

MASS PROPERTIES OF - WT10 ASSY 42' STRAIGHT SECTION

MASS = 942.43 KILOGRAMS

CENTER OF MASS: (CENTIMETERS)

X = -1.88
Y = 22.72
Z = -24.54

PRINCIPAL AXES OF INERTIA AND PRINCIPAL MOMENTS OF INERTIA: (KILOGRAMS * SQUARE CENTIMETERS)
TAKEN AT THE CENTER OF MASS.

IX = (-0.61, -0.18, 0.77) PX = 4455104.65
IY = (0.79, -0.01, 0.62) PY = 8085357.84
IZ = (-0.11, 0.98, 0.15) PZ = 10209076.93

MOMENTS OF INERTIA: (KILOGRAMS * SQUARE CENTIMETERS)

TAKEN AT THE CENTER OF MASS AND ALIGNED WITH THE OUTPUT COORDINATE SYSTEM.

LXX = 6766982.21 LXY = 621713.35 LXZ = -1672383.92
LYX = 621713.35 LYY = 10018164.19 LYZ = -821517.98
LZX = -1672383.92 LZ Y = -821517.98 LZZ = 5964393.03

MOMENTS OF INERTIA: (KILOGRAMS * SQUARE CENTIMETERS)

TAKEN AT THE OUTPUT COORDINATE SYSTEM.

IXX = 7820701.33 IXY = 581432.52 IXZ = -1628873.11
IYX = 581432.52 IYY = 10588918.53 IYZ = -1346814.11
IZX = -1628873.11 IZY = -1346814.11 IZZ = 6454030.81

3 BLADE, UPWIND, FX63-137 AIRFOIL, 7:1 TIP SPEED RATIO

DIAMETER: 22 FEET-6.7M, OPTIMUM TWIST & TAPER

SWEPT AREA: 380 SF/35.25 SM

RPM: 270 PEAK, 250-270 GOVERNOR ACTIVE

BLADE: GLASS FIBER ENGINEERED PLASTIC, INJECTION MOLDED

WIND TURBINE FRONTAL AREAS

RAIL & CARRIAGE ASSY = 3.142 m² FLAT PLATE, 1.618 m² CYLINDER

TURBINE PROPELLOR = 1.399 m² FLAT PLATE (BLADES ONLY), 35.303 m² SWEPT AREA

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MM
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC
TOLERANCING PER:

 WWW.WINDULAR.COM

TITLE:

WT-10

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MATERIAL

FINISH

DO NOT SCALE DRAWING

SIZE
B

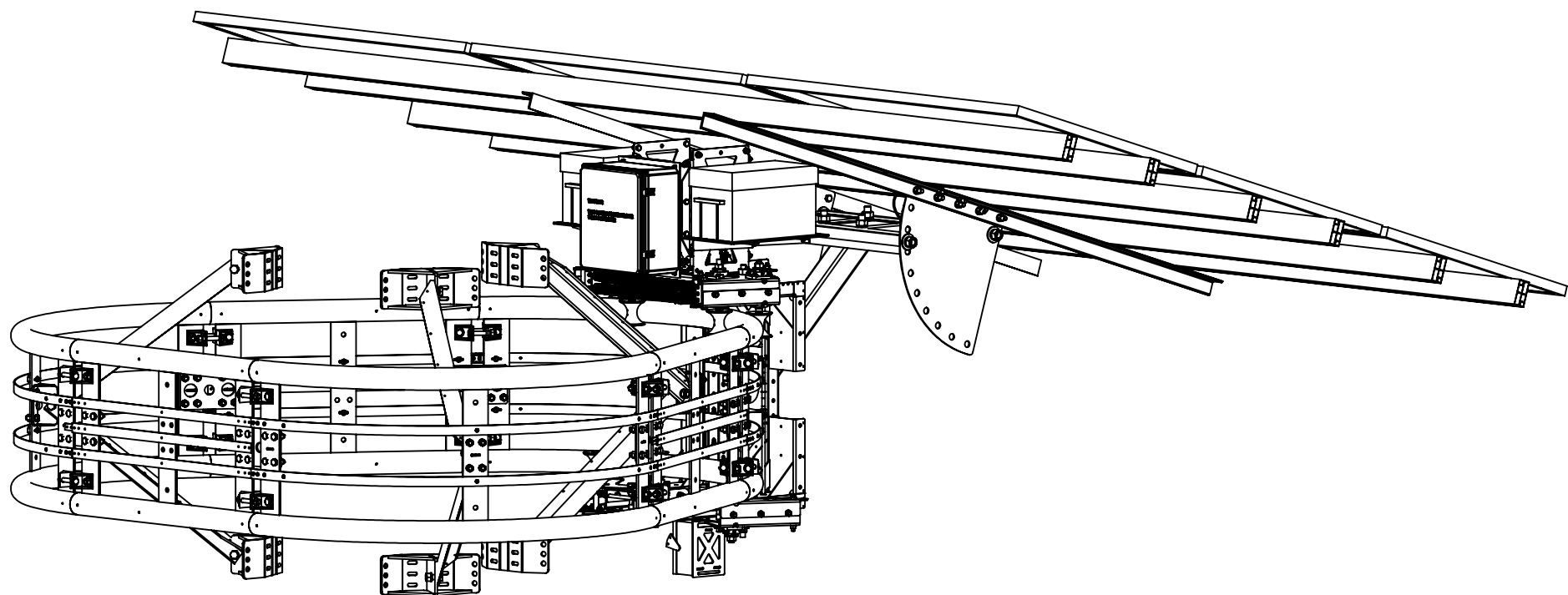
DWG. NO.
WT10-ST1 ENG INFO
GENERIC

REV
1.2

SCALE: 1:100

WEIGHT: 942.43

SHEET 1 OF 2



MASS PROPERTIES OF ST-1 42" STRAIGHT SECTION

MASS = 969.30 KILOGRAMS

CENTER OF MASS: (CENTIMETERS)

X = 9.76
Y = 45.40
Z = -39.45

PRINCIPAL AXES OF INERTIA AND PRINCIPAL MOMENTS OF INERTIA: (KILOGRAMS * SQUARE CENTIMETERS)
TAKEN AT THE CENTER OF MASS.

IX = (-0.61, -0.18, 0.77) PX = 5960758.68
IY = (0.79, -0.00, 0.62) PY = 13084980.91
IZ = (-0.11, 0.98, 0.14) PZ = 16525157.76

MOMENTS OF INERTIA: (KILOGRAMS * SQUARE CENTIMETERS)

TAKEN AT THE CENTER OF MASS AND ALIGNED WITH THE OUTPUT COORDINATE SYSTEM.

LXX = 10509719.61 LXY = 1153207.07 LXZ = -3289544.00
LYX = 1153207.07 LYY = 16178071.54 LYZ = -1488699.96
LZX = -3289544.00 LZ Y = -1488699.96 LZZ = 8883106.20

MOMENTS OF INERTIA: (KILOGRAMS * SQUARE CENTIMETERS)


TAKEN AT THE OUTPUT COORDINATE SYSTEM.

IXX = 14015896.28 IXY = 1582720.36 IXZ = -3662815.69
IYY = 1582720.36 IYZ = 17779078.62 IYZ = -3224663.54
IZX = -3662815.69 IZY = -3224663.54 IZZ = 10972986.06

SOLAR TRACKER FRONTAL AREAS

RAIL & CARRIAGE ASSY = 2.001 m² FLAT PLATE, 1.030 m² CYLINDER

9 PANEL SOLAR CELL ARRAY = 15.047 m² FLAT PLATE @180° VERTICAL, 4.815 m² PROJECTED AREA @ 17° FROM HORIZONTAL

UNLESS OTHERWISE SPECIFIED:		 WWW.WINDULAR.COM	
DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		TITLE: ST-1	
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL	SIZE	DWG. NO.	REV
FINISH	B	WT10-ST1 ENG INFO GENERIC	1.2
DO NOT SCALE DRAWING	SCALE: 1:100	WEIGHT: 969.30	SHEET 2 OF 2

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