



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW307A  
UNIQUE ID NUMBER: 11PW100  
ENGINE TYPE: TF

BYPASS RATIO: 4.2  
PRESSURE RATIO ( $\pi_{oo}$ ): 20.21  
RATED OUTPUT ( $F_{oo}$ ) (kN): 28.49

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{oo}$ (g/kN) or SN	9.2	109.1	38.9	1.8
AS % OF ORIGINAL LIMIT	46.9 %	92.5 %	48.4 %	5.4 %
AS % OF CAEP/2 LIMIT (NOx)			60.5 %	
AS % OF CAEP/4 LIMIT (NOx)			60.8 %	
AS % OF CAEP/6 LIMIT (NOx)			60.9 %	
AS % OF CAEP/8 LIMIT (NOx)			64.4 %	

### DATA STATUS

- PRE-REGULATION  
x CERTIFICATION  
X 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)  
- 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	0.329	0	0.57	15.82	0.4
CLIMB OUT	85	2.2	0.274	0	0.72	13.67	0.33
APPROACH	30	4.0	0.102	0	3.37	6.78	0
IDLE	7	26.0	0.045	3.24	39.6	2.39	1.57
LTO TOTAL FUEL (kg) or EMISSIONS (g)			144	226	2878	1045	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	3
AVERAGE $D_p/F_{oo}$ (g/kN) or AVERAGE SN (MAX)				7.9	100.9	36.7	1.6
SIGMA ( $D_p/F_{oo}$ in g/kN, or SN)				0.9	1.5	1.1	0.6
RANGE ( $D_p/F_{oo}$ in g/kN, or SN)				6.8 - 9.1	99.4 - 102.9	35.5 - 38.1	1.1 - 2.5

### ACCESSORY LOADS

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

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	99.15 - 100.25
TEMPERATURE (K)	292 - 297
ABS HUMIDITY (kg/kg)	0.0078 - 0.0120

### FUEL

SPEC	Jet A-1
H/C	186 - 1.88
AROM (%)	19.0 - 21.9

MANUFACTURER: Pratt & Whitney Canada Inc.  
TEST ORGANIZATION: PW307 Development Engineering  
TEST LOCATION: Mississauga, Ontario, Canada  
TEST DATES: FROM 07 Aug 07 TO 02 Oct 07

### REMARKS

1. P&W ER 5606 revision AEngines tested: E9819/09, CH0004/13, CH0004/14
2. Weight reduced fuel nozzles and CCOCEngines CH499 onwards incorporate this combustion system and design
3. Defined by P&W Engineering Change D5216
4. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
5. NOx levels in accordance with Part III, Chapter 2, 2.3.2 d) (CAEP/6)

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

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