



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW4090
UNIQUE ID NUMBER: 10PW099
ENGINE TYPE: TF

BYPASS RATIO: 6
PRESSURE RATIO (π_{00}): 38.9
RATED OUTPUT (F_{00}) (kN): 408.3

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{00} (g/kN) or SN	1.2	18.4	83.8	12.3
AS % OF ORIGINAL LIMIT	6.3 %	15.6 %	71.2 %	76.5 %
AS % OF CAEP/2 LIMIT (NOx)			88.9 %	
AS % OF CAEP/4 LIMIT (NOx)			98.8 %	
AS % OF CAEP/6 LIMIT (NOx)			109.2 %	
AS % OF CAEP/8 LIMIT (NOx)			123.4 %	

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_{00})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	3.926	0.02	0.27	57.52	10.51
CLIMB OUT	85	2.2	2.996	0.02	0.31	41.17	4.29
APPROACH	30	4.0	0.979	0.04	0.55	12.74	0.7
IDLE	7	26.0	0.338	0.69	11.94	4.48	0.37
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1323	384	6592	31122	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE D_p/F_{00} (g/kN) or AVERAGE SN (MAX)				0.94	16.15	76.22	10.5
SIGMA (D_p/F_{00} in g/kN, or SN)				-	-	-	-
RANGE (D_p/F_{00} 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)