Purchase Specifications for NuAire LABGARD ES (Energy Saver)
NU-S610 Dual Access Biological Safety Cabinet

The intent herein is to provide a concise statement of requirements for a quality Class II, Type A2 Laminar Airflow Biological Safety Cabinet which may be used to augment your purchase request/order.

The LABGARD ES™ NU-S610 meets the performance requirements of NSF/ANSI 49. Your confidence is well placed in a Biological Safety Cabinet that meets NSF Standard.

NuAire sales representatives will be pleased to explain the importance of the performance and control affected by each of the following requirements. The NuAire LABGARD ES, NU-S610 is a special dual access BSC, which conforms to specific customer requirements beyond the basic requirements as stated in the following SPECIFICATION.

1. Dimensions Inches (mm)

Overall Dimensions	**NU-S610-600**	*** NU-S610-500**	*** NU-S610-400**
Width (W)	79 (2007)	67 (1702)	59 (1499)
Depth (D)	32-5/8 (829)	32-5/8 (829)	32-5/8 (829)
Height (H)	83 (2108)	83 (2108)	83 (2108)
Interior Dimensions			
Width (W)	64 (1626)	52 (1321)	44 (1118)
Depth (D)	28-1/4 (718)	28-1/4 (718)	28-1/4 (718)
Height (H)	25 (635)	25 (635)	25 (635)

* NU-S610-400/-500 are available as non-standard custom product and will not bear the UL label.

2. Cabinet shall provide airflows & biological safety performance as specified.
   - Cabinet shall provide biological containment protection for both operator and product proven by an actual test, (e.g. test conducted by NuAire) and routinely validated by NuAire.
   - Cabinet shall be constructed from a combination of 16GA, Type 304 stainless steel for the side plenums and workzone and 16GA CRS for the top filter and base blower enclosures.
   - Cabinet shall be easily fumigated employing an established procedure such as that recommended by NIH or NSF.
   - Supply HEPA filter shall be of full cabinet work zone width and depth; work zone below supply HEPA shall be of fixed cross-sectional area.
   - Supply HEPA filter shall be protected by a perforated metal diffuser covering the entire top of the work zone.
   - Air velocity from the supply filter shall average 70 to 80 FPM (.35 to .41 m/s) with no single point outside the 20% of average range measured in a horizontal plane defined by bottom edge of window.
   - Work access opening shall be 12 inches (305mm) high.
     Average inflow velocity using calculated exhaust method shall nominally be 105 LFPM (.53 m/s).

3. The cabinet shall be ergonomically designed for maximum user comfort and adjustability to meet the requirements of the American Disabilities Act (ADA.)
   - Front Access Airfoil (1 inch (25mm) width with 1/2 inch (12mm) recessed front grill) designed for arm rest comfort while maintaining containment performance.
   - Maximum visibility into cabinet workzone shall be at least 25 inches (635mm) from front access airfoil to supply filter diffuser.
   - Cabinet shall have a centrally located instrument panel within the control center that is easily serviced with quick disconnects.
   - The cabinet shall have a hinged window providing a 12 inch (305mm) access opening.
   - Cabinet shall have a large worktray removable with coved corners for easy cleaning.

4. The cabinet shall have all positive pressure plenums surrounded by a vacuum relative to the room (the LABGARD ES ™ employs the HEPEX™ Zero Leak Airflow System).

5. Electrical power shall be supplied with a 12-foot (2.5m), 3-wire cord with plug. Other electrical connections are available per customer specifications (i.e. junction box). Electrical supply should be 115 VAC, 60 Hz at 30 amps protected with thermal circuit breaker from distribution panel.

6. The cabinet shall use a DC ECM Motor with an optimally determined forward-curved fan for each model size/width to maximize both energy efficiency and filter loading capacity.

7. The cabinet shall have two internal electrical circuits; one for blower/lights and one for the outlets. Each circuit shall be protected with a circuit breaker located in the Control Center.

8. The cabinet shall be listed to meet the requirements of both U.S. and Canada for electrical/mechanical integrity.

9. Total cabinet airflow shall be controlled via a solid-state DC Motor Controller that provides automatic compensation (constant volume control) for both filter loading and line voltage variances.

10. Balancing of cabinet workzone downflow (recycling flow) to exhaust flow shall be accomplished with internal exhaust flow dampers, externally adjustable. The damper access plugs shall be under a vacuum relative to the room.

11. The cabinet shall be easily transportable through a 36 inch (914mm) wide, 84 inch (2134mm) high door without disassembly.

12. Fluorescent lighting shall be internal mounted and provide 90 (968) to 120 (1291) foot-candles (LUX) on work surface. The ballast to be electronic containing thermal protection with automatic reset.

13. Cabinet shall have minihelic gauges to display pressure drop over the supply HEPA filters.

14. Cabinet shall come standard with two outlets with drip proof covers on side walls. (3 Amp total load connected)

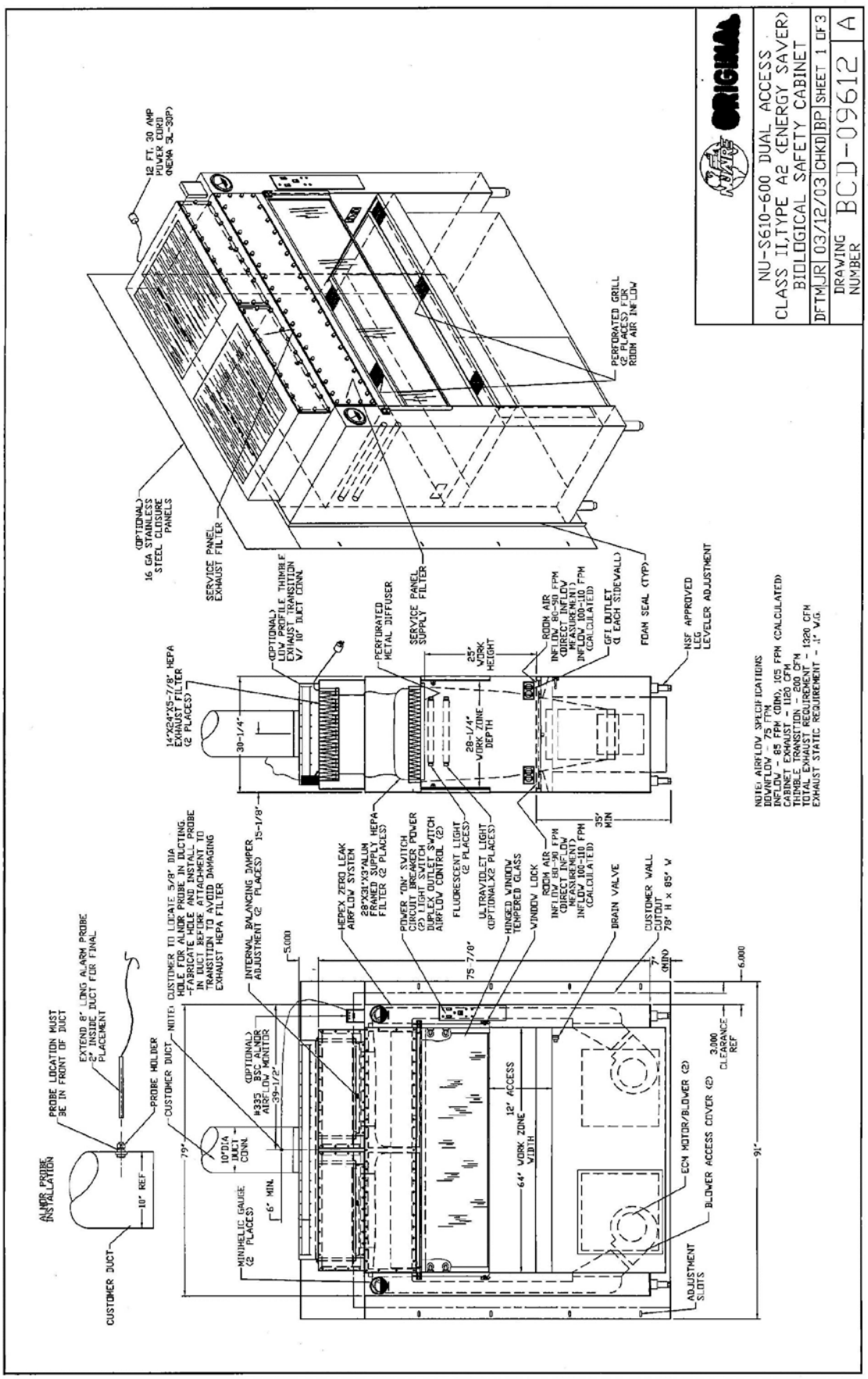
15. Cabinet heat rejected 2750 BTU's per hour.

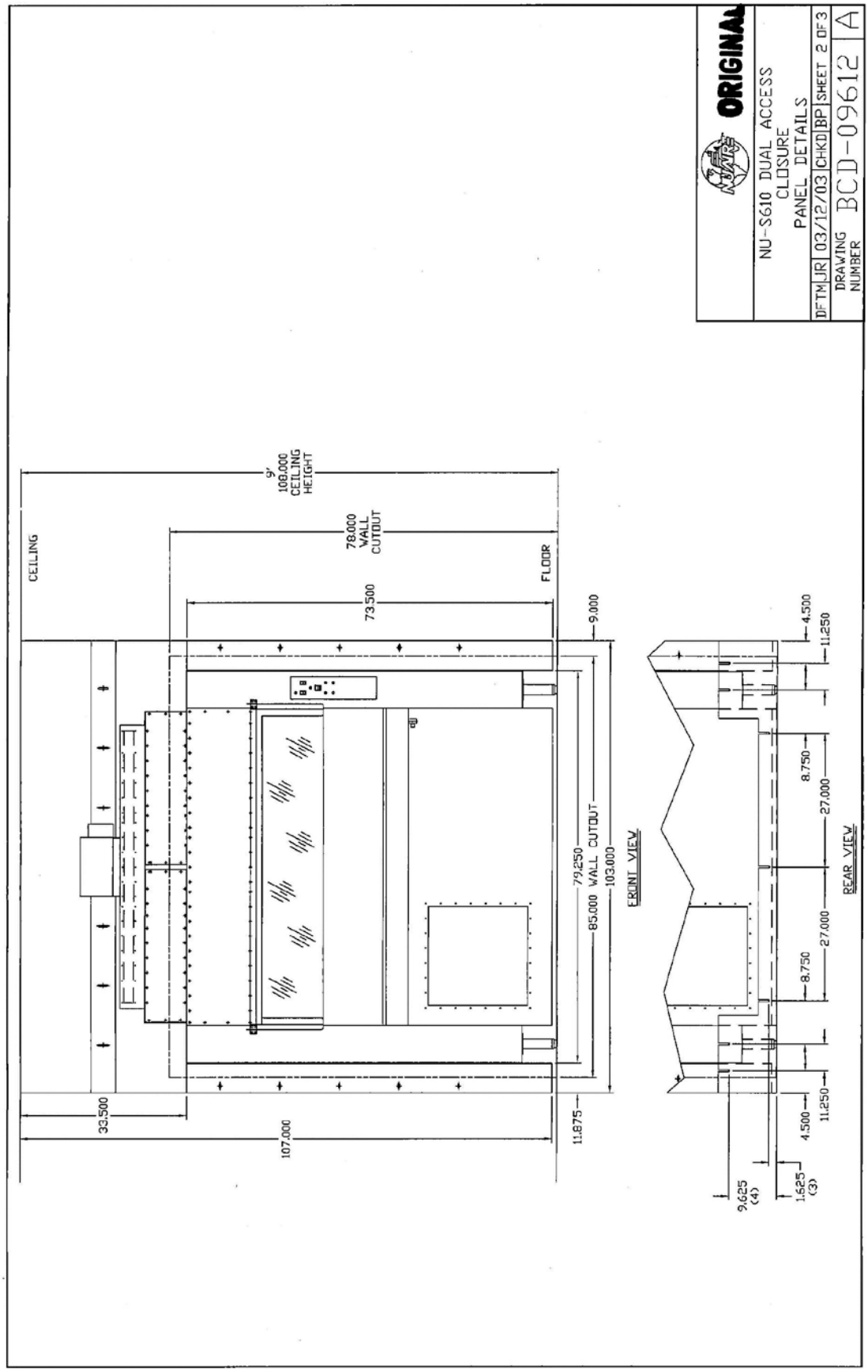
16. A 3/8 (10 mm) inch ball valve shall be provided in the drain trough beneath the work tray.

17. Motor/blowers shall be positioned so as to create an even filter loading, thereby prolonging the life of the supply HEPA filter, and shall deliver over 180% the initial HEPA filter static pressure with no more than a 10% decrease of CFM.

18. The following optional equipment shall be available to support installation and user requirements:
    **Ultraviolet Light
    Ground Fault Interrupter for Electrical System
    Service Valves for Gas, Air, Vacuum
    Additional Outlet
    IV Bar with 6 Stainless Steel Hooks
    Alarm Systems
    Exhaust Interlocks
    Exhaust Transitions

    ** If UV light is installed, the cabinet will not bear the UL label due to the potential exposure to UV light.


NU-S610-600 DUAL ACCESS
CLASS II,TYPE A2 (ENERGY SAVER)
BIOLOGICAL SAFETY CABINET
DFTM|JR| 03/12/03 |CHKD|BP|SHEET 1 OF 3
DRAWING NUMBER BCD-09612 A
ORIGINAL
12 FT. 30 AMP POWER CORD (NEMA L5-30P)
PERFORATED GRILL (2 PLACES) FOR ROOM AIR INFLOW
(OPTIONAL) 16 GA STAINLESS STEEL CLOSURE PANELS
SERVICE PANEL EXHAUST FILTER
SERVICE PANEL SUPPLY FILTER
(OPTIONAL) LOW PROFILE THIMBLE EXHAUST TRANSITION W/ 10" DUCT CONN.
PERFORATED METAL DIFFUSER
25" WORK HEIGHT
ROOM AIR INFLOW 80-90 FPM (DIRECTIONAL INFLOW MEASUREMENTS) INFLOW 100-110 FPM (CALCULATED)
GFI OUTLET (1 EACH SIDE WALL)
FOAM SEAL (TYP)
NSF APPROVED LEG LEVELER ADJUSTMENT
14"X24"X5-7/8" HEPA EXHAUST FILTER (2 PLACES)
30-1/4"
28-1/4" WORK ZONE DEPTH
35" MIN
NOTES AIRFLOW SPECIFICATIONS
DOWNFLOW - 75 FPM
INFLOW - 85 FPM (DIM), 105 FPM (CALCULATED)
CABINET EXHAUST - 1120 CFM
THIMBLE TRANSITION - 200 CFM
TOTAL EXHAUST REQUIREMENT - 1320 CFM
EXHAUST STATIC REQUIREMENT - .1" W.G.
ALNOR PROBE INSTALLATION
PROBE LOCATION MUST BE IN FRONT OF DUCT
EXTEND 8" LONG ALARM PROBE 2" INSIDE DUCT FOR FINAL PLACEMENT
PROBE HOLDER
CUSTOMER DUCT
10" REF
NOTE: CUSTOMER TO LOCATE 5/8" DIA HOLE FOR ALNOR PROBE IN DUCTING FABRICATE HOLE AND INSTALL PROBE IN DUCT WORK AT POINT TO TRANSITION TO AVOID DAMAGING EXHAUST HEPA FILTER
INTERNAL BALANCING DAMPER ADJUSTMENT (2 PLACES)
15-1/8"
5.000
HEPACEL ZERO LEAK AIRFLOW SYSTEM 28"X24"X3"ALUM FRAMED SUPPLY HEPA FILTER (2 PLACES)
POWER "ON" SWITCH CIRCUIT BREAKER POWER (2) LIGHT SWITCH (2) BLOWER OUTLET SWITCH AIRFLOW CONTROL (2)
FLUORESCENT LIGHT (2 PLACES)
ULTRAVIOLET LIGHT (OPTIONAL X2 PLACES)
HINGED WINDOW TEMPERED GLASS
WINDOW LOCK
ROOM AIR INFLOW 80-90 FPM (DIRECTIONAL INFLOW MEASUREMENTS) INFLOW 100-110 FPM (CALCULATED)
BRAIN VALVE
CUSTOMER WALL CUTOUT 78" H x 85" W
7" (MIN)
75 7/8"
6.000
(OPTIONAL) B3C ALNOR AIRFLOW MONITOR
#335 39-1/2"
10"DIA DUCT CONN.
79"
MINIHELIC GAUGE (2 PLACES)
6" MIN.
64" WORK ZONE WIDTH
12" ACCESS
3.000 CLEARANCE REF
ECM MOTOR/BLOWER (2)
BLOWER ACCESS COVER (2)
91"
ADJUSTMENT SLOTS


ORIGINAL
NU-S610 DUAL ACCESS
CLOSURE
PANEL DETAILS
DFTM JR 03/12/03 CHKD BP SHEET 2 OF 3
DRAWING NUMBER BCD-09612 A
9'
108.000
CEILING
HEIGHT
78.000
WALL
CUTOUT
CEILING
FLOOR
73.500
9.000
79.250
85.000 WALL CUTOUT
103.000
11.875
33.500
107.000
FRONT VIEW
4.500
11.250
8.750
27.000
27.000
8.750
4.500
11.250
9.625
(4)
1.625
(3)
REAR VIEW

ITEM	QTY	DESCRIPTION	NUAIRE P/N
1	1	30 AMP 115V PLUG	X-999516
2	1	SWITCH DPST	X-999676-03
3	1-2	ROCKER SWITCH SPDT	X-999677-03
4	1	U.V. BALLAST	X-999184-04
5	1	GREEN PILOT LIGHT	X-999531
6	1	CONN. PLUG 6 PIN	X-999235-03
7	1	POWER CORD 10/3 30AMP (12FT)	X-3066-07
8	1	CONN. RECEPTACLE 6 PIN	X-999234-03
9	1	FLUORESCENT BALLAST	X-999184-05
10	2	CIRCUIT BREAKER 15 AMP	X-999134-07
11	1	TERMINAL BLOCK 30 AMP	X-999919-03
12	2	U.V. LAMP	X-999443-01
13	8	LAMP HOLDER SOCKET	X-999163-02
14	1	TERMINAL BLOCK ASSY	A-425-4099-01
15	1	CIRCUIT BREAKER 3 AMPS	X-999134-05
16			
17	3	DUPLEX BULKHEAD 2 PIN	A-407-1088-01
18	1	DUPLEX OUTLET	X-999511
19	2	CONN. PLUG 4 PIN	X-999247-01
20	2	CONN. RECEPTACLE 4 PIN	X-999247-02
21	2	FLUORESCENT LAMP 24"	X-999428-01
22	1	TERMINAL BLOCK ASSY	A-425-4099-02
23	A/R	PIN - CONTACT	X-999243-01
24	A/R	SOCKET - CONTACT	X-999243-02
25	5	DUPLEX BULKHEAD 6 PIN	A-425-3654-01
26	6	CONN. PLUG 2 PIN	X-999239
27	6	CONN. RECEPTACLE 2 PIN	X-999238
28	2	CONN. PLUG 3 PIN	X-999236
29	2	CONN. RECEPTACLE 3 PIN	X-999237
30	1	GFI DUPLEX	X-999330
31	0-1	ROCKER SWITCH SPDT	X-999677-03
32	1	J-BOX 2X2X4	X-999371
33	4	JUMPER	X-999920-02
34	1	RELAY (20 AMP) 115 V COIL	X-999610-03
35	2	BLOWER	X-980207-12
36	1	OUTLET	X-999512
37			
38	1	MOTOR DC 3/4 HP 1625 RPM (5, 6 FT.)	A-999931-02
39	1	CONNECTOR - HOUSING	X-999046-03
40	1	CONNECTOR - SOCKET	X-999862-03
41	2	MOTOR SPEED CONTROL (AC/DC)	A-425-8371-03
42	2	PILOT LIGHT	X-999348-01
43	2	SWITCH - PUSHBUTTON NO	X-999040-02
44	2	POWER SUPPLY, BRICK, 12V DC	X-999863-06