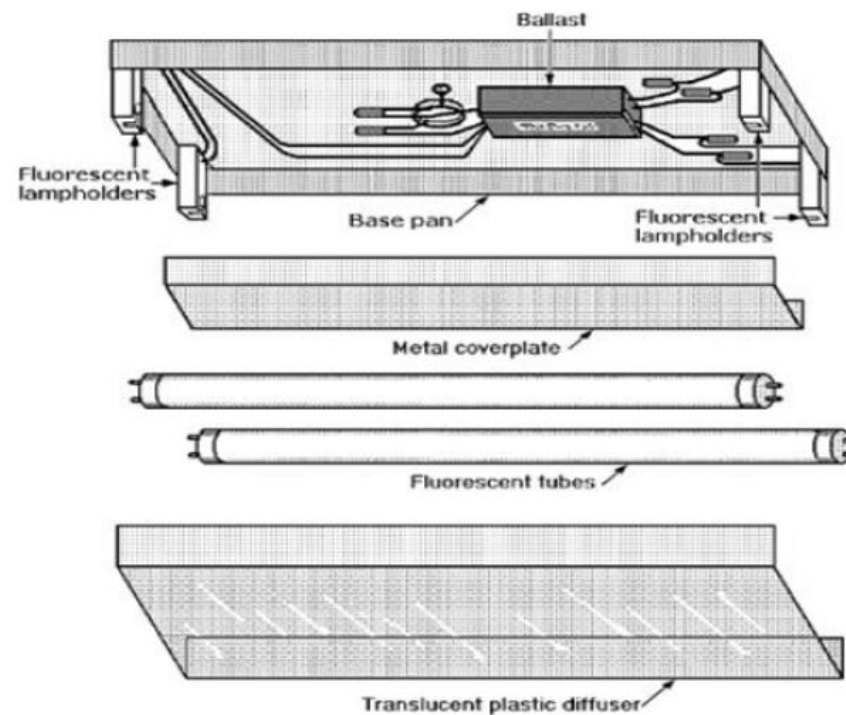


**1.1 TUBE HOLES**  
SCALE: 1:4



**2.1 DIAGRAM**  
SCALE: N/A

**FIXTURE DISASSEMBLY**

- 1) REMOVE THE METAL CAGE FROM THE FIXTURE.
- 2) REMOVE BOTH T12 FLUORESCENT TUBES FROM THE FIXTURE.
- 3) ON THE UNDERSIDE OF THE FIXTURE THERE ARE TWO (2) PHILLIPS-HEAD SCREWS WHICH SECURE THE LAMP HOLDER AND COVER PLATE TO THE BASE PAN. REMOVE BOTH SCREWS AND SET THEM ASIDE.
- 4) REMOVE THE LAMP HOLDERS, BALLAST, AND WIRING FROM THE FIXTURE.

**TUBE ASSEMBLY**

- 1) MARK A STRAIGHT LINE ALONG THE LENGTH OF EACH TUBE.
- 2) MARK AND DRILL FOUR (4) 1/16" HOLES IN EACH TUBE GUARD ALONG THE LINE. SEE DRAWING 1.1.
- 3) APPLY ONE (1) LAYER OF MASKING TAPE TO EACH TUBE, CENTERED OPPOSITE OF THE HOLES.
- 4) ATTACH FOUR (4) TAPE SUPPORT PIECES TO EACH TUBE WITH 1/2" #1 PHILLIPS SCREWS.

**BILL OF MATERIALS**

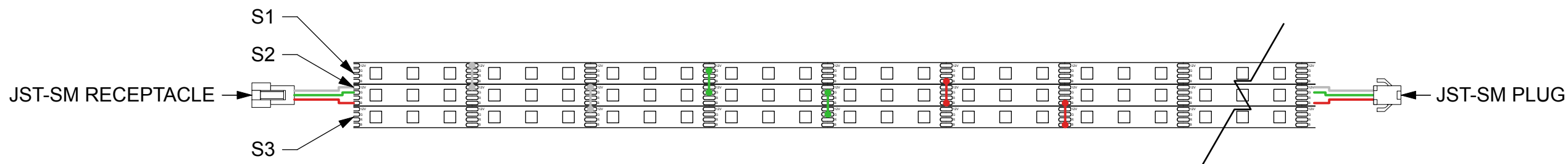
	DESCRIPTION	QTY	QTY PER 2
1	FLUORESCENT LAMP TUBE GUARD, CLEAR, T8	2	4
2	PACKING TAPE, TRANSLUCENT, WHITE	7'9"	15'6"
3	GAFF TAPE, BLACK	7'6"	15'0"
4	VINYL ELECTRICAL TAPE, WHITE	2'0"	4'0"
5	TUBE MOUNT, 3D PRINT, PLA, WHITE	2	4
6	LED TAPE SUPPORT, 3D PRINT, PLA, WHITE	8	16
7	1/2" #1 PHILLIPS SCREW	8	16
8	SMD5050 LED TAPE, TUNABLE WHITE	22'6"	45'0"
9	3 WIRE, 22AWG	5'0"	10'0"
10	XLR-3 CONNECTOR, PANEL MOUNT, W/ SCREWS	1	2
11	JST SMP-03V-BC CONNECTOR, BLACK (PLUG)	3	6
12	JST SMR-03V-B CONNECTOR, BLACK (RECEPTACLE)	2	4
13	1/4" (?) STRAIN RELIEF	1	2

DESIGNED BY BRYAN BACK	NPS LEFT UNHEARD FLUORESCENT RETROFIT INSTRUCTIONS			
DRAWN BY SAM EADS				
CHECKED BY RAPHAEL DANIELS-DEVOST	TITLE <b>DISASSEMBLY, TUBES</b>			
APPROVED BY ADRIEN MATHIEU	SIZE B	CAGE CODE	DRAWING NUMBER NPS FINAL - RETROFIT	REV A
OTHER APPROVALS	SCALE 1:4	EST. WGT	SHEET 1	OF 3
CAD FILE NAME NPS RETROFIT.vwx				

PLEASE NOTE: LED TAPE IS PRINTED WITH MISLEADING LABELS. PLEASE REFER TO THE PINOUT BELOW.

**PINOUT, LED TAPE -> JST-SM**

+12V: WHITE  
 G (COOL): GREEN  
 R: NOT IN USE  
 B (WARM): RED



**1.2 LED TAPE CONNECTIONS**  
 SCALE: 1:2

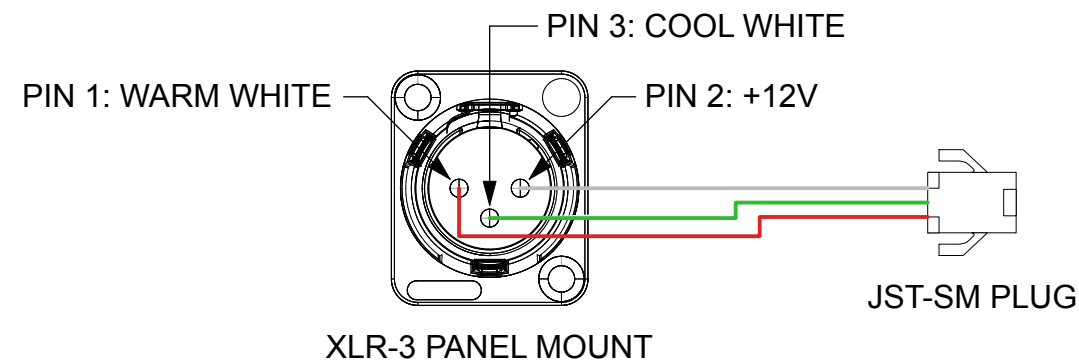
**BILL OF MATERIALS**

	DESCRIPTION	QTY	QTY PER 2
1	FLUORESCENT LAMP TUBE GUARD, CLEAR, T8	2	4
2	PACKING TAPE, TRANSLUCENT, WHITE	7'9"	15'6"
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4	VINYL ELECTRICAL TAPE, WHITE	2'0"	4'0"
5	TUBE MOUNT, 3D PRINT, PLA, WHITE	2	4
6	LED TAPE SUPPORT, 3D PRINT, PLA, WHITE	8	16
7	1/2" #1 PHILLIPS SCREW	8	16
8	SMD5050 LED TAPE, TUNABLE WHITE	22'6"	45'0"
9	3 WIRE, 22AWG	5'0"	10'0"
10	XLR-3 CONNECTOR, PANEL MOUNT, W/ SCREWS	1	2
11	JST SMP-03V-BC CONNECTOR, BLACK (PLUG)	3	6
12	JST SMR-03V-B CONNECTOR, BLACK (RECEPTACLE)	2	4
13	1/4" (?) STRAIN RELIEF	1	2

**LED TAPE ASSEMBLY**

- 1) CUT THREE (3) STRIPS 3'-9" OF LED TAPE, SET ASIDE.
- 2) CUT ONE (1) STRIP 3'-9" OF GAFF TAPE.
- 3) ATTACH THE ADHESIVE OF LED TAPE TO THE GAFF TAPE ADHESIVE. PLACE LED TAPE STRIPS AS CLOSE TOGETHER AS POSSIBLE.
- 4) CUT OFF EXCESS WIDTH OF GAFF TAPE AND DISCARD.
- 5) SOLDER LED TAPE BRIDGE WIRE CONNECTIONS. SEE DRAWING 1.2.
- 6) ASSEMBLE ONE (1) JST-SM PLUG CONNECTOR, AND ONE (1) JST-SM RECEPTACLE CONNECTOR. SOLDER THE LEADS OF THE PLUG CONNECTOR TO LED TAPE STRIP S2, SOLDER THE LEADS OF THE RECEPTACLE CONNECTOR TO THE OPPOSITE END. SEE DRAWING 1/2.
- 7) APPLY A SMALL LAYER OF HOT GLUE OVER THE SOLDER CONNECTIONS ON BOTH ENDS.
- 8) APPLY ELECTRICAL TAPE TO THE LENGTH OF BOTH LEADS, COVER BOTH JST-SM CONNECTORS.
- 9) REPEAT STEPS 1-8 TO MAKE A SECOND LED TAPE ASSEMBLY

DESIGNED BY BRYAN BACK	NPS LEFT UNHEARD FLUORESCENT RETROFIT INSTRUCTIONS			
DRAWN BY SAM EADS				
CHECKED BY RAPHAEL DANIELS-DEVOST	TITLE <b>LED TAPE ASSEMBLY</b>			
APPROVED BY ADRIEN MATHIEU	SIZE B	CAGE CODE	DRAWING NUMBER NPS FINAL - RETROFIT	REV A
OTHER APPROVALS	SCALE 1:2	EST. WGT	SHEET 2	OF 3
CAD FILE NAME NPS RETROFIT.vwx				



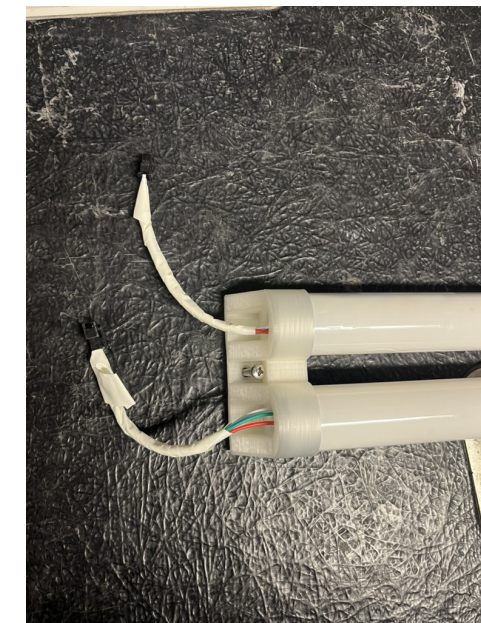
1.3 **XLR-JST PINOUT**  
SCALE: 1:1



2.3 **KNOCKOUT REF**  
SCALE: N/A



3.3 **STRAIN RELIEF REF**  
SCALE: N/A



4.3 **TUBE HOLDER REF**  
SCALE: N/A

**BILL OF MATERIALS**

	DESCRIPTION	QTY	QTY PER 2
1	FLUORESCENT LAMP TUBE GUARD, CLEAR, T8	2	4
2	PACKING TAPE, TRANSLUCENT, WHITE	7'9"	15'6"
3	GAFF TAPE, BLACK	7'6"	15'0"
4	VINYL ELECTRICAL TAPE, WHITE	2'0"	4'0"
5	TUBE MOUNT, 3D PRINT, PLA, WHITE	2	4
6	LED TAPE SUPPORT, 3D PRINT, PLA, WHITE	8	16
7	1/2" #1 PHILLIPS SCREW	8	16
8	SMD5050 LED TAPE, TUNABLE WHITE	22'6"	45'0"
9	3 WIRE, 22AWG	5'0"	10'0"
10	XLR-3 CONNECTOR, PANEL MOUNT, W/ SCREWS	1	2
11	JST SMP-03V-BC CONNECTOR, BLACK (PLUG)	3	6
12	JST SMR-03V-B CONNECTOR, BLACK (RECEPTACLE)	2	4
13	1/4" (?) STRAIN RELIEF	1	2

**FIXTURE ASSEMBLY**

- 1) ASSEMBLE JST-SM PLUG CONNECTOR, SOLDER LEADS TO XLR-3 PANEL MOUNT. SEE DRAWING 1.3.
- 2) REMOVE ONE (1) KNOCKOUT FROM AN END OF THE BASE PAN. INSERT AND ATTACH XLR-3 PANEL MOUNT. SEE DRAWING 2.3.
- 3) IN A CORRESPONDING HOLE IN THE COVER PLATE, ATTACH THE JST-SM CONNECTOR WITH A 1/4" STRAIN RELIEF SUCH THAT THERE IS APPROX. 1/4" OF SLACK THROUGH THE STRAIN RELIEF. SUPPLEMENT STRAIN RELIEF WITH HOT GLUE AS NEEDED TO SECURE TO THE COVER PLATE. SEE DRAWING 3.3.
- 4) USING A LENGTH OF TIE LINE, FEED ONE (1) LED TAPE ASSEMBLY INTO EACH TUBE SUCH THAT THE GAFF TAPE IS RESTING ON THE TAPE SUPPORT PIECES.
- 5) PLACE THE TUBES INTO THE TUBE HOLDERS. SEE DRAWING 4.3.
  - 5.1) FEED JST-SM CONNECTOR AND LEAD THROUGH THE HOLE IN ONE HOLDER.
  - 5.2) PLACE THE TUBE INTO THE HOLDER SUCH THAT THE PACKING TAPE IS FACING UPWARDS.
  - 5.3) REPEAT STEPS 5.1-5.2 TO PLACE SECOND TUBE IN THE HOLDER. PLACE THE TUBES IN OPPOSITE DIRECTIONS SUCH THAT THERE IS A JST-SM PLUG AND RECEPTACLE CONNECTOR ON EACH SIDE.
  - 5.4) REPEAT STEPS 5.1-5.3 TO PLACE THE SECOND TUBE HOLDER ON THE OTHER END OF THE TUBES.
- 6) PLACE THE TUBE HOLDERS AND TUBES ONTO THE COVERPLATE, ALIGNING THE HOLES IN THE HOLDERS WITH THE SCREW HOLES FROM SHEET 1 STEP 3.
- 7) ATTACH THE CLOSEST JST-SM RECEPTACLE CONNECTOR TO THE JST PLUG ATTACHED TO THE COVER PLATE.
- 8) ON THE OPPOSITE END OF THE FIXTURE, CONNECT THE LED TAPE ASSEMBLIES WITH JST-SM PLUG/RECEPTACLE.
- 9) REASSEMBLE THE FIXTURE, ATTACHING THE BASE PAN WITH THE SCREWS FROM SHEET 1 STEP 3.

DESIGNED BY BRYAN BACK	<b>NPS LEFT UNHEARD FLUORESCENT RETROFIT INSTRUCTIONS</b>			
DRAWN BY SAM EADS				
CHECKED BY RAPHAEL DANIELS-DEVOST	TITLE <b>FIXTURE ASSEMBLY</b>			
APPROVED BY ADRIEN MATHIEU	SIZE B	CAGE CODE	DRAWING NUMBER NPS FINAL - RETROFIT	REV A
OTHER APPROVALS	SCALE 1:1	EST. WGT	SHEET 3 OF 3	
CAD FILE NAME NPS RETROFIT.vwx				