



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW4084D  
UNIQUE ID NUMBER: 10PW098  
ENGINE TYPE: TF

BYPASS RATIO: 6.2  
PRESSURE RATIO ( $\pi_{oo}$ ): 36.3  
RATED OUTPUT ( $F_{oo}$ ) (kN): 385.9

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{oo}$ (g/kN) or SN	3.7	32.3	75.5	8.8
AS % OF ORIGINAL LIMIT	19.0 %	27.3 %	67.1 %	53.8 %
AS % OF CAEP/2 LIMIT (NOx)			83.8 %	
AS % OF CAEP/4 LIMIT (NOx)			94.9 %	
AS % OF CAEP/6 LIMIT (NOx)			105.5 %	
AS % OF CAEP/8 LIMIT (NOx)			120.4 %	

### DATA STATUS

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

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
- 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)  
- OUT OF PRODUCTION  
- OUT OF SERVICE

### MEASURED DATA

MODE	POWER SETTING (% $F_{oo}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	3.557	0.02	0.28	51.39	7.51
CLIMB OUT	85	2.2	2.809	0.02	0.32	37.78	3.37
APPROACH	30	4.0	0.954	0.04	0.66	12.27	0.68
IDLE	7	26.0	0.322	2.16	21.12	3.99	0.36
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1251	1102	10923	26498	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE $D_p/F_{oo}$ (g/kN) or AVERAGE SN (MAX)				2.86	28.31	68.66	7.5
SIGMA ( $D_p/F_{oo}$ in g/kN, or SN)				-	-	-	-
RANGE ( $D_p/F_{oo}$ in g/kN, or SN)				-	-	-	-

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
STAGE BLEED 0 % CORE FLOW AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.1 - 102.5
TEMPERATURE (K)	275.5 - 302.5
ABS HUMIDITY (kg/kg)	0.0033 - 0.0112

### FUEL

SPEC	Jet A
H/C	1.85 - 1.92
AROM (%)	17

MANUFACTURER: Pratt & Whitney  
TEST ORGANIZATION: Pratt & Whitney  
TEST LOCATION: Middletown, CT  
TEST DATES: FROM 13 Apr 10 TO 13 Apr 10

### REMARKS

1. Data updated to reflect additional engine test as well as updated engine performance.
2. Additional engine tested to show CAEP/4 compliance.
3. Certification in accordance with Part III, Chapter 2, of Amendment 4 of ICAO Annex 16 Vol. II.
4. NOx levels in accordance with Part III, Chapter 2, 2.3.2 c) (CAEP/4)

If REVISED, this data supersedes databank UID  
Compliance with fuel venting requirements:

x ('x' if complies, PR if pre-regulation)