

8

7

6

5

4

3

2

1

NOTES UNLESS SPECIFIED OTHERWISE:

1. DIMENSIONS ARE FOR INSTALLATION PURPOSES ONLY

2. THIS DRAWING SHALL NOT BE USED FOR FABRICATION.

3. CAUTION: THIS UNIT CONTAINS DEVICES SUSCEPTIBLE TO DAMAGE BY ELECTROSTATIC DISCHARGE. HANDLE PER THE ESD PROCEDURES OF IPC-A-610

KC-1

4. WEIGHT 9.00 LBS (4.08 KG) MAX.

5

THIS UNIT SHALL BE MOUNTED ONLY IN A 2MCU TRAY PER ARINC 600 WITH MATING CONNECTOR, RADIALL P/N: NSXN2P22IS0908 OR EQUIVALENT

6

SEE TABLE 3 FOR ENVIRONMENTAL AND ELECTRICAL CHARACTERISTICS.

THE HPA SHALL MEET THE REQUIREMENTS OF RTCA/DO-160G.

7. ELECTRICAL:

KC-2

NOMINAL INPUT SUPPLY VOLTAGE: 115VAC
POWER CONSUMPTION:210W TYPICAL (250W MAX.)

POWER DISSIPATION:180W TYPICAL (210W MAX.)
POWER FACTOR: 0.985 MINIMUM LEADING AT 400Hz
CURRENT DRAW: 1A TYP/2.2A MAX AT 115 VAC.

8. APPROXIMATE CENTER OF GRAVITY IS SHOWN BY

9. MATERIAL (CHASSIS): ALUMINUM ALLOY 6061-T651 PER AMS4027, OR 6061-T651 PER AMS-QQ-A-20078

(COVER) ALUMINUM ALLOY 5052-H32 PER SAE AMS-QQ-A-250 ASTM B209, SAE AMS-4016 (.063 THICK)

FINISH: CHASSIS/COVER
POWDER COATING, PRISM GRAPHITE LOW GLOSS, PA-0191-LT
CHEMICAL CONVERSION COATING, NO HEXAVALENT CHROMIUM, SurTec650V PER MIL-DTL-5541, TYPE II, CLASS 3

10. N/A

11

PRIMARY AIRFLOW DIRECTION SHOWN. DRAW-THROUGH DIRECTION OPPOSITE.

12. COOLING REQUIREMENTS:

FOR INSTALLATION WITHIN PRESSURE VESSEL

- DRAWN THROUGH AMBIENT AIRFLOW OF 521 LPM (18.4 CFM) AT -55°C TO +70°C (-67F TO +158F)

- PRESSURE DROP AT SEA LEVEL AND 40°C (104°F)
50±30 PA (0.20±0.12 IN H₂O), 47 PA (0.19 IN H₂O) TYPICAL MEASURED

FOR INSTALLATION WITHIN PRESSURE VESSEL

- BLOWN THROUGH CONDITIONED AIRFLOW OF 521 LPM (18.4 CFM) AT -55°C TO +55°C (-67F TO +131F)

- PRESSURE DROP AT SEA LEVEL AND 40°C (104°F)
50±30 PA (0.20±0.12 IN H₂O)

FOR INSTALLATION OUTSIDE PRESSURE VESSEL

- BLOWN THROUGH AMBIENT AIRFLOW OF 1183 LPM (41.8 CFM) AT -55°C TO +70°C (-67F TO +158F)

- PRESSURE DROP AT SEA LEVEL AND 40°C (104°F)
250±50 PA (1.0±0.2 IN H₂O)

13. INTERNAL FAN USED DURING LOSS OF COOLING CONDITION:

- FLOW RATE 420 LPM (14.83 CFM) AT SEA LEVEL AND 20°C (68°F)

- FAN FILTRATION REQUIREMENTS: NONE

14

UPON CAN-TSO CERTIFICATION, THE HPA SHALL HAVE THE FOLLOWING MARKING:

CAN-TSO-C159d (Class/Subclass See IM).

15

THIS AREA FREE OF PAINT

16

ELECTROSTATIC SENSITIVE DEVICE (ESD) LABEL.

17. OVER TEMPERATURE SHUTDOWN THRESHOLD: 105°C (221°F)

18

HOT SURFACES WARNING LABEL.

19

FCC APPROVAL LABEL.

20

TAMPERPROOF LABEL.

21

250V WARNING LABEL.

22

SHADED AREA INDICATES EXTENDED PART IN POLARIZING INSERTS

23

ELECTRICAL BONDING SHALL BE THROUGH

ARINC 600 CONNECTOR SHELL. BONDING TEST POINT AVAILABLE ON FRONT PANEL.
DC BONDING RESISTANCE SHALL BE 5.0 MILLIOHMS OR LESS.

24

N/A

25

ASTERISK INDICATES CATEGORIES THAT ARE EXTENDED.

26

INTERNAL FAN AIRFLOW DIRECTION FOR

LOSS OF AIRPLANE COOLING CONDITION

27. UPON CERTIFICATION, ISEDC APPROVAL LABEL WILL BE ADDED.

TABLE 1: HPA ASSEMBLY PART NUMBER

PART NUMBER	DESCRIPTION
90404514-000R	HPA ASSEMBLY, RED LABEL

TABLE 2: HPA ASSEMBLY CONNECTOR IDENTIFICATION

REF DESIGNATOR	PART NUMBER	MATING CONNECTOR	REMARKS
JI	HON 50054601 RADIALL NSXF2R221Y0908	RADIALL NSXN2P22IS0908	JI-A TOP INSERT ARRANGEMENT IC71 (70X #22 CONTACTS, 1X SIZE 1 COAX)
			JI-B MIDDLE INSERT ARRANGEMENT 71C1 (70X #22 CONTACTS, 1X SIZE 1 COAX)
			JI-C BOTTOM INSERT ARRANGEMENT I3C2 (4X #20 CONTACTS, 3X #16 CONTACTS, 4X #12 CONTACTS, 2X #5 CONTACTS)

TABLE 3: SYSTEM REQUIREMENTS

RTCA/DO-160G SECTION	NAME	CATEGORY
4	TEMPERATURE AND ALTITUDE	F2 (COOLANT BLOWN)
4	TEMPERATURE AND ALTITUDE	A2 (COOLANT DRAWN)
4	TEMPERATURE AND ALTITUDE	A2 (COOLANT BLOWN)
4	DECOMPRESSION/OVERPRESSURE	A2
4	LOSS OF COOLING	Z
5	TEMPERATURE VARIATION	A
6	HUMIDITY	B
7	OPERATIONAL SHOCKS AND CRASH SAFETY	D,B
8	VIBRATION	S CURVE: C R CURVE: C1
9	EXPLOSION PROOFNESS	E
10	WATERPROOFNESS	Y
11	FLUIDS SUSCEPTIBILITY	F
12	SAND AND DUST	S
13	FUNGUS RESISTANCE	F
14	SALT SPRAY	S
15	MAGNETIC EFFECT	Z
16	POWER INPUT	A(WF)HZPI*
17	VOLTAGE SPIKE	A*
18	AUDIO FREQUENCY CONDUCTED SUSCEPTIBILITY	R(WF)*
19	INDUCED SIGNAL SUSCEPTIBILITY	CWX*
20	RADIO FREQUENCY SUSCEPTIBILITY (RADIATED AND CONDUCTED)	RR
21	EMISSION OF RADIO FREQUENCY ENERGY	M*
22	LIGHTNING INDUCED TRANSIENT SUSCEPTIBILITY	A3J3L3 B2H2L2
23	LIGHTNING DIRECT EFFECTS	XXXX
24	ICING	X
25	ELECTROSTATIC DISCHARGE (ESD)	A
26	FIRE, FLAMMABILITY	C

OUTLINE & INSTALLATION

ANGULAR DIMENSIONS	XX°	XX°XX'	UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES AND TOLERANCES APPLY AS SHOWN BELOW.	FIRST USED ON	1CD OR OUTLINE NO 90405332
ALL ANGLES	±15°	±5°		NEXT ASSY 90404514	DRAWING TYPE OUTLINE
SURFACE ROUGHNESS	MICROINCH 63	MICRON 1.6	INCHES		
INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994	UNTOLERANCED DIMENSION	DECIMAL PLACES		DRAWN BY G. UFFELMAN	
		XX	XXX	CHECKED BY N. TROJANOWSKI	
		BELOW 6	±.01 ±.005	R. GRANLUND	
		6 TO 24	±.03 ±.010	P. DEWAN	
THE INFORMATION CONTAINED HEREIN IS PROPRIETARY TO COM DEV LTD AND IS TO BE USED BY THE RECIPIENT SOLELY FOR THE PURPOSE FOR WHICH IT IS SUPPLIED. IT SHALL NOT BE DISCLOSED, IN WHOLE OR IN PART, TO ANY OTHER PARTY WITHOUT COM DEV LTD PRIOR PERMISSION.	UNTOLERANCED DIMENSION	MM		J. BRADIC	
		DECIMAL PLACES		APPROVED S. MCGINNIS	
		XX	XXX	AUTHORIZED FOR PRODUCTION	
		BELOW 152.4	±.3 ±.13	M. MAHEU	
PROJECTION	152.4 TO 609.6	±.8 ±.25			
	OVER 609.6	±1.3 ±.51			

SIZE	FSCM NO	DRAWING NO	REV
D	38473	90405332	M
SCALE 0.750		SHEET 1 OF 3	

COM DEV®
155 SHELDON DRIVE
CAMBRIDGE, ONTARIO
CANADA N1R 7H6

OUTLINE & INSTALLATION
ASPIRE 400
HPA

Windchill

MODEL FILE 90405332-HPA-OUTLINE In Work P.1

DRAWING FILE 90405332 In Work P.3

REV

DESCRIPTION (ECN NO)

IMPL BY

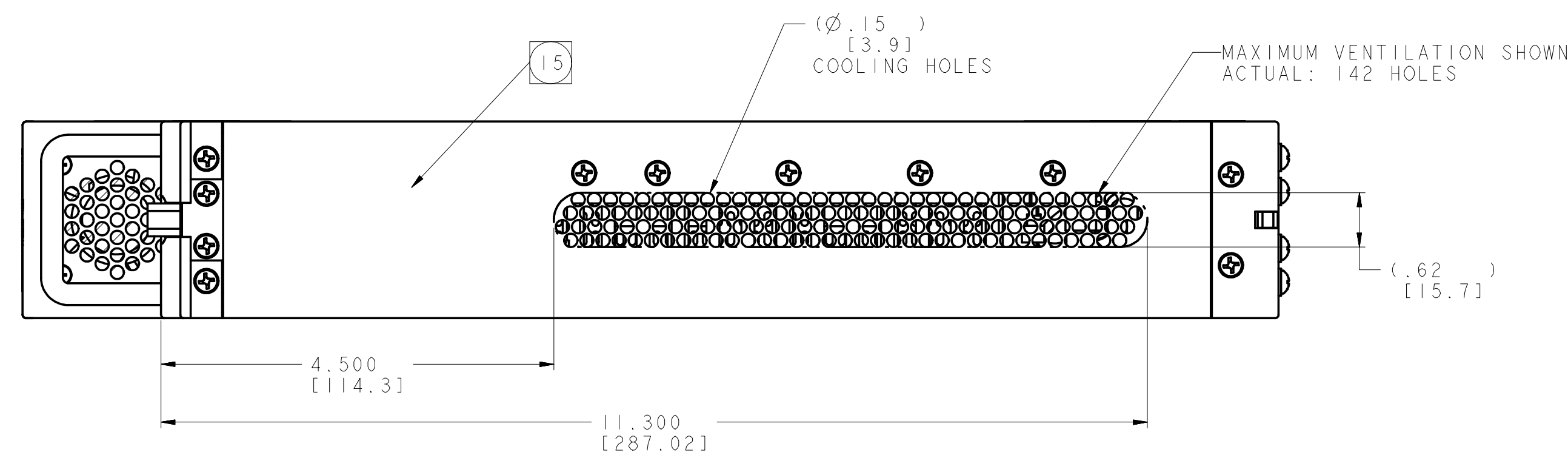
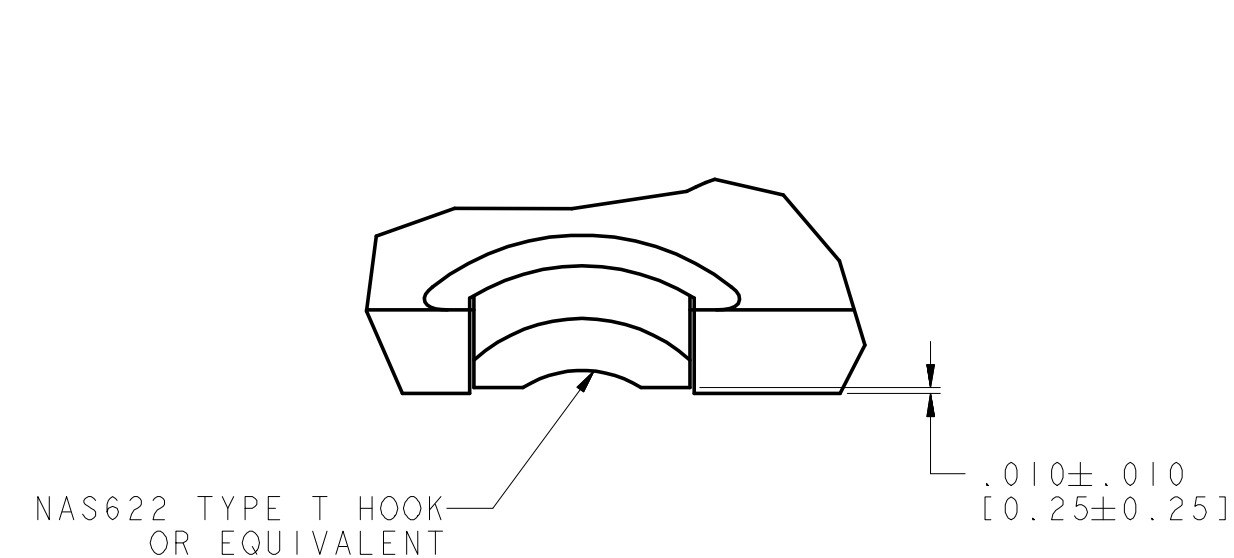
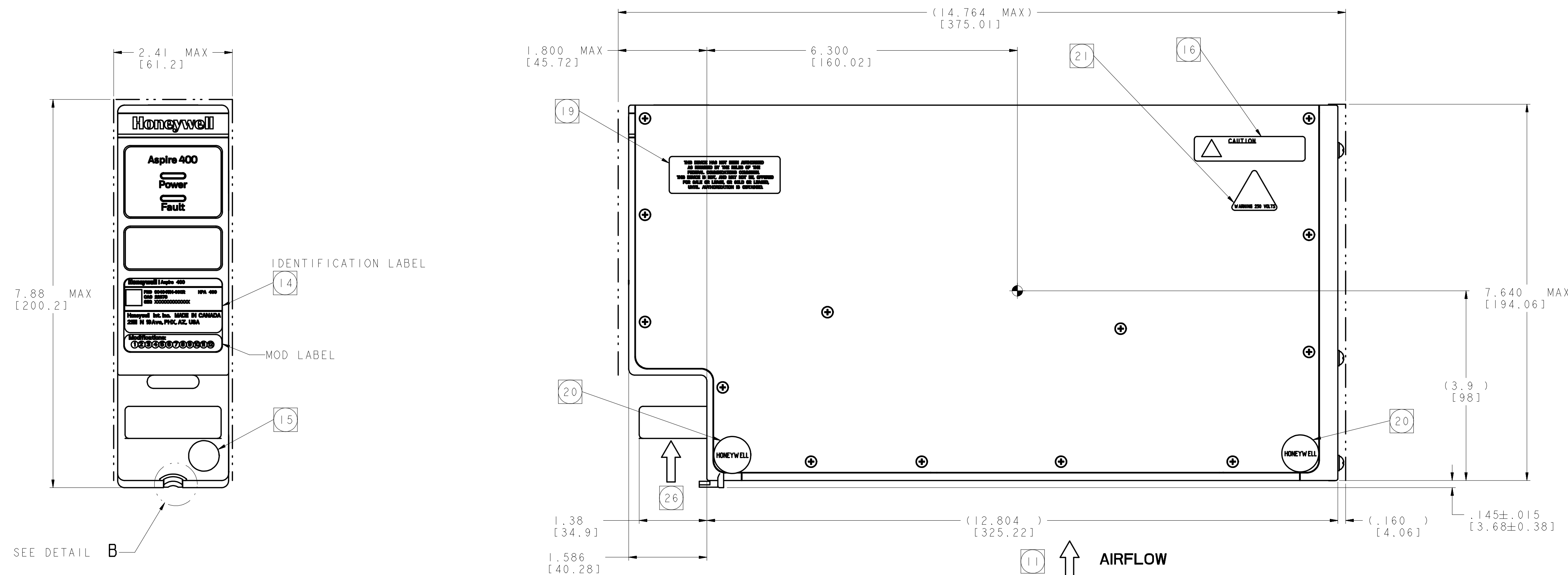
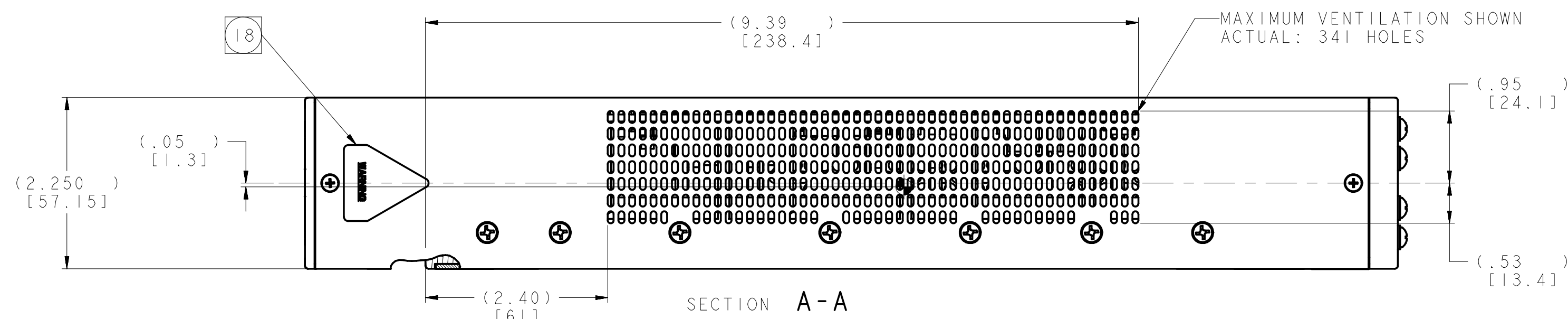
APVD BY

DATE

M	ECN NO 8016879	GWU	SL	200305
L	ECN NO 8016292	GWU	SL	200129
K	ECN NO 8014712	GWU	SL	191010
J	ECN NO 8013508	GWU	KF	190701
H	ECN NO 8012299	GWU	KF	190528
G	ECN NO 8011668	GWU	KF	190425
F	ECN NO 8009401	GWU	KF	181214
E	ECN NO 8008162	GWU	KF	181015
D	ECN NO 8007159	GWU	KF	180808
C	ECN NO 8006153	GWU	KF	180612
B	ECN NO 8005972	GWU	KF	180604
A	ECN NO 8005501	GWU	KF	180508

PRODUCTION - Released - 10 Mar 2020 14:22:29 UTC

REF: ECN-8016879



CURRENT DESIGN ACTIVITY CAGE CODE 38101 HONEYWELL - CAMBRIDGE
--

	SEE SHEET 1			
REV	DESCRIPTION (ECN NO)	IMPL BY	APVD BY	DATE

REVISIONS



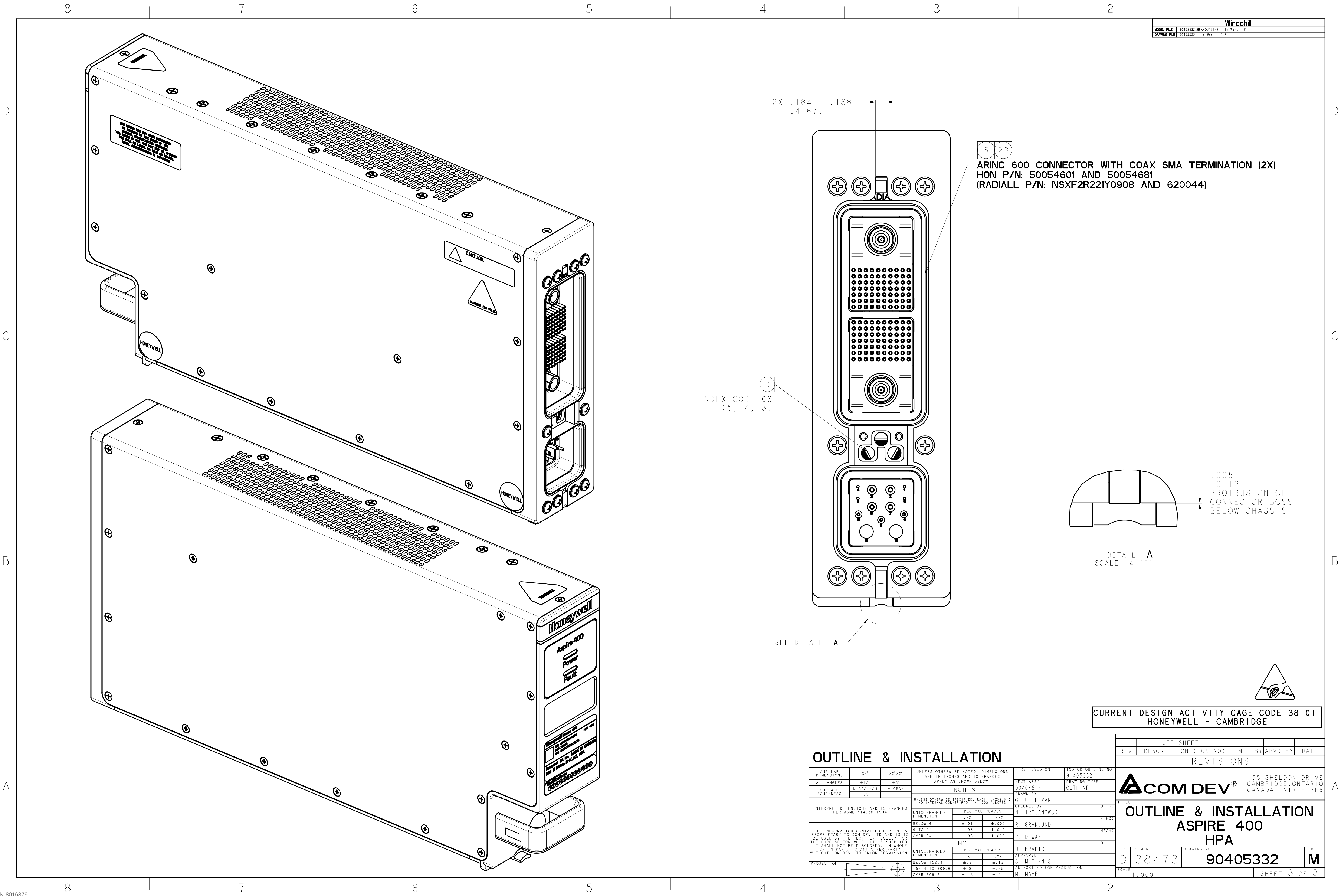
TITLE	OUTLINE & INSTALLATION
DATE	ASPIRE 400
BY	HPA
CHKD	
APP'D	
REV	

SIZE	FSCM NO	DRAWING NO	REV
D	38473	90405332	M
SCALE		SHEET 2 OF 3	
0.750			

OUTLINE & INSTALLATION

ANGULAR DIMENSIONS	X°	X°X'X''	UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES AND TOLERANCES APPLY AS SHOWN BELOW.	
ALL ANGLES	±1/2°	±5'	INCHES	
SURFACE ROUGHNESS	MICRONIN	MICRON		
	63	1.6		
INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994			UNLESS OTHERWISE SPECIFIED, RADIUS XXXX NO INTERNAL CORNER RADIUS R.003 ALLOWED	
			UNTOLERANCED DIMENSION	DECIMAL PLACES
			BELOW 6	±.01 ±.00
			6 TO 24	±.03 ±.01
			OVER 24	±.05 ±.02
			MM	
			UNTOLERANCED DIMENSION	DECIMAL PLACES
			BELOW .02	±.00 ±.00
			.02 TO .009 6	±.00 ±.00
			.009 6 TO .003 15	±.00 ±.00
			.003 15 TO .001 25	±.00 ±.00
			OVER .001 25	±.00 ±.00
PROJECTION				

ONS	FIRST USED ON	OUTLINE NO
		90405332
	NEXT ASSY	DRAWING TYPE
	90404514	OUTLINE
	DRAWN BY	
	G. UFFELMAN	
010	CHECKED BY	(CP
ED	N. TROJANOWSKI	
X		(PR
05	P. GRANLUND	
0		(OU
10	R. DEWAN	
		(C.
	J. BRADIC	
	APPROVED	
3	S. McGINNIS	
	AUTHORIZED FOR PRODUCTION	
1	M. MAHEU	



CURRENT DESIGN ACTIVITY CAGE CODE 38101
HONEYWELL - CAMBRIDGE

OUTLINE & INSTALLATION

ANGULAR DIMENSIONS			XX°	XX°XX'	UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES AND TOLERANCES APPLY AS SHOWN BELOW.	FIRST USED ON	TCD OR OUTLINE NO	
ALL ANGLES			±15°	±5°		NEXT ASSY	90405332	
SURFACE ROUGHNESS			MICROINCH	MICRON		90404514	DRAWING TYPE	
			63	1.6	INCHES	DRAWN BY	OUTLINE	
INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994			UNLESS OTHERWISE SPECIFIED: RADII: .XXX; DIA NO INTERNAL CORNER RADII: < .003 ALLOWED			G. UFFELMAN		
			UNTOLERANCED DIMENSION			CHECKED BY	(D.F.T.)	
						N. TROJANOWSKI	(ELECT.)	
THE INFORMATION CONTAINED HEREIN IS PROPRIETARY TO COM DEV LTD AND IS TO BE USED BY THE RECIPIENT SOLELY FOR THE PURPOSE FOR WHICH IT IS SUPPLIED. IT SHALL NOT BE DISCLOSED, IN WHOLE OR IN PART, TO ANY OTHER PARTY WITHOUT COM DEV LTD PRIOR PERMISSION.			DECIMAL PLACES			R. GRANLUND	(MECH.)	
			.XX .XXX					
			BELOW 6			±.01 ±.005	P. DEWAN	(D.F.T.)
			6 TO 24			±.03 ±.010		
			OVER 24			±.05 ±.020		
			MM			J. BRADIC		
PROJECTION			UNTOLERANCED DIMENSION			APPROVED		
			.XX .XX			S. MCGINNIS		
			BELOW 152.4			±.3 ±.13		
			152.4 TO 609.6			±.8 ±.25		
			OVER 609.6			±1.3 ±.51		
						AUTHORIZED FOR PRODUCTION		
						M. MAHEU		

REV	DESCRIPTION (ECN NO.)	IMPL BY	APVD BY	DATE
SEE SHEET 1				

REVISIONS

COM DEV 155 SHELDON DRIVE
CAMBRIDGE, ONTARIO
CANADA N1R 7H6

OUTLINE & INSTALLATION
ASPIRE 400
HPA

SIZE	FSCM NO	DRAWING NO	REV
D	38473	90405332	M
SCALE		SHEET 3 OF 3	
1.000			