LANDING GEAR

P PNEUMATIC

WLG WING LANDING GEAR

X PASSENGER/CREW DOOR

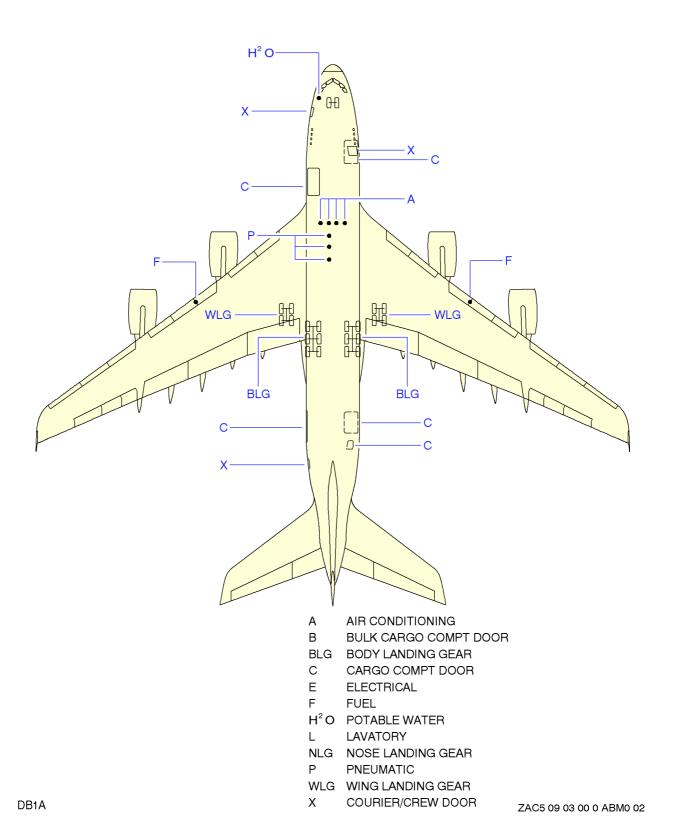
ZAC5 09 03 00 0 AAM0 01

Scaled Drawing - 1 cm = 500 cm A380-800 Models

> 9-3 Page 1 JUL 01/02

DB1A

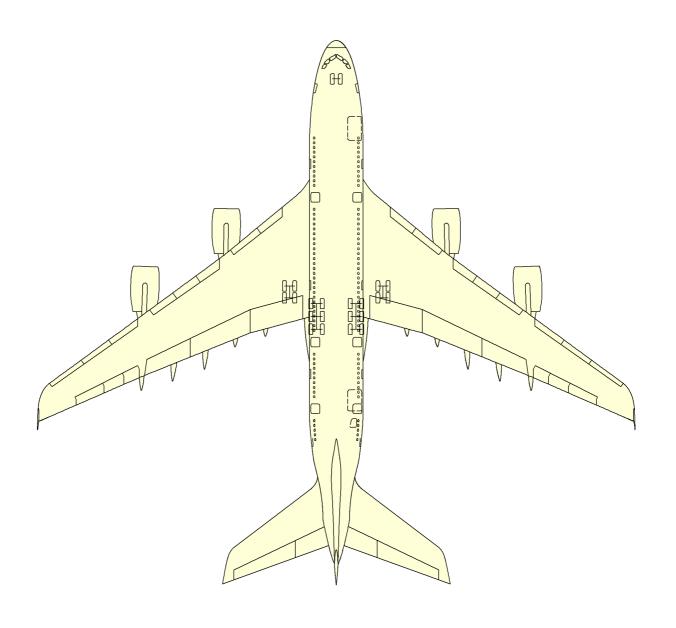
### **AIRPLANE CHARACTERISTICS**



Scaled Drawing - 1 cm = 500 cm A380-800F Models

> 9-3 Page 2 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

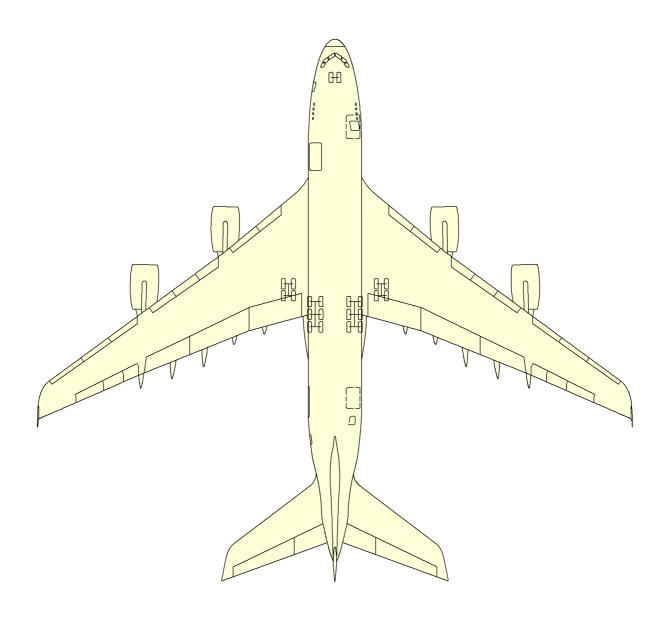


DB1A ZAC5 09 03 00 0 BAM0 00

Scaled Drawing - 1 cm = 500 cm A380-800 Models

> 9-3 Page 3 JUL 01/02

## **AIRPLANE CHARACTERISTICS**

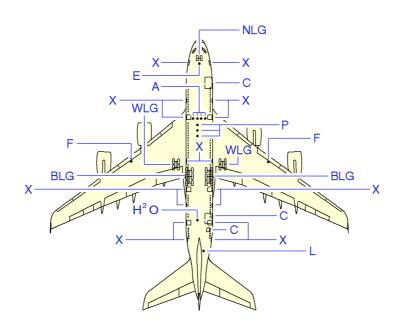


DB1A ZAC5 09 03 00 0 BBM0 01

Scaled Drawing - 1 cm = 500 cm A380-800F Models

> 9-3 Page 4 SEP 30/03

### **AIRPLANE CHARACTERISTICS**



A AIR CONDITIONING

B BULK CARGO COMPT DOOR

BLG BODY LANDING GEAR

C CARGO COMPT DOOR

E ELECTRICAL

F FUEL

H<sup>2</sup>O POTABLE WATER

L LAVATORY

NLG NOSE LANDING GEAR

P PNEUMATIC

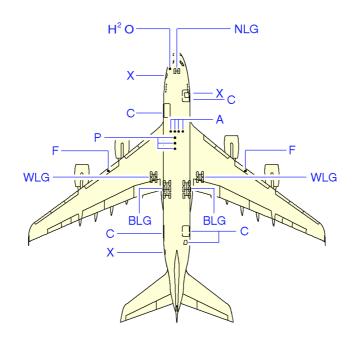
WLG WING LANDING GEAR
X PASSENGER/CREW DOOR

DB1A ZAC5 09 04 00 0 AAM0 01

Scaled Drawing - 1 cm = 1000 cm A340-800 Models

> 9-4 Page 1 JUL 01/02

### **AIRPLANE CHARACTERISTICS**



A AIR CONDITIONING

B BULK CARGO COMPT DOOR

BLG BODY LANDING GEAR

C CARGO COMPT DOOR

E ELECTRICAL

F FUEL

H<sup>2</sup>O POTABLE WATER

L LAVATORY

NLG NOSE LANDING GEAR

P PNEUMATIC

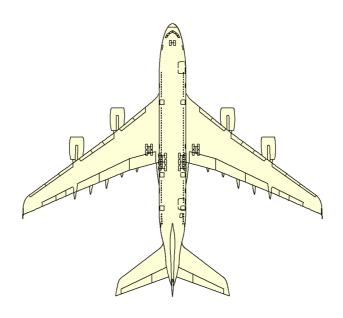
WLG WING LANDING GEAR
X COURIER/CREW DOOR

DB1A ZAC5 09 04 00 0 ABM0 02

Scaled Drawing - 1 cm = 1000 cm A380-800F Models

> 9-4 Page 2 SEP 30/03

## **AIRPLANE CHARACTERISTICS**

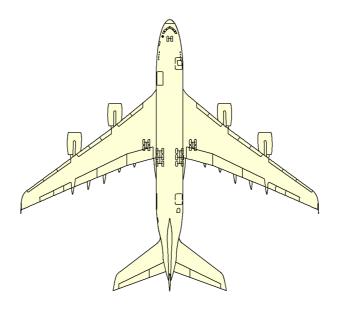


DB1A ZAC5 09 04 00 0 BAM0 00

Scaled Drawing - 1 cm = 1000 cm A380-800 Models

> 9-4 Page 3 JUL 01/02

## **AIRPLANE CHARACTERISTICS**



DB1A ZAC5 09 04 00 0 BBM0 01

Scaled Drawing - 1 cm = 1000 cm A380-800F Models

> 9-4 Page 4 SEP 30/03