XF FLUSH MOUNT LIGHT INSTALLATION SHEET

EXFS10001-(X)
EXFS10002-(X)

Single Color

EXFS10001-R	RED
EXFS10001-B	BLUE
EXFS10001-A	AMBER
EXFS10001-W	WHITE

Dual Color

EXFS10002-F	AMBER/WHITE
EXFS10002-M	BLUE/AMBER
EXFS10002-E	BLUE/WHITE
EXFS10002-P	GREEN/AMBER
EXFS10002-K	RED/AMBER
EXFS10002-J	RED/BLUE
EXFS10002-D	RED/WHITE

⚠ WARNING ⚠

- HIGH CURRENT interconnects must be properly terminated. Poor crimp quality can cause heat build-up and fire. Follow the crimp connector manufacturer instructions.
- DO NOT install this product or route any wires in the Air Bag Deployment Zone. Refer to vehicle Owner's Manual for deployment zones.
- Do NOT use system to disconnect headlights, brake lights or other safety equipment.
- Unit may become hot to touch during normal operation.
- Failure to properly install connectors, fuses or wiring may cause vehicle failure or fire.
- Installation must only be performed by trained technician. Installer must determine vehicle wiring configuration and proper integration of system.
- Use proper wire gauge. All power wires connecting to positive (+) or negative (-) battery terminal or local chassis ground (-) must be sized to supply at least 125% of max. current and properly fused at power source.
- Install protective grommets when routing wire through firewall or metal.
- Petroleum/silicone based lubricants will cause the silicone lens to discolor.

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⚠ WARNING

ROUTE WIRES ONLY IN LOCATIONS THAT ARE NOT SUBJECTED TO POTENTIAL WEAR. MAKE SURE TO AVOID ROUTING WIRES IN THE DEPLOYMENT AREA OF YOUR AIR BAG. REFER TO YOUR VEHICLE'S OWNER'S MANUAL FOR AIRBAG DEPLOYMENT ZONES.

NOTICE:

Installers and users must comply with all applicable federal, state and local laws regarding use and installation of warning devices. *Improper use or installation may void warranty coverage. To review our Limited Warranty Statement & Return Policy for this or any SoundOff Signal product, visit our website at* ***www.soundoffsignal.com/tech-services/returns/****. If you have questions regarding this product, contact* ***Technical Services****, Monday - Friday, 8 a.m. to 5 p.m. ET at* ***1.800.338.7337*** *(press #4). Questions or comments that do not require immediate attention may be emailed to* ***techservices@soundoffsignal.com.***

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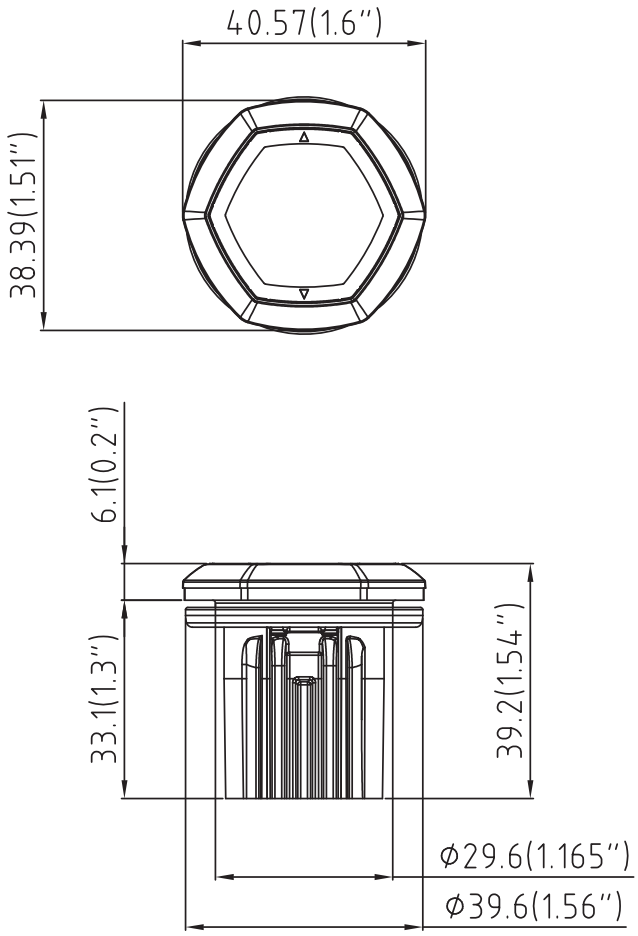
ENHANCING SAFETY THROUGH INNOVATION

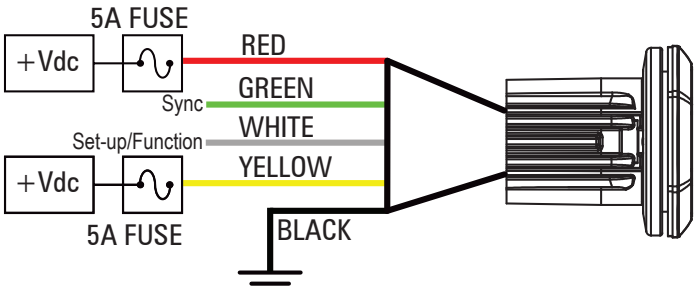
XF LIGHT DIMENSIONS / SPECIFICATIONS:

TECHNICAL SPECIFICATIONS				
	Input Voltage:		9-32Vdc	
	Average Power	9.7 Watts	Max Power	19.4 Watts
	12Vdc		24Vdc	
Dual Color Version Current Consumption	**Peak Current**	**Average Current**	**Peak Current**	**Average Current**
Red	0.6	0.3	0.3	0.15
Blue, Amber White, Green	0.8	0.4	0.4	0.2
Single Color Version Current Consumption	**Peak Current**	**Average Current**	**Peak Current**	**Average Current**
Red	1.2	0.6	0.6	0.3
Blue, Amber White, Green	1.6	0.8	0.8	0.4
LED Count			**6**	
Number of Flash Patterns			**20**	
Sync			Sync 2 , Up to 24 lights bluePrint Compatible	
Operating Temperature			-40°C to +65°C	
IP Rating			IP67	
Certifications			SAE J595 Class1, CA Title 13 Class B ECE R65 XA2, XB2, XR2 (single color) ECE R65 XA1, XB1, XR1 (dual color) ECE R10, CISPR25 Class 3	



XF LIGHT WIRE INFORMATION:

WIRE HOOK-UP TABLE	
WIRE COLOR:	FUNCTION:
24 AWG RED	Power (Primary)
24 AWG BLACK	Ground
24 AWG GREEN**	Sync2 *
24 AWG WHITE to GROUND	Setup Wire (See page 5*)
24 AWG WHITE to POWER	Function Wire
24 AWG YELLOW	Power (Secondary)



* Sync2. Up to 24 light heads.
**To sync multiple XF lights, connect the Green wire from each light together.

XF LIGHT INSTALLATION:

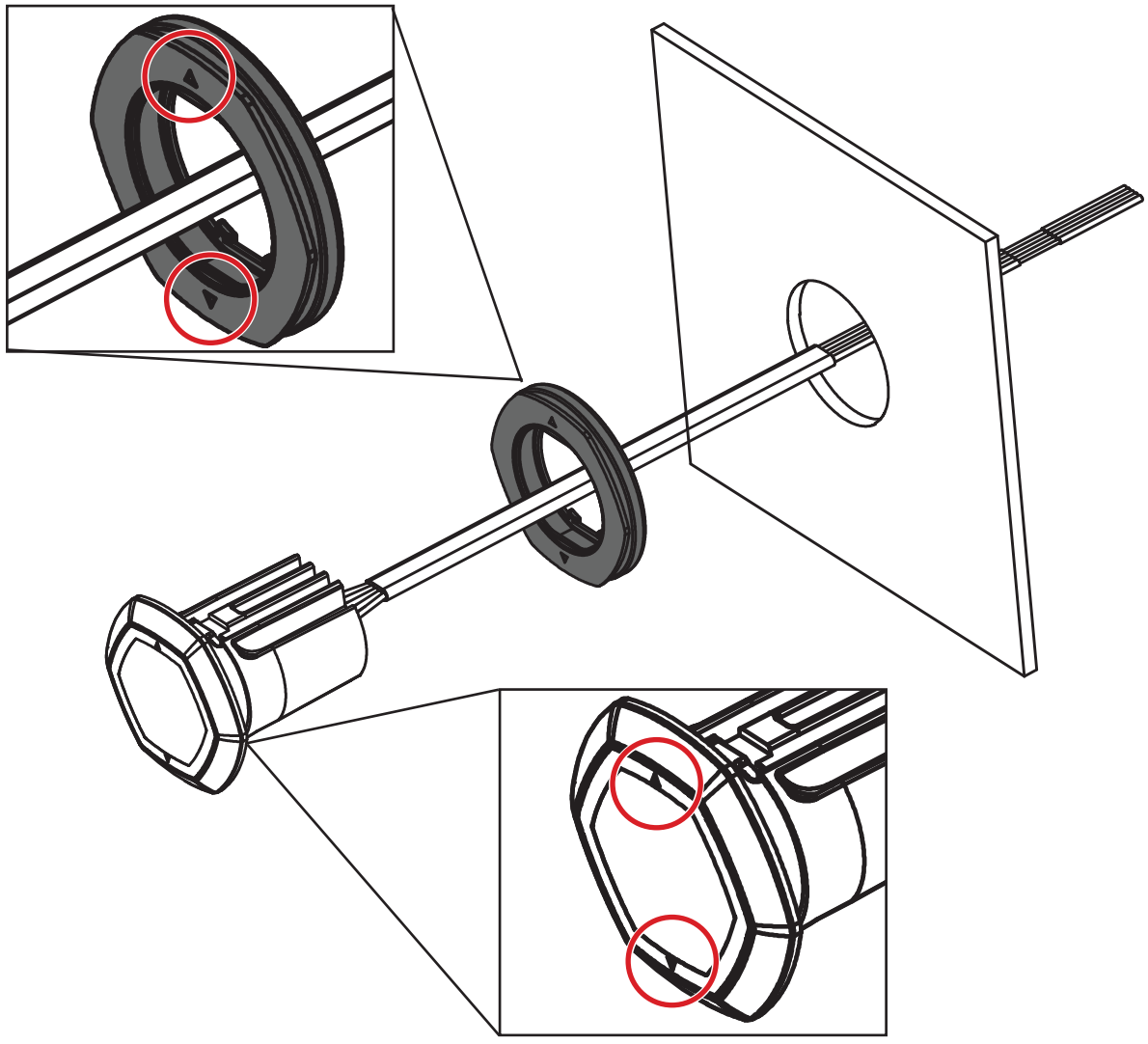
Gasket Mount (FIG. 1)

1. Ensure surface is flat and space behind mounting surface is open and free of obstacles.
2. Choose mounting location and drill a 1 1/8" hole.
3. Place Gasket into hole and ensure fit is snug. Confirm the gasket and light head is placed with the arrows aligned vertically as shown in Fig. 1.
4. Make wire connection and feed wire through the drilled wire hole.
5. Slide the light into the gasket making sure to keep gasket on the mounting surface.

PRO TIP: If hole is slightly too large light may spin under certain circumstances. Apply a small amount of Silicon on back side of light to ensure light is solid.

NOTE: WRONG MOUNTING ORIENTATION WILL NOT MEET SAE OR ECE R65 REQUIREMENT

FIG 1



ELECTRICAL INSTRUCTIONS:

SYNC 2

Synchronizing the flashing of multiple light modules is accomplished by connecting the Green wires of different light modules together. Up to 24 light modules can be connected for synchronized flashing. All light module flash patterns must be set to the same flash pattern # to ensure proper operation. Refer to the Sequence Type section in Set-Up Table (page 5) to setup light modules to flash in alternate or simultaneous flash pattern.

FLASH PATTERNS		
PATTERN #	**SINGLE COLOR**	**DUAL COLOR**
1	ECE Single	
2	ECE Double	
3	ECE Triple	
4	QUINT	
5	WARP	
6	INTER-CYCLE	
7	DOUBLE	
8	QUAD	
9	POWER PULSE	
10	ROAD RUNNER	
11	Q-SWITCH	
12	STEADY-BURN / ROADRUNNER (SEQUENCE TYPE 1: STEADY BURN, SEQUENCE TYPE 2: ROADRUNNER)	
13	STEADY-BURN DRIVER TITLE 13 QUAD (SEQUENCE TYPE 1: STEADY BURN, SEQUENCE TYPE 2: TITLE 13 QUAD)	
14	QUAD 2	
15	DOUBLE 2	
16	RANDOM 1	
17	RANDOM 2	
18	Quad Pulse-Pop	
19	Cruise; 3% DC	
20	Steady ON; 40% DC	

ELECTRICAL INSTRUCTIONS CONTINUED:

ADVANCE PATTERN
Flash pattern can only be changed when the light head is in a flashing mode (disabled in cruise or steady ON functions). When the light is flashing, momentarily connect the white wire to ground for >250mS and <1S (light will go steady high) then release. The flash pattern will advance to the next pattern. If the light module was at the last pattern, the pattern will reset to the 1st pattern.

BACKUP PATTERN
This function is only valid when the light head is in a flashing mode (disabled in cruise or steady ON functions). When the light is flashing, momentarily connect the white wire to ground for >1S and < 2S (light will go steady high, steady low) then release. The flash pattern will backup to the previous pattern. If the light module was at the first pattern, the pattern will change to the last pattern on the list.

COLOR SWAP
This function is only valid for dual color light heads and can only be changed when the light is in a flashing mode (disabled for single color light heads and when light head is operating in cruise or steady ON functions). When the light head is flashing, momentarily connect the white wire to ground for >2S and <3S (light will go steady high, steady low, off) then release. The light head will switch between Color Swap OFF and Color Swap ON. When Color Swap is OFF, the 1st color will flash 1st on a dual color pattern. When Color Swap is ON, the 2nd color will flash 1st on a dual color pattern.

SIMULTANEOUS/ALTERNATE
This function can only be changed when the light head is in a flashing mode (disabled in cruise or steady ON functions) and only has an effect when at least 2 LED light heads have the green sync wire connected together. When the light is flashing, momentarily connect the white wire to ground for >3S and <4S (light will go steady high, steady low, off, steady high) then release.
The light head will switch between Simultaneous and Alternate each time this sequence is done. To have light heads flash simultaneously, both light heads need to be set to the same sequence type (Set-Up Table). To have light modules flash alternately, the light heads need to be set to different sequence types (Set-Up Table).

PATTERN RESET
This function is only valid when the light head is in a flashing mode (disabled in cruise or steady ON functions). When the light is flashing, momentarily connect the white wire to ground for >5S and <6S (light will go steady high, steady low, off, steady high, steady low, off) then release. The flash pattern will reset to the 1st pattern in the list.

FACTORY RESET
This function is only valid when the light head is in a flashing mode (disabled in cruise or steady ON functions). When the light is flashing, momentarily connect the white wire to ground for >6S and <7S (light will go steady high, steady low, off, steady high, steady low, off, steady high) then release. The LED module will reset to: pattern=1, Function Table=1, Color Swap=OFF, Simultaneous.

LOCKOUT CONFIGURATION WIRE
This function will disable the wire tap configuration mode that is activated by holding the white wire to ground. The lock out is activated by applying ground to the white wire for >7 seconds and <8 seconds per the table below. The function can be disabled by tapping the wire to ground and releasing 8 times within 5 seconds. The light will flash 8 times when the feature is enabled or disabled to notify the user of a setting change.

SETUP TABLE

SECONDS		USER INTERFACE	
FROM	TO	VISUAL FEEDBACK	ACTION TAKEN
0	1	STEADY-HIGH (60%)	FORWARD ONE PATTERN
1	2	STEADY-LOW (30%)	BACKWARD ONE PATTERN
2	3	OFF	COLOR SWAP (OFF OR ON)
3	4	STEADY - HIGH (60%)	SEQUENCE TYPE: SIMULTANEOUS OR ALTERNATE
4	5	STEADY - LOW (30%)	CHANGE FUNCTION TABLE (SEE PAGE 6)
5	6	OFF	RESET TO PATTERN 1
6	7	STEADY-HIGH (60%)	FACTORY RESET (PATTERN 1, COLOR SWAP: OFF, SIMULTANEOUS)
7	8	STEADY - LOW (30%)	LOCK OUT WHITE CONFIGURATION WIRE
If held longer than 8 seconds, the light will go back to flashing the current pattern and no action will be taken.			

ELECTRICAL INSTRUCTIONS CONTINUED:

FUNCTION TABLES

Changing the function table is only enabled when the light head is in a flashing mode (disabled in cruise or steady ON functions.) The functional operation of the light head can be changed while applying the +V to the Red wire with the black wire connected to ground. When the light is flashing, momentarily connect the White wire to ground for >4S and <5S (light will go steady high, steady low, off, steady high, steady low) then release. The function table will now advance to the next table (table 1 to table 2, table 2 to table 3, or table 3 to table 1. Repeat above process until required function table is active. **AFTER SELECTION: The light will "wink" to indicate which of the new tables is selected.**

FUNCTION TABLE 1

WIRE			LIGHT	
RED	**YELLOW**	**WHITE**	**SINGLE**	**DUAL**
+9-32V			FLASH	FLASH DUAL
	+9-32V		CRUISE	STEADY CLR 2
+9-32V	+9-32V		FLASH	STEADY CLR 2
		+9-32V	NO OP	NO OP
+9-32V		+9-32V	LOW PWR FLASH*	FLASH CLR 1
	+9-32V	+9-32V	CRUISE	FLASH CLR 2
+9-32V	+9-32V	+9-32V	LOW PWR FLASH	FLASH DUAL

***NIGHT MODE / ECE R65 CLASS 1**

FUNCTION TABLE 2

WIRE			LIGHT	
RED	**YELLOW**	**WHITE**	**SINGLE**	**DUAL**
+9-32V			FLASH	FLASH CLR 1
	+9-32V		STEADY CLR 1	STEADY CLR 2
+9-32V	+9-32V		STEADY CLR 1	STEADY CLR 2
		+9-32V	NO OP	NO OP
+9-32V		+9-32V	CRUISE	FLASH DUAL
	+9-32V	+9-32V	STEADY CLR 1	STEADY CLR 2
+9-32V	+9-32V	+9-32V	STEADY CLR 1	STEADY CLR 2

FUNCTION TABLE 3

WIRE			LIGHT	
RED	**YELLOW**	**WHITE**	**SINGLE**	**DUAL**
+9-32V			FLASH	FLASH DUAL
	+9-32V		FLASH LOW PWR*	FLASH DUAL LOW PWR
+9-32V	+9-32V		FLASH LOW PWR*	FLASH DUAL LOW PWR
		+9-32V	NO OP	NO OP
+9-32V		+9-32V	FLASH LOW PWR*	FLASH DUAL LOW PWR
	+9-32V	+9-32V	FLASH LOW PWR*	FLASH DUAL LOW PWR
+9-32V	+9-32V	+9-32V	FLASH LOW PWR*	FLASH DUAL LOW PWR

***NIGHT MODE / ECE R65 CLASS 1**

ELECTRICAL INSTRUCTIONS CONTINUED:

REMOTE MODE: FOR USE WITH bluePRINT SYSTEM ONLY

Connecting the Green wire to ground before applying power to the Red or Yellow wires will place the LED module into remote mode and the light output color will be directly controlled by the input wires as shown below.

For Cruise mode or Low Power control of the LED module, the signal to the control wires must be 100 +/- 2Hz using the duty cycle inputs listed below to produce the light output.

XF Light Remote Mode Functionality					
Red Wire	Yellow Wire	Single Color		Dual Color	
		Color Swap=OFF	Color Swap=ON	Color Swap=OFF	Color Swap=ON
Cruise	-	Cruise Color 1		Cruise Color 1	Cruise Color 2
-	Cruise			Cruise Color 2	Cruise Color 1
Cruise	Cruise			Cruise Color 2	Cruise Color 1
Flash	-	Flash Color 1		Flash Color 1	Flash Color 2
-	Flash			Flash Color 2	Flash Color 1
Flash	Flash			Flash Color 2	Flash Color 1
Steady ON	-	Steady ON Color 1		Steady ON Color 1	Steady ON Color 2
-	Steady ON			Steady ON Color 2	Steady ON Color 1
Steady ON	Steady ON			Steady ON Color 2	Steady ON Color 1

Cruise Mode Duty Cycle (@ 100Hz)	
Input	Light Output
40%	OFF
50%	3%
60%	7%

Low Power Flash D.C. (@ 100Hz)	
Input	Light Output
70%	30%
80%	40%
90%	50%

WARRANTY & RETURN GOODS PROCEDURE

CLEANING & CARE OF YOUR LIGHTBAR:

Keeping the lenses clean and scratch free will optimize the performance of the product. The exterior of the product including lenses should be cleaned with mild soapy water and a soft cotton cloth to remove dirt, grime and insects. Never use window cleaners or harsh chemicals on the lenses; this may cause failure of the lenses or reduce clarity resulting in the reduction of light output.

MOUNTING INTEGRITY:

A review of bolt/hardware/mounting bracket integrity should be performed at the beginning and end of each shift.

WARNING MESSAGES - PLEASE READ:

WARNING - CARE MUST BE TAKEN WHEN DRILLING THROUGH THE ROOF OF THE VEHICLE NOT TO DRILL INTO ANY EXISTING WIRING AND NOT TO DRILL THROUGH THE HEADLINER OR SUPPORT MEMBERS OF THE VEHICLE. CHECK BOTH SIDES OF THE MOUNTING SERVICE PRIOR TO DRILLING. DE-BURR ANY HOLES AND REMOVE ANY METAL SHARDS OR REMNANTS. INSTALL GROMMETS INTO ALL WIRE PASSAGE HOLES.

WARNING - ROUTE WIRES ONLY IN LOCATIONS THAT ARE NOT SUBJECTED TO POTENTIAL WEAR. MAKE SURE TO AVOID ROUTING WIRES IN THE DEPLOYMENT AREA OF YOUR AIR BAG. REFER TO YOUR VEHICLE OWNER'S MANUAL FOR AIR BAG DEPLOYMENT ZONES.

WARNING - ALL CUSTOMER SUPPLIED POWER WIRES CONNECTING TO THE POSITIVE (+) OR NEGATIVE (-) BATTERY TERMINAL OR LOCAL CHASSIS GROUND (-) MUST BE SIZED TO SUPPLY AT LEAST 125% OF THE MAXIMUM CURRENT AND PROPERLY FUSED AT THE POWER SOURCE WITH APPROPRIATELY RATED FUSE.

WARRANTY RETURN PROCESS:

Please scan QR code or visit
https://soundoffsignal.com/support-page/returns/.

Alternatively contact your SoundOff Signal Sales Representative, Customer Services staff or our Technical Department (800.338.7337) for a RMA #, Return Merchandise Authorization Number.

The following information is required for issuance of the RMA #:

- Reason for returning the product*
- Address where replacement product is to be shipped*
- Telephone number where you may be reached*
- SoundOff Signal invoice number on which product was purchased**
- SoundOff Signal part number and serial number**
- E-mail address where RMA # should be e-mailed**
- Fax number where RMA # should be faxed**

* RMA # will not be given without this information.
** If available, please provide this information.

SoundOff Signal will NOT accept returns without an RMA #. Each RMA # is good for only one (1) return and will expire (30) days after the date it was issued. Products must be shipped back to SoundOff Signal and the RMA # clearly marked on the outside of the package near the shipping label. Please use the following address on your shipping label:

SoundOff Signal
ATTN: RMA # / Technical Services
3900 Central Parkway
Hudsonville, MI 49426

WARRANTY EXCLUSIONS:

Shipping & Handling, labor and service fees are non-refundable. SoundOff Signal is not liable for any damage due to installation or personal injury as a result of using SoundOff Signal product.

WARRANTY FORFEITURE:

Warranty will not be granted if the Warranty Return Policy & Procedure rules are not strictly followed. Physical damage resulting from customer abuse will void warranty. Warranty will also be voided if any SoundOff Signal and/or manufacturer serial tags, product stickers, seals, or the like, are removed, altered or tampered with. Returned product that is damaged by shipping via the RMA # procedure is not the responsibility of SoundOff Signal.

Document effective date on cover and below supersedes previously dated policies and statements.

There are no other warranties, expressed or implied, including, but not limited to, any implied merchantability or fitness for a particular use. SoundOff Signal reserves the right to modify this warranty statement at any time; or to discontinue, modify, or upgrade any products of its manufacture with design improvements without prior notice.