



# ICAO ENGINE nvPM EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW308C BS 1289 BYPASS RATIO (-): 4.1  
UNIQUE ID NUMBER: 01P14PW147 PRESSURE RATIO  $\pi_{co}$  (-): 21.1  
COMBUSTOR: TALON II  
ENGINE TYPE: MTF RATED OUTPUT  $F_{oo}$  (kN): 31.2

### REGULATORY DATA

CHARACTERISTIC VALUES:	$LTO_{mass}/F_{oo}$ (mg/kN)	$LTO_{num}/F_{oo}$ (particles/kN)	NVPM MASS CONCENTRATION ( $\mu\text{g}/\text{m}^3$ )
$LTO/F_{oo}$ AND MAX nvPM <sub>mass</sub>	2105.4	9.43E+15	4096
AS % OF CAEP/10 LIMIT	-	-	30.3
AS % OF CAEP/11 LIMIT (InP)	52.9	40.7	
AS % OF CAEP/11 LIMIT (NT)			

### MEASURED DATA

MODE	POWER SETTING (%F <sub>oo</sub> )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES*		NVPM MASS CONCENTRATION PEAK nvPM <sub>mass</sub> ( $\mu\text{g}/\text{m}^3$ )
				EI <sub>mass</sub> (mg/kg)	EI <sub>num</sub> (particles/kg)	
TAKE-OFF	100	0.7	0.361	600.0	1.67E+15	
CLIMB OUT	85	2.2	0.299	550.2	1.84E+15	
APPROACH	30	4.0	0.110	122.1	1.65E+15	
IDLE	7	26.0	0.045	444.9	2.15E+15	
LTO TOTAL (kg, mg, number of particles)			152	65577	2.94E+17	-
NUMBER OF ENGINES				3	3	3
NUMBER OF TESTS				1	1	1
AVERAGE $LTO/F_{oo}$ VALUES (mg/kN, particles/kN)				2105.4	9.43E+15	-
MAX EI VALUES (mg/kg, particles/kg) AND MAX MASS CONC. ( $\mu\text{g}/\text{m}^3$ )				600.0	2.15E+15	3182

\* Emissions Indices are corrected for thermophoretic loss and fuel hydrogen content

### DATA FOR EMISSIONS INVENTORIES (ESTIMATIONS FOR ENGINE EXIT PLANE VALUES)

MODE	POWER SETTING (%F <sub>oo</sub> )	CORRECTED EMISSIONS INDICES	
		EI <sub>mass,SL</sub> (mg/kg)	EI <sub>num,SL</sub> (particles/kg)
TAKE-OFF	100	696.0	3.61E+15
CLIMB OUT	85	649.3	4.17E+15
APPROACH	30	163.6	6.06E+15
IDLE	7	547.2	5.77E+15

### AMBIENT CONDITIONS

	From	To	FUEL	
BAROMETER (kPa)	99.9	100.3	HEAT OF COMBUSTION (MJ/kg)	43.06
TEMPERATURE (K)	290.4	296.6	HYDROGEN CONTENT (%mass)	13.46
HUMIDITY (kg water/kg dry air)	0.0100	0.0108	AROMATICS CONTENT (%vol)	21.8
			NAPHTHALENE CONTENT(%vol)	0.77
			SULPHUR CONTENT (ppm by mass)	27

MANUFACTURER: Pratt & Whitney Canada  
TEST ORGANIZATION: Pratt & Whitney Canada  
TEST LOCATION: Mississauga, Ontario, Canada  
TEST DATES: 06/10/2016

### REMARKS

1. Data acquired using procedures and systems prescribed in Annex 16 Volume II, Amd. 9
2. Thermophoretic correction applied as described in Annex 16 Volume II, Amd. 9, Appendix 7, Section 6.2.1
3. Data corrected for fuel hydrogen content according to CAEP11.WP91 App.A
4. Export Classification: Technical Data: Yes / ECL: NSR / ECCN: N/A / P-ECCN: 9E991
5. Data reported in ER9043 Part II Rev. C

\*\* DATA SUPERSEDED \*\*

SEE FOLLOWING UID FOR REVISED DATA:

03P14PW194