



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW1521GA BYPASS RATIO: 11.4  
UNIQUE ID NUMBER: 04P20PW198 PRESSURE RATIO ( $\pi_{co}$ ): 35.1  
COMBUSTOR: TALON X, Block-C  
ENGINE TYPE: TF RATED THRUST ( $F_{eo}$ ) (kN): 97.7

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>eo</sub> (g/kN) or SN	0.3	28.4	37.2	3.1
AS % OF ORIGINAL LIMIT	2.0	24.0	34.0	13.0
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			42.0	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			48.0	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			54.0	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			62.0	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### 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)

- OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER	TIME	FUEL FLOW	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
	SETTING (%F <sub>eo</sub> )	(minutes)	(kg/s)	HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.690	0.00	0.00	22.10	2.4
CLIMB OUT	85	2.2	0.580	0.00	0.00	18.10	1.5
APPROACH	30	4.0	0.210	0.10	2.50	10.10	0.8
IDLE	7	26.0	0.070	0.10	19.30	5.60	0.5
LTO TOTAL FUEL (kg) or EMISSIONS (g)			265	20	2260	3139	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>eo</sub> (g/kN) or AVERAGE SN (MAX)				0.2	23.1	32.1	2.4
SIGMA (D <sub>p</sub> /F <sub>eo</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>eo</sub> in g/kN, or SN)				0.2-0.3	22.9-23.4	31.8-32.3	2.1-2.8

### ACCESSORY LOADS

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

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	102-103.3
TEMPERATURE (K)	272-278.1
ABS HUMIDITY (kg/kg)	0.00122-0.00221

### FUEL

SPEC	Jet A
H/C	1.94
AROM (%)	17.8-18.4

MANUFACTURER: Pratt & Whitney  
TEST ORGANIZATION: Pratt & Whitney  
TEST LOCATION: Mirabel Aerospace Centre - Quebec  
TEST DATES: 25/03/2018-26/03/2018

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

1. Data from Certification Report PWA-11600
2. Block C combustor
3. Certification in accordance with Part III, Chapter 2, of Amendment 8 of ICAO Annex 16 Vol. II.
4. NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements:

x ('x' if complies, 'PR' if pre-regulation, '- ' if information is not available)