



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW307A BYPASS RATIO: 4.2  
 UNIQUE ID NUMBER: 8PW090 PRESSURE RATIO ( $\pi_{00}$ ): 20.21  
 ENGINE TYPE: MTF RATED OUTPUT ( $F_{00}$ ) (kN): 28.49

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	14.6	92.2	44.3	2.1
AS % OF ORIGINAL LIMIT	74.5 %	78.1 %	55.1 %	6.3 %
AS % OF CAEP/2 LIMIT (NOx)			68.9 %	
AS % OF CAEP/4 LIMIT (NOx)			69.3 %	
AS % OF CAEP/6 LIMIT (NOx)			69.5 %	
AS % OF CAEP/8 LIMIT (NOx)			73.3 %	

### 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

### MEASURED DATA

MODE	POWER SETTING	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
	(%F <sub>00</sub> )			HC	CO	NOx	
TAKE-OFF	100	0.7	0.328	0	0.44	19.11	1.15
CLIMB OUT	85	2.2	0.273	0	0.48	16.47	0.79
APPROACH	30	4.0	0.102	0	1.63	8.03	0.07
IDLE	7	26.0	0.045	5.13	33.99	2	1.85
LTO TOTAL FUEL (kg) or EMISSIONS (g)			144	357	2428	1193	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				12.5	85.3	41.9	1.85
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				3.6	9.9	1.6	0.24
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				8.8 - 17.4	76.9 - 99.1	40.4 - 44.1	1.5 - 2.1

### ACCESSORY LOADS

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

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.39 - 100.80
TEMPERATURE (K)	264 - 275
ABS HUMIDITY (kg/kg)	0.0018 - 0.0046

### FUEL

SPEC	Jet A-1
H/C	1.85 - 1.87
AROM (%)	20.8 - 22.6

MANUFACTURER: Pratt & Whitney Canada Inc.  
 TEST ORGANIZATION: PW307 Development Engineering  
 TEST LOCATION: Mississauga, Ontario, Canada  
 TEST DATES: FROM 30 Dec 04 TO 25 Jan 05

### REMARKS

1. P&WC ER 5597
2. Engines tested: CH0004/02, CH0005/01, CH0007/03
3. Type-Certification combustor

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

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