



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW4164  
UNIQUE ID NUMBER: 1PW049  
COMBUSTOR: Floatwall  
ENGINE TYPE: TF

BYPASS RATIO: 5.2  
PRESSURE RATIO ( $\pi_{00}$ ): 31.2  
RATED THRUST ( $F_{00}$ ) (kN): 284.7

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	8.2	40.5	70.1	4.2
AS % OF ORIGINAL LIMIT	41.6	34.3	68.4	23.9
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			85.5	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			100.9	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			114.1	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			133.3	

### DATA STATUS

- PRE-REGULATION  
x CERTIFICATION  
- REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
x DEDICATED ENGINES TO PRODUCTION STANDARD  
- OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
(ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
x OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
TAKE-OFF	100	0.7	2.626	0.03	0.69	38.57	3.3
CLIMB OUT	85	2.2	2.179	0.04	0.79	31.66	2.4
APPROACH	30	4.0	0.754	0.16	1.86	14.10	0.6
IDLE	7	26.0	0.210	4.46	26.67	4.03	0.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			906	1505	9377	17232	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				5.3	33.0	60.5	3.3
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.3
TEMPERATURE (K)	273.5
ABS HUMIDITY (kg/kg)	0.0018

### FUEL

SPEC	Jet A
H/C	1.89
AROM (%)	21.85

MANUFACTURER: Pratt & Whitney  
TEST ORGANIZATION: Pratt & Whitney  
TEST LOCATION: East Hartford, CT  
TEST DATES: 14/02/1993-17/02/1993

### NO<sub>x</sub> REGULATION PARAGRAPH

x	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
	2.3.2 e) (CAEP/8)

### REMARKS

1. Data from X821-3 with Floatwall Combustor

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)