MARMON AEROSPACE & DEFENSE
RSCC Aerospace & Defense™

Drawing Number
DN40459
Raytheon PN
G452741-1

	Dimensions (Nom.)
Component I	
Conductor: 8 AWG Tin-Coated Copper – 133 Strands of 29 AWG	.160"
Separator Tape: Mylar – 10% Nom. Lap	
Insulation: Cross-linked Modified Polyolefin (White) – .035" Nom. Wall Tensile: 1800 psi min. Elongation: 150% min.	.235"
Component II	
Conductor: 8 AWG Tin-Coated Copper – 133 Strands of 29 AWG	.160"
Separator Tape: Mylar – 10% Nom. Lap	
Insulation: Cross-linked Modified Polyolefin (White) – .035" Nom. Wall Tensile: 1800 psi min. Elongation: 150% min.	.235"
Fillers LSZH Flame Retardant Polyolefin or Silicone	
Cable: Two (2) components cabled together with a 5" nominal left hand	.470"
Binder Tape: Mylar Tape – .001" Thick – 25% Nom. Lap	.473"
Jacket: Cross-linked Modified Polyolefin (Black) – .070" Wall	.615" ± .035"

Cable Identification
MARMON AEROSPACE & DEFENSE DN-40459 G452741-1

Notes:
1. Components are not subject to flame testing. Only the completed Cable will be flame tested.
2. Components will meet the requirements of this document in accordance with MIL-DTL-24643.
3. Insulation and jacket are halogen-free compounds.

Customer:	Drawn By: Kyle C.	Approved By: K. Coderre	Revision: 0	Date: 10-4-17
Changes	Made By:	Approved By:	Revision:	Date:

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MARMON AEROSPACE & DEFENSE, 680 HAYWARD STREET, MANCHESTER NH 03103

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A MARMON WIRE & CABLE / BERKSHIRE HATHAWAY COMPANY

Drawing Number DN-40459		
Test	Requirement	
Components		
Conductor Constructon	8 AWG TC	
Conductor Stranding	133 Strands of 29 AWG	
Conductor Diameter	0.158" Min. - 0.164" Max.	
Conductor Resistance	.701 Ω / kft. Max. @ 20°C	
Insulation Material	XLPO	
Insulation Resistance	1000 MΩ / kft. Min.	
Insulation Diameter	0.225" Min. - 0.245" Max.	
Insulation Concentricity	70% Min.	
Insulation Wall Thickness	0.030" Min.	
Insulation Shrinkage	0.125" Max. @ 125°C	
Low Temp. (Cold Bend)	4 hrs @ -30°C, 4" Mandrel, 2.5 kV Voltage	No Cracking No Breakdown
Insulation Tensile Strength	1800 PSI Min.	
Insulation Elongation	150 % Min.	
Heat Aging	96 hrs @ 105°C Tensile Retention - 25% Max. Change Elongation Retention - 25% Max. Change	
Cable		
Component Color Code	White, Black	
Jacket Wall Thickness	0.070" Nom.	
Jacket Concentricity	70% Min.	
Final Diameter	0.580" Min. - 0.650" Max.	
Cable Print Legend	MARMON AEROSPACE & DEFENSE DN40459 G452741-1	
Low Temp. (Cold Bend)	No failure	
Thermoset Proof - Jacket	50% Max.	
Jacket Tensile Strength	1300 PSI Min.	
Jacket Elongation	160 % Min.	
Tear	35 lb/in thickness Min.	
Air Oven Aging Jacket Tensile Strength	60% of unaged Min.	
Air Oven Aging Jacket Elongation	60% of unaged Min.	
Heat Distortion	30% of unaged Max.	
Shrinkage	No failure	
Flame Propagation	No failure	

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	REV	DESCRIPTION	DATE	APPROVED
G452224	BMEWS	B	REVISED AND REDRAWN PER ENGINEER'S MARKED PRINT	89-2-15	JWN
	UEWR	C	REVISED AND REDRAWN PER WECO 136542	02-05-15	JEW
		D	SEE CN 7002635	02-07-17	JEW

PART NUMBER: SEE TABLE I

REV STATUS OF SHEETS	REVISION	D	D	D	D										SPECIFICATION CONTROL DRAWING
	SHEET NO.	1	2	3	4										

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN

☒ INCHES ☐ MILLIMETERS

TOL: ANGLES ± 1°
WHOLE NUMBERS ±
1 PLACE DECIMALS ±
2 PLACE DECIMALS ±
3 PLACE DECIMALS ±

CONTR. NO. F19628-88-C-0032

DR.		W.E.GILMOUR	88-12-29
CHK.		B.PATEL	88-12-29
APPD	CE	L.P.MAHONEY	89-05-01
	EE		
	ME	W.BLAKE	88-12-29

APPROVED MFG

Raytheon Company
Lexington, MA 02421

DRAWING TITLE

CABLE, SPECIAL PURPOSE, ELECTRICAL

SIZE	CAGE CODE	DRAWING NUMBER
A	49956	G452741

MATERIAL	BY DIRECTION OF	SCALE	WEIGHT	SHEET
		NONE		1 OF 4

NOTES:

1. DESCRIPTION. CABLE, SPECIAL PURPOSE, POWER, 600 V, AWG NO. 8, JACKETED, LOW SMOKE, ZERO HALOGEN, FIRE RETARDANT.

2. REFERENCED DOCUMENTS. UNLESS OTHERWISE SPECIFIED, REFERENCED DOCUMENTS OF THE ISSUE IN EFFECT ON THE DATE OF THE PURCHASE ORDER OR SUBCONTRACT, SHALL FORM A PART OF THIS DRAWING TO THE EXTENT SPECIFIED HEREIN. WHENEVER REFERENCED DOCUMENTS CONFLICT WITH THIS DRAWING, THIS DRAWING SHALL GOVERN.

3. REQUIREMENTS

3.1 GENERAL. CABLES SHALL BE CAPABLE OF SATISFYING THE REQUIREMENTS LISTED IN G452747.

3.2 DESIGN AND CONSTRUCTION. CABLE JACKET, CONDUCTOR INSULATION, BINDER, AND FILLERS SHALL CONFORM TO THE REQUIREMENTS OF G452747. CABLES SHALL BE IN ACCORDANCE WITH MIL-C-24643/3 EXCEPT FOR THE FOLLOWING MODIFICATIONS AND ADDITIONS.

3.2.1 CONDUCTORS. CONDUCTORS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF MIL-W-16878/16. CONDUCTOR INSULATION SHALL BE THERMOSET OR THERMOPLASTIC MODIFIED POLYOLEFIN.

3.2.1.1 INSULATION WALL THICKNESS. 0.030 INCH NOMINAL.

3.2.1.2 INSULATION TENSILE STRENGTH. 1800 PSI MINIMUM.

3.2.1.3 COLOR CODE. SEE TABLE I.

3.2.1.4 CONDUCTOR. 8 AWG, 133 STRANDS OF 29 AWG, TIN COATED COPPER.

3.2.2 FILLERS. FILLERS SHALL BE FLAME RESISTANT POLYPROPYLENE.

3.2.3 BINDER. CONDUCTORS SHALL BE COVERED WITH A WRAPPING OF 0.001 INCH THICK MYLAR TAPE WITH A 25 PERCENT OVERLAP.

3.2.4 JACKET. THERMOSET OR THERMOPLASTIC, MODIFIED, POLYOLEFIN, COLOR BLACK, WITH A WALL THICKNESS OF 0.060 INCH NOMINAL.

3.2.4.1 DIAMETER OVER JACKET. SEE TABLE I.

3.3 ENVIRONMENTAL. CABLE SHALL BE CAPABLE OF SATISFYING THE REQUIREMENTS LISTED IN G452747 AND THE BMEWS III ENVIRONMENTAL REQUIREMENTS LISTED IN G452401.

3.3.1 OPERATING TEMPERATURE RANGE. -30 TO 100°C.

3.4 MARKING. CABLE JACKET SHALL BE LEGIBLY IDENTIFIED AT INTERVALS OF NOT MORE THAN 24 INCHES WITH THE MANUFACTURER'S NAME OR SYMBOL AND PART NUMBER IN ACCORDANCE WITH MIL-STD-130. ADDITIONAL MARKING AT MANUFACTURER'S OPTION.

4. QUALITY ASSURANCE PROVISION SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF MIL-C-24643 AND G452747.

4.1 QUALITY ASSURANCE INSPECTION SHALL BE IN ACCORDANCE WITH G452747.

SUGGESTED SOURCE(S) OF SUPPLY:

GENERAL CABLE INDUSTRIES INC
CAGE CODE 71124
WILLIMANTIC, CT 06226
MFR PART NUMBER: SEE TABLE I

TYCO ELECTRONICS UK LTD
(FORMERLY RAYCHEM LIMITED)
CAGE CODE K1010
SWINDON, ENGLAND SN35HH
MFR PART NUMBER: SEE TABLE I

BICC CABLES LTD
CAGE CODE 0BL86
HELSBY, ENGLAND WA6 ODJ
MFR PART NUMBER: SEE TABLE I

ROCKBESTOS SURPRENANT CABLE CORP
CAGE CODE 90484
CLINTON, MA 01510
MFR PART NUMBER: SEE TABLE I

IDENTIFICATION OF THE "SUGGESTED SOURCE(S) OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM(S).

INCOMPLETE: MANUFACTURER'S PART NUMBER MISSING.
STS: SUPPLIER TO SPECIFY.

APPLICABLE DOCUMENTS:

G452401
G452747

TABLE I

RAYTHEON PART NUMBER	NUMBER OF CONDUCTORS	OD ±.035	CONDUCTOR COLOR CODE	MANUFACTURER'S PART NUMBER			
				GENERAL CABLE	TYCO	ROCKBESTOS	BICC
G452741-1	2	.615	WHT BLK	VTS	VTS	VTS	STS
G452741-2	3	.655	WHT BLK RED	VTS	VTS	VTS	STS
G452741-3	4	.725	WHT BLK RED BLU	VTS	VTS	VTS	STS