



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW1133GA-JM  
UNIQUE ID NUMBER: 01P22PW166  
COMBUSTOR: TALON X, Block-D  
ENGINE TYPE: TF  
BYPASS RATIO: 11.6  
PRESSURE RATIO ( $\pi_{00}$ ): 38.1  
RATED THRUST ( $F_{00}$ ) (kN): 147.3

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	0.7	29.7	41.6	11.1
AS % OF ORIGINAL LIMIT	3.7	25.1	35.8	52.3
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			44.8	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			50.0	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			55.4	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			62.8	

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 SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
TAKE-OFF	100	0.7	1.023	0.07	0.24	28.88	8.7
CLIMB OUT	85	2.2	0.839	0.07	0.26	22.01	7.3
APPROACH	30	4.0	0.278	0.06	2.87	10.79	0.3
IDLE	7	26.0	0.099	0.36	21.55	5.74	0.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			375	70	3558	5284	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				4	4	4	4
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				0.5	24.2	35.9	8.7
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.5-102.2
TEMPERATURE (K)	279.6-300.8
ABS HUMIDITY (kg/kg)	0.00358-0.01201

### FUEL

SPEC	Jet A
H/C	1.91-1.93
AROM (%)	16.3-16.8

MANUFACTURER: Pratt & Whitney  
TEST ORGANIZATION: Pratt & Whitney  
TEST LOCATION: W. Palm Beach, FL  
TEST DATES: 18/01/2020-21/01/2020

### 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-12090
2. 1 engine tested
3. TALON-X, Block-D combustor
4. Certification in accordance with ICAO Annex 16 Vol. II. 4th Edition, Part III, Chapter 2.

Compliance with Fuel Venting requirements:

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