

P01	This quality note requires compliance with RESCO Defense Purchase Order Terms and Conditions.
P02	If the supplier of this item is the original manufacturer, please provide a packing slip and certificate of compliance. If the supplier of this item is an authorized/franchised distributor, please provide the packing slip from the original manufacturer with your company packing slip and certificate of compliance. The traceability documentation is not required if the component is not an electronic, electrical or electromechanical component.
P03	If the supplier of this item is the original manufacturer, please provide a packing slip and certificate of compliance. If the supplier of this item is an authorized/franchised distributor, please provide the packing slip from the original manufacturer with your company packing slip and certificate of compliance. In addition, supplier must provide a Certificate of Compliance for each shipment against this Purchase Order Line Item. The C of C must contain, as a minimum; PO number, name of manufacturer, specification or part number, specification or drawing revision, serial number, lot number or date of manufacture, and signature of the QA representative. Certificates of Compliance that include the phrase "to the best of our knowledge and belief" and similar expressions will not be accepted.
P04	Package in tape and reel per EIA-481
P05	Supplier must include a data sheet or catalog sheet with the shipment of the items.
P06	All constructions containing pure cadmium or pure zinc are prohibited. In addition, constructions made of tin and tin finishes are prohibited unless they contain a minimum of 3 weight percent lead. Items furnished under this purchase order shall not contain functional mercury or mercury contamination. The presence of functional mercury or mercury contamination such as metallic mercury or mercury compounds shall be cause for rejection.
P07	Parts must be from a single lot date code less than 36 months old. In addition, if the supplier of this item is the original manufacturer, please provide a packing slip and certificate of compliance. If the supplier of this item is an authorized/franchised distributor, please provide the packing slip from the original manufacturer with your company packing slip and certificate of compliance.
P08	This item has been identified as shelf life and age sensitive. Please provide product per the age requirement on the PO. Please provide a packing slip that includes the date of manufacture or cure date.
P09	Parts designated for waffle packs shall use black 2"x2" or 4"x4" ESD waffle packs. 1. Parts shall be packaged in black 2"x2" or 4"x4" conductive waffle packs. 2. The first die shall be oriented face up in the waffle pack in the upper left cell with the notched corner on the upper right. Filling shall go left to right, top to bottom. 3. The pocket size of the waffle pack shall be at most 30% larger than the die size and shall be sized to prevent the die from rotating in the pocket. 4. The pocket depth of the waffle pack shall be at least 5 mils greater than the height of the die, but not allow the die to flip/rotate during shipping. 5. The waffle pack part number is the choice of the supplier, unless otherwise specified within purchase order notes, but shall remain the same unless approved by Northrop Grumman. *Note: Goods procured under this purchase order may or may not be considered ESD sensitive, but may be stocked or manufactured with ESD sensitive material. Therefore, all Microelectronic Component Packaging (such as Waffle Packs, Covers, Clips, Gel-packs, enclosures, etc.) shall be manufactured using only ESD safe (Static-Dissipative/ESD Protective) material. It is preferred Microelectronic Component Packaging be visually identifiable as ESD safe by molded writing or ESD safe symbol. Microelectronic Component Packaging visually identifiable with Stat Pro® or Chip Sentry® will not need additional labeling as they are by default manufactured with ESD safe material from the manufacturer.
P10	Package in tubes
P11	Moisture sensitive parts. Package per appropriate MSL level in accordance with J-Std-033.

P12	<p>First Article Inspection (FAI) Supplier shall perform a complete first article inspection to applicable drawings, specifications, technical instructions, processing tooling, inspection and test equipment in accordance with the guidelines below to assure the product is compliant with the requirements of this purchase order.</p> <p>A) FAI applies to one piece from the first production run, unless otherwise set forth in this purchase order or through written waiver by quality assurance.</p> <p>B) Supplier is responsible for determining the method of performing FAI and shall use a form that contains all required information as specified in SAE AS9102. The supplier may request to use NGC's FAI form which satisfies this requirement.</p> <p>C) The FAI requirement, once invoked, shall continue to apply even after initial compliance. Any or all of the following events requires re-accomplishment of a full, or a delta/partial FAI for affected characteristics: (note: if none of the following conditions are applicable at the time of product delivery, first article inspection is not required.)</p> <ol style="list-style-type: none">1. A change in the design affecting form, fit, or function of the part.2. A change in manufacturing source(s), processes, assembly line, inspection method(s), location, tooling, or materials.3. A change in numerical control program or translation to another media.4. A natural or man-made occurrence which may adversely affect the manufacturing process.5. All repeat builds on production parts when more than two years has elapsed (or as otherwise directed in the purchase order) since the last production item was produced.6. When required as part of corrective action for a part number with repetitive rejection history. <p>D) Supplier shall segregate and identify the FAI unit in a separate container when delivering to Northrop Grumman. The FAI report is to accompany the FAI unit.</p> <p>E) Supplier shall assure that discrepancies and non-conformances, if any, discovered during the FAI are documented and dispositioned by the appropriate material review board (MRB) actions. (Supplier's MRB for supplier designed and Northrop Grumman MRB for Northrop Grumman design). Supplier rejection documentation, supplier's/Northrop Grumman dispositions, and supplier corrective action shall be part of the FAI package. The supplier shall re-do an FAI for those affected characteristics.</p> <p>F) First article reports for items controlled by CAD files (as referenced) in the item drawing shall record all dimensions listed on the drawing. A CAD file dimension (not listed on the drawing) is only to be documented in the inspection report when its respective tolerance is called out on the drawing.</p>
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P13	<p>Hazardous Materials The seller shall comply with applicable federal, state and/or local environmental laws and also have an ongoing safety program which meets or exceeds the requirements specified by applicable federal, state and/or local regulations. The seller's programs shall be subject to audit by Northrop Grumman and/or government representatives. A) prior to start of production the seller shall provide Northrop Grumman with a material safety data sheet (MSDS), in accordance with 29 CFR section 1910.1200, for each hazardous material used in the item(s) covered by this purchase order or used to manufacture the item(s). A material safety data sheet must also be furnished with each shipment. (forward to MSDS coordinator) Hazardous material includes any material defined under the latest version of federal standard 313 (FED-STD-313). See FAR 52.223-3. The subcontractor shall package all material IAW OSHA standards in order to prevent accidental exposure. All packages shall be identified as to its contents and labeled accordingly. For items procured under this order that are considered as explosives. The supplier is responsible to ensure that proper packaging, identification, marking, and shipment: A. Surface Shipment: I.C.C.T.C George Tariff (latest revision with supplements). Motor Carriers Explosive And Dangerous Articles Tariff (latest revision with supplements). B. Air Shipments: C.A.B. 82 Official Air-Transport Restricted Articles Tariff 6D Revisions. C. DTA Cars: are required inside each separate container identifying manufacturer's name, address, product, or item identity, lot control number, loading date, quantity and purchase order number. For a minimum of four (4) years after the completion of this purchase order, the seller shall keep on file at his facility, all the inspection and test records relative to material, processes, services, and parts shown on this purchase order.</p>
P14	<p>ESD Sensitive Products This product is considered to be susceptible to electrostatic discharge. The supplier is responsible for ensuring that the product is manufactured, tested, identified and handled in accordance with MIL-STD-1686, EIA JESD625-A, ESDS20.20 or equivalent. The Supplier shall maintain an ESDS program in accordance with MIL-STD-1686, MIL-HDBK-263, EIA -JESD-625-A, ESDS20.20 or equivalent and shall include procedures, personnel training records and calibration of ESDS testing equipment. The Supplier's ESDS program, including the procedures, is subject to Northrop Grumman's review throughout the period of this Contract.</p>
P15	<p>Export compliance requirements: *Country of Origin *HTS Code (Harmonized Tariff Schedule) *ECCN (Export Control Classification Number)</p>
P16	<p>SOURCE INSPECTION REQUIRED Contact RESCO Buyer prior to shipping parts.</p>
P17	<p>A Certificate of Compliance shall include the signature of the person authorized to certify compliance that materials furnished on this PO contain no evidence of mercury. Failure to comply shall result in the rejection of the material.</p>

<p>P18</p>	<p>Prior to starting welding the supplier must submit to Northrop Grumman Corporation and obtain approval of the following:</p> <ul style="list-style-type: none"> . A weld procedure, or procedures, for the appropriate material and material thickness per the requirements called out on the drawing. . A PQR, Procedure Qualification Report, for the above procedure. . A copy of the welder's certification to the procedure. <p>The supplier may not proceed with welding until approval has been granted. The procedure and qualifications must be to the government specification or commercial code that is dictated by the drawing. Failure to submit this procedure shall result in rejection of the material.</p> <p>Supplier must provide a welder certification document proving welder process acceptance by Northrop.</p> <p>Alternatively, supplier must provide certification that no welding was performed.</p>
<p>P19</p>	<p>SUPPLIER SHALL FURNISH TO PCS A TEST DATA PACKAGE CONSISTING OF THE FOLLOWING:</p> <ol style="list-style-type: none"> 1. COPIES OF ALL DATA FOR TESTS PERFORMED. THE COMPLETED DATA SHEETS SHALL BE COPIES OF THE ACTUAL DATA RECORDED ON THE TEST FLOOR AND NOT RETYPED DATA. 2. Each page of the test data package shall be signed and dated by the person recording the data. A stamp, unique to each employee, may be used as long as the vendor maintains a log showing which stamp relates to which employee. Initials may not be used in place of a signature. 3. EVIDENCE OF ACCEPTANCE OF THE TEST(S) BY SUPPLIERS QUALITY ASSURANCE. 4. NORTHROP GRUMMAN PURCHASE ORDER NUMBER. 5. NORTHROP GRUMMAN OR SUPPLIER'S PART NUMBER AS ORDERED. 6. SERIAL NUMBERS AND/OR QUANTITY WHEN APPLICABLE. 7. APPLICABLE DRAWING/SPECIFICATION REVISION LEVEL. 8. SIGNATURE/STAMP OF SUPPLIER'S RESPONSIBLE AGENT. 9. SUPPLIER'S NAME OR TRADEMARK AND/OR ID NO. <p>ONE (1) COPY OF THE TEST DATA PACKAGE MUST BE provided to Northrop Grumman. Send a copy with your product shipment, packaged in an envelope secured to the outside of the packing carton or container (whenever possible), and clearly mark the envelope "Certs Enclosed." WHEN A VENDOR COMPLIANCE REPORT IS REQUESTED IN LIEU OF ACTUAL TEST DATA, THE ACTUAL DATA MUST BE RETAINED BY THE VENDOR FOR AT LEAST SEVEN (7) YEARS AND MUST BE AVAILABLE (SUPPLIED) TO NORTHROP GRUMMAN ON REQUEST.</p> <p>The recording of numerical data shall follow per below:</p> <ul style="list-style-type: none"> * Record data to the precision (number of decimal places) indicated by the limits. * If the digit beyond the last place to be recorded is less than five, do not change the last place to be recorded. * If the digit beyond the last place to be recorded is greater than five, add one to the last place to be recorded. * If the digit beyond the last place to be recorded is a five with either no more digits beyond the five, or all digits beyond the five are zeros, add one to the last place to be recorded if it is an odd number. If the last place to be recorded is an even number, do not change the last place to be recorded. * If there are digits beyond the five, and they are not zeros, add one to the last place to be recorded. <p>Ex: A value of 1.45 with limits of 1.3 to 1.6 would be recorded as 1.4, while a value of 1.35 with limits of 1.3 to 1.6 would be recorded as 1.4.</p> <ul style="list-style-type: none"> * When the recorded value would equate to the lower control or upper control limit, record data to the precision of the limit plus one digit. Thus if the limits are 1.3 to 1.6 you would record two places for 1.3 and 1.6 or 1.31 and 1.60 which could never be recorded as 1.6 or anything other than 1.60. If the limits are 1.3 to 1.6 and the measured value was 1.61, you cannot round to 1.6 since 1.61 is out of tolerance. Do not round down to the upper control limit. Conversely, do not round up to the lower control limit.

P20	<p>The supplier is responsible to ensure that all special processes, performed either by the supplier or their subcontractor on Northrop Grumman designed machined/fabricated parts including mechanical parts mounted on printed wiring board assemblies, be approved by Northrop Grumman Corporation and/or accredited by the National Aerospace and Defense Contractors Accreditation Program (NADCAP). Any detailed information regarding NADCAP accreditation process including the audit schedule can be obtained from Performance Review Institute (PRI) at http://www.pri.sae.org.</p> <p>Applicable special processes include:</p> <p>Chemical Processing: Anodize, Cadmium Plating, Chromate Conversion, Copper Plating, Gold Plating, Nickel Plating, Electroless Nickel Plating, Silver Plating, Tin Plating, Tin, Hot Dipped, Tin-Lead Plating, Zinc Phosphorous Plating, Zinc Plating, Non-Destructive Testing: Dye Penetrant Testing, Radiography Examination, Magnetic Particle Examination, Ultrasonic Testing</p> <p>Heat Treatment: Heat Treat of 6061 Aluminum Assy's Using Forced Hot Air, Heat Treat of Mumetal, Heat Treat of Stainless, Heat Treat of Aluminum, Heat Treat of Aluminum Castings, Heat Treat of Steel, Heat Treat Titanium</p> <p>Welding: Fusion Welding of Aluminum, Fusion Welding of Aluminum Castings, Fusion Welding of Steel, Electron Beam Welding, Spot Welding Group 1, Class A, B & C, Spot Welding Group 2, Class A, B & C</p> <p>Brazing: Dip Brazing, Vacuum Brazing, Torch Brazing</p> <p>Painting: Metal Spray:</p> <p>Vendor must include with part shipment a certificate of conformance from the special process vendor stating that the process was NADCAP certified or approved by Northrop Grumman.</p> <p>If the item procured on this purchase order does not require any of the processes listed above then they do not apply. However if the vendor is subcontracting any of these processes they must then be flowed down to the subcontractor and do apply as written. Certification and process records shall be available for examination by Northrop Grumman. Records must be maintained for 10 years.</p>
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P21	<p>Parts designated for waffle packs (as of 11/24/2015)</p> <p>1. Parts shall be packaged in contrasting color, Black or Tan, as appropriate, 2"x2" or 4"x4" conductive waffle packs. Large Parts, Substrates, not fitting 2"X2" ESD Safe Waffle Pack in quantity dictated by PO shall be in 4"x4" ESD Safe Waffle Pack. 2. The first die shall be oriented face up in the waffle pack in the upper left cell with the notched corner on the upper left. Filling shall go left to right, top to bottom. 3. The pocket size of individual cavities in the Waffle Pack is dependent upon the size of the part contained. The cavity shall be large enough such that there is no pressure on the part preventing removal using a vacuum type pick-up tool. The cavity size with lid shall not allow the part to rotate more than 15 degrees, flip over face down or migrate to another cavity. All die shall be face up and in the same orientation. 4. The pocket depth of the waffle pack shall be at least 5 mils greater than the height of the die, but not allow the die to flip/rotate during shipping.</p> <p>5. The waffle pack part number is the choice of the supplier, unless otherwise specified within purchase order notes, but shall remain the same as the most recent previously delivered order from the supplier unless approved by Northrop Grumman. 6. Goods procured under this purchase order may or may not be considered ESD sensitive, but may be stocked or manufactured with ESD sensitive material. Therefore, all Microelectronic Component Packaging (such as Waffle Packs, Covers, Clips, Gel-packs, enclosures, etc.) shall be manufactured / supplied using only ESD safe (Static-Dissipative/ESD Protective) material. 7. Microelectronic Component Packaging shall be visually identifiable as ESD safe by molded writing or ESD safe symbol. Microelectronic Component Packaging visually identifiable with Stat Pro® or Chip Sentry® will not need additional labeling as they are by default manufactured with ESD safe material from the manufacturer.</p>
P22	Bulk packaging not allowed. Parts can not be loose in a bag or box. Parts need to be in a tray, reel or other individual packaging method that prevents damage.
P23	Part number supplied must match part number ordered. We can not accept "better than" parts.
P24	Parts must be from a single lot date code less than 24 months old. In addition, if the supplier of this item is the original manufacturer, please provide a packing slip and certificate of compliance. If the supplier of this item is an authorized/franchised distributor, please provide the packing slip or CofC from the original manufacturer with your company packing slip and certificate of compliance.
P25	A C of C stating compliance to DFARS 252.225-7009 Restriction on Acquisition of Certain Articles Containing Specialty Metals is required
P26	Supplier shall notify RESCO Defense in writing of all Process, Design, Fabrication, Testing, Facilities and Material changes affecting the form, fit, function, reliability or interchangeability of end item specification or drawing requirements. These changes must be evaluated by RESCO Defense prior to implementation by the supplier.
P27	<p>Whenever and/or wherever FOD entrapment or foreign objects can migrate, Seller shall maintain a FOD prevention program.</p> <p>Supplier shall assure that product is handled in accordance with ESD policies (if applicable) prior to packaging. Electronic/optical devices are required to be packaged in ESD protective material only.</p> <p>Packaging peanuts of any type are not allowed inside any of the packaging containers.</p>
P28	<p>Package in appropriate Waffle/Gel Pack based on the following:</p> <p>Total Order Quantity:</p> <p><50/ea = 10pcs per pack</p> <p>51-100/ea = 25pcs per pack</p> <p>101-500/ea = 50pcs per pack</p> <p>>500/ea = 100pcs per pack</p>
P29	Mark each package with label that reads "Warning: Fiber Optic Sensitive Component requires special handling".

P30	Material furnished on this purchase order shall not contain functional mercury in any form and shall be free from contamination by the presence of mercury. Material furnished on this purchase order shall also not contain any hazardous material or PVC (polyvinyl chloride).
P31	* All parts must have a date code in the format of YYWW where YY is the year and WW is the week of manufacture * CFC Free Products: The use of Ozone Depleting Chemicals (ODC's) in the processing of materials or products delivered on this order is not allowed. If the product requires the use of ODC's, this must be brought to the attention of the RESCO buyer prior to any such processing. The notification to RESCO must include the reason that alternative chemicals or processing cannot be substituted for ODC usage. Written authorization from RESCO is required prior to processing products for this order with ODC's. This requirement must be imposed on any sub-tier supplier or processor utilized in the production of this order.
P32	N/A
P33	Parts must be packaged in a JEDEC tray
P34	Outer packaging shall be marked with label "Warning: Highly Electrostatically Sensitive Device" or "Warning: Class 0 Electrostatically Sensitive Device." If unit packaging size permits labeling, it shall be labeled as "Warning: Highly Electrostatically Sensitive Device", "Warning: Class 0 Electrostatically Sensitive Device", "HESD" or "Class 0".
P35	THIS MATERIAL IS CONSIDERED HAZARDOUS and must be labeled properly. These requirements do not apply to an "article", as defined by the OSHA Hazard Communication Standard.
P36	Supplier must provide a lot date code for each item supplied
P37	Glass must be free of all scratches, chips or irregularities. Package this part to ensure damage does not occur during transport. Bulk packaging of loose parts is not acceptable.
P38	Marking and Labels from the Manufacturer shall be the only marking and labels allowed on Inner Packaging and product. No distributor or 3rd party marking/labels to be attached or written on the Inner packaging/container or product in anyway. Defacing or modifying the Manufactures "Like New Quality" Inner packaging labels or product labels is cause for rejection upon receipt. Inner packaging shall not be damaged. Damage to include but not limited to, (Major Dents (Large Baseball sized Dents), Leaks, chemical attacks, crushed sides, broken handles, smeared labels).
P39	Each part must have a label on the unit package that contains the he information as required by the engineering specification, drawing, or purchase order along with the PO number and revision and Country of Origin. Can not use waffle packs for shipment.
P40	A Certification of Compliance is required to assure items supplied have been painted to the specifications required by the drawing and P.O. The certificate shall include the signature of the individual authorized to certify compliance. Data used to support this certification shall be maintained and made available upon request. Certain drawings require Northrop Grumman Corporation qualification prior to implementation, if uncertain, contact the purchasing representative for clarification. Certain drawings require a data sheet be provided listing all the preparation steps, painting data and measurements performed (e.g. 7392A82, 5793186). Failure to comply with any of these requirements shall result in the rejection of the material.

P41	<p>Supplier shall furnish to RESCO Defense actual test data, or certified dimensional data for each unit supplied consisting of the following:</p> <ol style="list-style-type: none"> 1. Copies of all data for inspections or tests performed, final test or qualification, when qualification is required. 2. Evidence of acceptance of the test(s) by suppliers quality assurance. 3. RESCO Defense purchase order number. 4. RESCO Defense or supplier's part number as ordered. 5. Serial numbers and/or quantity when applicable. 6. Applicable drawing/specification revision level. 7. Signature/stamp of supplier's responsible agent. 8. Supplier's name or trademark and/or id no. One (1) copy of the test data package must be sent with the material, packed in an envelope secured to the outside of the packing carton or container (whenever practicable), and clearly marked "CERTS ENCLOSED". 9. Actual test / Dimensional data for each unit per all drawing requirements. Each shipment shall include Acceptance Test Data specified by the drawing. 10. A list of all equipment used, shall be recorded with calibration date and due date. Test results must be traceable to requirement document. The data must be organized to correspond to the requirement document and paragraph. In the event the drawing requires shipment of the data to the "buyer", "buyer" shall be interpreted as RESCO Defense and the data shall be shipped with the parts. When a supplier compliance report is requested in lieu of actual test data, the actual data must be retained by the supplier for at least seven (7) years and must be available (supplied) to RESCO Defense on request.
P42	Supplier to supply raw material certifications with shipment.
P43	The Supplier does not have Material Review under this Purchase Order/Subcontract. The Supplier shall take no action to repair the discrepancy, or ship the item "As Is" to RESCO until the Suppliers proposed disposition of the discrepancy and corrective action in the design or process has been approved by the Northrop Grumman Material Review Board.
P44	Component and part leads, pins, terminations, wires, lugs and tabs shall be solderable in accordance with IPC J-STD-002, Class 1.
P45	Component and part leads, pins, terminations, wires, lugs and tabs shall be solderable in accordance with IPC J-STD-002, Class 2.
P46	Component and part leads, pins, terminations, wires, lugs and tabs shall be solderable in accordance with IPC J-STD-002, Class 3.
P47	All deliverable material supplied with this provision, unless otherwise specified, shall be capable of passing the Solderability test in accordance with these referenced standards: Mil-Std-202, Mil-Std-883 and/or ANSI/J-001/002.

P48	<p>There shall be no changes in the part or assembly design affecting schematics, construction, material, travelers, test procedures, process or configuration after a manufacturer has qualified the design without written approval from Northrop Grumman (NGC). It is the responsibility of the supplier, before accepting any new or follow-on order to submit all changes, regardless of class, that have been made since and not previously submitted to NGC. In the event the supplier elects to subcontract an item which includes design responsibility, the supplier shall include the provisions of this requirement in his subcontract. A class I change is defined as a change that affects the form, fit, or function of a design, application at the next higher assembly, reliability or the interchangeability of the part. It typically involves a change to the parts list, traveler or manufacturing process and/or affects the ability of the supplier to rework product using the previously established processes or parts lists. Design improvements can be considered class i or ii depending on their impact to the parts list and processes. Class II changes are all other changes, except for documentary, that are not considered to be class I. Product that contains class ii changes may be shipped after concurrence with class II classification has been received from NGC. To request Northrop Grumman approval of a class I or notification and concurrence of a class II configuration change, a supplier shall submit a Vendor Engineering Change Request (VECR) to the buyer. The request shall state the intended change reason and effect(s). All changes to a qualified baseline design are subject to approval by Northrop Grumman. After submittal of engineering change, a supplier may, at their own risk, incorporate said changes into product in-process but may not ship until written approval is obtained from Northrop Grumman.</p>
P49	<p>Supplier must provide a CofC stating that each lot of material being supplied contains neither metallic mercury, cadmium, hexavalent chromium nor any compounds of these elements. A ROHS/ROHS2 certification is acceptable for this requirement.</p>
P50	<p>Serial number control is required. All parts, shipping documents, and unit containers shall be identified with the serial number. Serial numbers should be assigned in the supplier's format unless otherwise stated in the drawing, or purchase order.</p>
P51	<p>Product shall be manufactured and inspected to the requirements of IPC J-STD-001 and IPC-A-610, Class 3 unless otherwise specified on the drawing. When IPC J-STD-001 is required, supplier shall utilize assemblers, solderers and inspectors who are certified to IPC J-STD-001 and shall provide evidence of compliance upon request.</p>
P53	<p>Every Finished Goods Assembly shall be identified on the part, with its Part Number, Unique Serial Number, and Revision, in both Alpha / Numeric Characters and 128 Bar Code.</p> <p>Every Programmed Device shall be identified on the part, with its Part Number, Revision/Version, Check Sum, and Reference Location, in both Alpha Numeric Characters and 128 Bar Code.</p> <p>Materials and parts used shall be traceable by lot number, material type, specification applicable change letter or numbers, heat number, etc., and traceable to records of acceptance. Assemblies and parts fabricated by the seller shall be traceable to the lot of materials used. For raw materials, this clause applies to traceability of materials to heat or lot number, manufacturing and inspection processes, test results, and records of acceptance. The supplier shall deliver a data package containing the traceability information with the material that certifies the pedigree of the parts & materials. This program requires microcircuit traceability to the wafer lot. (When possible, it is preferred that the procured parts are from one wafer lot.) Wafer lot traceability is to be included with the traceability records. The parts are to be segregated and individually packaged by the wafer lot(s). This requirement is in addition to any other traceability notes that show up on the purchase order or the drawing.</p> <p>Any Part, Component, Assembly, or Programmed device, which due to physical limitations cannot be identified on the part, shall be bagged and tagged with the Part Number, Revision or Lot/Batch Code or Manufactured Date Code and the Manufactures Identification.</p>

P54	All required electrical, functional, environmental, mechanical, nondestructive (NDT) or other tests shall be performed as applicable per procurement documentation. Each shipment shall be accompanied by a legible and reproducible copy of test reports identifiable with specification test requirements and materials submitted. Each shipment shall be accompanied by a legible and reproducible copy of dimensional inspection reports referencing all notes. These reports shall be authenticated by a representative of the agency performing the test.
P55	Supplier must identify all primary packaging with a caution label and use of keyword ***CAUTION - OPTIC*** Optical products shipped under this Contract shall be individually packaged to protect the component from contamination, damage, or mishandling per the engineering drawing specification or with use of alternate packaging. The preferred packaging method shall be lens tissue in sufficient layers to prevent damage; other methods may include membrane boxes of a suitable size and shape, cotton bags, individual plastic boxes with molded inserts, etc. The use of bulk packaging such as "egg cartons" or "waffle trays" is not permitted.
P56	Substitutions for the items listed in this purchase order are not acceptable. Substitution includes items produced by a manufacturer different from that identified.
P57	Seller shall maintain a program for the prevention and control of FOD (Foreign Object Debris / Damage). The program shall define processes incorporated into production/manufacturing activities to prevent the introduction of foreign objects into any deliverable item. As a minimum, the program shall provide for identification of FOD sensitive areas, deployment of FOD collection containers, where deemed appropriate by local manufacturing policy/management and training for all personnel working in production/manufacturing areas. Buyer reserves the right to perform an evaluation on the effectiveness of this program.
P58	Supplier will furnish a Certificate of Compliance for the raw materials purchased. The certificate shall contain the following information: 1. The suppliers name , contact information, date of certification, printed name and signature of individual authorized to certify compliance. 2. RESCO Defense P.O../ line item number, item nomenclature, quantity, material dimensions and material heat or lot number. 3. Material specification per the drawing or PO requirements
P59	This item is a Lead Free Assembly. Ensure part is manufactured to drawing specifications.
P60	SOURCE INSPECTION REQUIRED Source Inspection required for Precap and Final Inspections.
P61	Commercially available parts (COTS) supplied to this order must be an EXACT MATCH to the part number ordered. Parts and sub-tier parts supplied to this order shall be of the same revision/version for like parts, with each revision/version identical in form, fit, function, appearance, reliability, and interchangeability. Embedded software or firmware supplied under this order shall be of the same revision/version for like parts. For those parts previously supplied to the Buyer, the Seller shall, before accepting any follow-on order, notify the Buyer of any changes that have been made to the COTS product, since the last shipment, that would impact identity.
P62	The Supplier shall have an established, active safety program designed to protect the Suppliers employees from injury(s). The program shall address all aspects of safety, such as fire, chemical spills, protective clothing, eye protection, etc. The program shall have a safety committee, composed of personnel who represent multiple departments of the Supplier and who meet regularly to discuss and resolve safety issues.
P63	Supplier must provide Group A test data.
P64	Supplier must provide Group B test data.

P65	<p>In-process inspection of article(s) to be delivered under this subcontract/purchase order is required. In-process inspection shall verify acceptability of quality characteristics which cannot be readily inspected in completed article(s) and shall be conducted at or before the last point at which acceptability of the quality characteristic can be verified. The supplier shall promptly notify quality assurance of receipt of this subcontract/ purchase order, to facilitate mutual and concurrent planning for in-process inspection. The supplier shall notify quality assurance at least 2 working days in advance of article(s) being ready for In-process Inspection. At the time of In-process Inspection, the supplier shall furnish:</p> <ol style="list-style-type: none"> 1. Latest revision of subcontract/purchase order 2. Records of completed manufacturing, inspection and test for the article(s) 3. All applicable drawings, specifications and standards 4. Necessary facilities, equipment and personnel qualified to demonstrate conformance of the article(s) to all subcontract/ purchase order requirements <p>RESCO Defense reserves the right to waive in-process source inspection without prior notice to the supplier. Supplier will provide evidence of In-Process Inspection with each shipment of hardware. This evidence can be an acceptance stamp on the shipping documents or a copy of the source inspection form.</p>
P66	<p>All construction and finishes containing pure zinc, pure cadmium or unplated brass are prohibited. Pure tin is also prohibited unless a minimum of 3% weight percent lead (Pb) is present. The use of Prohibited Materials in the processing of materials or products delivered on this order is not allowed.</p>
P67	<p>The supplier shall demonstrate conformance of the items produced to this purchase order. The supplier shall demonstrate by an inspection process (CMM or equivalent) that all design features contained in the electronic solid model database files are present in the product presented to RESCO for acceptance. The supplier shall create a "road map" from the solid model file that identifies feature and critical dimensions, drawing notes and default tolerance values as measured from #datums# referenced on minimally dimensioned prints and recorded in the CMM output report. This will be verified by RESCO inspection.</p>
P68	<p>Effective immediately and until further notice, this item cannot be procured and/or manufactured through\with ITT Cannon connector content.</p>
P69	<p>Pre-cap inspection/witnessing is required. Supplier shall provide sufficient advance notice to RESCO procurement to permit scheduling of source inspection. A legible and reproducible copy of the completed material acceptance report or source inspection waiver letter must be submitted with each shipment. Pre-cap source inspection is not required for non-custom, standard 'off the shelf' parts procured from fully qualified part manufacturers of QPL/MIL/DSCC products.</p>
P70	<p>Unless approved in writing by buyer or specifically required by the part drawing or assembly drawing and associated parts list, no material delivered under this order may utilize: - solders & finishes, (including, but not limited to, solder balls/columns for area arrays or components) containing less than three percent (3%) lead (Pb) by weight (Pb-free), except solder pre-forms used for die attach within a microcircuit - bright tin (Sn) surface finishes as defined by ASTM B545-97 Verification of solder ball composition on area array packages and component termination composition on fine pitch components identified in 499-001854 is required. Verification is required on one (1) piece from each date code and/or lot code and shall be performed using x-ray fluorescence (XRF) equipment or Northrop Grumman-approved equivalent. The entire date code and/or lot code under verification shall be rejected if the one (1) item under verification does not meet the material composition identified in 499-001854 and shall be accepted if the one (1) item under verification meets the material composition identified in 499-001854. Materials which fail these tests/inspections shall not be delivered under this purchase order. Verification results shall be delivered with the part. The seller shall notify the buyer of any planned material changes to lead (Pb)-free finishes, platings, or solders associated with the part number. These changes must be evaluated and approved by Northrop Grumman prior to completion of order.</p>

P71	<p>When equipment is delivered, a Certificate of Calibration must be included listing equipment (traceable to NIST) used for calibration. Out of tolerance data must be supplied if equipment supplied was out of tolerance before calibration.</p> <p>The following represent priority order for calibration accuracy:</p> <ol style="list-style-type: none"> 1. Manufacturer's instructions 2. MIL-STD-45662A, ANSI Z540-1, ISO 10012 or ANSI/ISO 17025 3. If none of these are applicable, use at least a 4:1 accuracy ratio
P72	<p>Supplier shall provide a copy of the Die Topography with every shipment. Copy must be legible, include pin outs and shall be representative of parts shipped.</p>
P74	<p>NSD-106 Supplier Failure Analysis and Repair Report</p> <p>The level of Failure Analysis Corrective Action and Reporting (FRACAS) required shall be based on the specific designators as called out on the purchase order. As indicated below these designators require varying reporting requirements and are dependent on the design cognizance and capability of the supplier. The supplier shall provide a failure analysis of each item returned for rework or replacement as indicated below and shall report the results of each analysis in the supplier's format, or in NSD supplied format when required. The completed legible and reproducible report form shall accompany each item returned to NSD when practical. When unable to complete the analysis report at the time of item return to NSD, an estimated date of completion of the report shall be transmitted to the NSD buyer/subcontract administrator. If the failure mode/location cannot be verified, the supplier shall write 'unable to verify' in the failure symptom block. In addition, the test methods used which were unable to verify the failure will be summarized in the report. The supplier shall provide a complete failure analysis for each verified failure indicated by the table below. This analysis must include: the actual cause of the failure including the failure mechanism, corrective action(s) taken to preclude a recurrence of the failure, and the date code or serial number effectivity of the corrective action(s). Where NSD has design cognizance and/or the supplier has no diagnostic test capability, it is recognized that the supplier's ability to determine the actual failure mechanism may be limited. The supplier shall provide a description of the rework/repair required to return the assembly to the operational requirements of the procurement specification with the returned unit. A list of all replaced electronic components including: part number, date code, manufacturer and probable cause of the failure mode is required.</p> <p>FRACAS LEVEL REQUIRED</p> <p>A</p> <p>WHERE NSD HAS DESIGN COGNIZANCE NSD returned units, Failure Analysis for Workmanship, when requested by NSD on the return documentation.</p> <p>WHERE SUPPLIER HAS DESIGN COGNIZANCE NSD returned units, Failure Analysis for Workmanship, when requested by NSD on the return documentation.</p> <p>B</p> <p>WHERE NSD HAS DESIGN COGNIZANCE NSD returned units, Failure Analysis for Workmanship, all units returned.</p> <p>WHERE SUPPLIER HAS DESIGN COGNIZANCE NSD returned units, Failure Analysis for Workmanship, all units returned.</p> <p>C</p> <p>WHERE NSD HAS DESIGN COGNIZANCE Supplier Manufacturing Acceptance Test Failures, Failure Analysis for Workmanship, when there is a failure trend.</p> <p>WHERE SUPPLIER HAS DESIGN COGNIZANCE Supplier Manufacturing Acceptance Test Failures, Failure Analysis for Workmanship, when there is a failure trend.</p>
P75	<p>Independent testing is required prior to shipping the printed wiring boards. All test results and test specimens shall accompany this shipment. One set of Quality Conformance Test Coupons from each date code along with copy of the master drawing shall be submitted to a DESC approved test laboratory for "as is and thermal stress" testing per Mil-PRF-31032, Mil P 55110, LPS 990555 and/or LPS 990955 as applicable, and the master drawing requirements.</p>

P76	<p>Printed Wiring Boards Lot Acceptance Quality Conformance Test Labs Quality conformance test tabs representing boards that have passed Group A testing shall be submitted with each date code. When 50% or more of the tabs and boards are rejected the entire lot shall be rejected. When 20 to 50% of the lot is rejected, all remaining boards are suspect and shall be submitted to a one time lot jeopardy testing. This test shall be of one bare board per panel thermally stressed and microsectioned.</p> <p>Electrical Testing Net list electrical testing shall be in accordance with the master Drawing and IPC 9252A. Electrical test certifications shall accompany each shipment and for all boards built. As a minimum the certification shall as a minimum include, test parameters, date code and serial number and accept and reject data.</p> <p>Packaging and Preservation Each board shall be individually packaged in a static shielded zip lock bag. Each bag shall have a moisture indicator. Desiccant can be with 3 M brand oxidation paper or desiccants to reduce tarnish and preserve solderability. Rigid, rigid flex and micro strip boards shall be packaged in a manner to help prevent damage during shipping by using rigid material on the top and bottom. Metal staples and tape should not be used on the board. The materials utilized for packaging shall not be of out gassing materials.</p> <p>Identification Each bag shall have a identification label consisting as a minimum, supplier name or logo, NGC part number, purchase order, lot / date code and serial number.</p> <p>Modifications Etch cuts as specified on the master drawing maybe accomplished electronically provide enough clearance is maintained through the hole.</p>
P77	Furnish Test Reports showing actual test results for the test and/or inspections required by the Purchase Order. Reports must identify the testing organization, the tests performed and procedures used, the test date, and include the names of the person(s) conducting the tests (and qualification level(s), if applicable).
P78	Furnish reports of the chemical analysis obtained from the actual pouring of the furnace, crucible, or ladle. Reports must show the heat lot number (as marked on the raw material) and RESCO Purchase Order number.
P79	The supplier shall submit a copy of the top and bottom master pattern, solder mask (if required) and silkscreen (if required) artwork with this shipment. These copies shall be one up images and will remain the property of Northrop Grumman. Once copies are delivered, all subsequent hardware deliveries where no changes have been made shall have the following (or equivalent) statement on the supplier's packing slip and/or certification: "Master pattern, solder mask and silk screen were submitted on (date)_____ against Purchase Order _____." All PWB fabrication shall be accomplished using Northrop Grumman released/approved Gerber Data.
P80	Parts shall be packaged within a heat-sealed bag with a Desiccant and Indicator.
P81	Critical characteristics (key characteristics), as designated by the drawing or purchase order, shall be measured and recorded. Critical characteristics data shall be provided to the buyer for review and acceptance. Data should be sent with the product being delivered.
P82	<p>Seller shall submit a certificate with each shipment stating that the deliverable product does not contain the following prohibited materials</p> <ul style="list-style-type: none"> Pure cadmium Pure zinc Pure tin <p>In addition, if the product does contain tin or tin finishes, the Seller shall submit a certificate with each shipment stating that the deliverable product contains a minimum of 3 weight percent alloying element(s), i.e., lead, silver, etc.</p>

P83	All material delivered under the RESCO Purchase Order shall be authentic and traceable to the original manufacturer or mill/plant for raw materials. If documented acquisition traceability is not available, Supplier shall not accept the Buyer's Purchase Order or Agreement unless Supplier requests and receives Buyer authorization. If the supplier of this item is the original manufacturer, please provide a packing slip and certificate of compliance. If the supplier of this item is an authorized/franchised distributor, please provide the packing slip from the original manufacturer with your company packing slip and certificate of compliance.
P84	Supplier shall obtain RESCO Defense consent to deliver a product configuration other than what is specified on the drawing. Products/systems have been designed to function with the supplier's catalog no., part no., revision level, or date code specified on this drawing. To ensure the continued performance and reliability of the end product, it is essential that the supplier notify and provide documentation to RESCO Defense of any process/hardware/software/firmware configuration changes to their product so they may be evaluated for potential impact to our application. Requests for review of configuration changes and consent to ship shall be made to the address shown on this PO.
P85	Product requires manufacturing by a government qualified products list (qpl) supplier this product must be manufactured by a qpl supplier. The name of the manufacturer must be furnished with the shipping documents, or be identifiable with the product.
P86	Each container of hazardous material must be labeled in accordance with the Federal OSHA Hazard Communication Standard, 29CFR1910.1200, to include: (1) identity of the hazardous chemical(s), (2) hazard warnings, and (3) name and address of the chemical manufacturer, importer, or other responsible party.
P87	This is limited life material. Material shall be marked in accordance with the requirements specified in the purchase order.
P88	Verification of solder ball composition on area array packages and component termination composition on fine pitch devices is required on one (1) piece from each date code and/or lot code and shall be performed at the procurement receiving site using X-ray fluorescence (XRF) equipment. The entire date code and/or lot code under verification shall be rejected if the one (1) item under verification does not meet one of the following material compositions: tin-lead with at least three percent lead by weight or gold; otherwise, the entire date code and/or lot code under verification shall be accepted. Materials which fail these tests/inspections shall not be delivered under this Purchase Order. Verification results shall be shipped with the parts.
P89	A manufacturer Certificate of Conformance must be included with the shipment.
P90	Supplier shall provide material, physical and chemical certifications with actual physical and/or chemical results with each shipment as required by the specification. If the shipment contains multiple processed lots within each manufactured lot, each processed lot must be segregated and identified to maintain complete traceability in each shipment. Certifications may be on same page as Manufacturer's C of C if appropriate for the Manufacturer's procedures.

P91	<p>Individual unit packaging per MIL-STD-2073-1, Standard Practice for Military Packaging, Method 33 is required. Any packaging displaying evidence of being stapled shall result in the O-ring being scrapped at the supplier's expense.</p> <p>Each unit package shall be marked per MIL-STD-129, Military Marking, and include the following information as a minimum:</p> <ul style="list-style-type: none"> Manufacturer's Part Number Specification number and revision level Customer's part number and /or contract number Manufacturers name or CAGE code Cure Date Material Batch Identity Rubber class designation per ASTM D1418 <p>Unless otherwise specified, the requirements of MIL-STD-413, Visual Inspection Guide for Elastomeric O-Rings, apply. O-rings and seals must meet the requirements of SAE ARP5316, Storage of Elastomeric Seals and Seal Assemblies, except that the maximum storage life for most components is 10 years or 40 quarters (Exception: fluorocarbon, fluorsilicone, ethylene propylene, and silicone O-rings and seals, prepackaged and stored per SAE ARP5316 shall be permitted a maximum storage life of 20 years or 80 quarters). Material delivered under this purchase order shall have at least 70% of the shelf life remaining at the time of delivery, unless approved in advance by buyer. Failure to comply with any of the above may result in the rejection of the material.</p>
P92	Supplier must provide Group C test data.
P93	Supplier shall ensure RLB1 Rolls are supplied to RESCO in a continuous 3'X30' (3Foot X 30Foot) roll, splices or several sheets taped together shall not be allowed. Any splices found upon receipt shall be cause for rejection. Supplier shall also attain and provide evidence of the Manufacturing date of material from the Manufacturer.
P94	<p>Calibration System Requirements</p> <p>A. Seller shall be responsible for the calibration, accuracy, validation, and maintenance of any equipment, tooling, or gauges utilized by Seller to produce, inspect, or test articles to be delivered under this Purchase Order / Subcontract.</p> <p>B. Seller's equipment calibration system shall be in accordance with one of the four requirements listed below:</p> <ol style="list-style-type: none"> 1. MIL-STD-45662A or 2. ANSI/NCSL Z540 or 3. ISO 10012-1 4. ISO 17025
P95	<p>Buyer shall approve special processes performed by Seller, or any of its sub-tier suppliers, including the system/procedures used to control special processes. Processes requiring Buyer approval include:</p> <ol style="list-style-type: none"> 1. Welding, destructive physical analysis, brazing, dye penetrate inspection, painting, radiographic inspection, plating, heat treating of metals, casting, chemical surface treatments, forging, contamination control, bonding, magnetic particle inspections, conformal coat, composites, soldering, pressure test, and ultrasonic inspection 2. Any other processes defined in the Purchase Order / Subcontract
P96	B. Buyer approval of special processes shall not relieve Seller of responsibility for exercising the control measures necessary to ensure delivered items conform to the requirements of the Purchase Order / Subcontract.

P97	<p>End Item Data Package</p> <p>A. An End Item Data Package (EIDP) shall be developed, maintained, provided and/or delivered at or before final acceptance of product by the Buyer, which incorporates the following information:</p> <ol style="list-style-type: none"> 1. Seller Certificate of Conformance 2. Specification/drawing number and revision 3. As-built configuration (Indented Parts List – may not be required for software) 3. Proof of traceability requirements compliance (serial numbers, lot numbers, batch number, software version, etc.) 4. Documented non-conformances 5. Documented open action items 6. Incorporated Change Orders (Engineering Change Proposals (ECPs)) 7. Certificate of Conformances from sub-tier suppliers with objective evidence to validate the certificates 8. Type of inspection performed and recorded results 9. Type of test performed and recorded results 10. Total quantity of items tested, quantity of items accepted, and quantity of items rejected 11. Applicable Government Industry Data Exchange Program (GIDEP) alerts, waivers, deviations, and incident reports 12. Verification of compliance with useful life requirements, e.g., total operating time, thermal cycles, vibration time 13. Certificate of Traceability if required on the Purchase Order / Subcontract
P98	Buyer shall refuse to accept item if Seller fails to submit certifications, documentation, test data, or reports specified in the procurement document. Documentation shall include Buyer's source inspection if such source inspection is performed.
P99	Written approval shall be obtained from Buyer for any deviations to the EIDP.
P100	Workmanship shall be in accordance with IPC/WHMA-A-620 "Requirements and Acceptance for Cable and Wire Harness Assemblies".
P101	<p>A. Material submitted with each shipment shall have had solderability testing performed in accordance with one or more of the following specifications:</p> <ol style="list-style-type: none"> 1. MIL-STD-750, Method 2026 2. MIL-STD-883, Method 2003 3. MIL-STD-202, Method 208 4. MIL-P-55110 5. MIL-P-50884 6. J-STD-001 7. J-STD-002 8. J-STD-003 <p>B. Seller shall supply a copy of the certification by an accredited agency to one or more of the specifications listed in article A with each order.</p> <p>C. If, during the life of that Procurement Document, the certification is revoked or the certification expires, all efforts against this Procurement Document shall be stopped.</p> <ol style="list-style-type: none"> 1. Buyer shall be notified in writing within twenty four hours.
P102	<p>A. Printed Wiring Boards fabricated under this Purchase Order / Subcontract shall comply with the requirements of IPC-A-600 "Acceptability of Printed Boards", IPC-6011 "Generic Performance of Printed Boards", and IPC-6012 "Qualification and Performance Specification for Rigid Printed Boards".</p> <p>B. Coupons shall be included if defined on the drawing with each shipment.</p>
P103	Supplier shall submit test plan to RESCO for approval by Northrop Grumman - Mission Assurance Group Sykesville prior to testing of the initial item built by the supplier.

P104	The supplier shall furnish the date of battery manufacture or the date on which the battery was recharged. The preferred method is by noting this information on a label affixed to the battery or the device containing the battery. In the alternative, the information may be supplied in a certificate of conformance or similar document.
P105	N/A
P106	If the supplier of this item is the original manufacturer, please provide a packing slip and certificate of compliance. If the supplier of this item is an authorized/franchised distributor, please provide the packing slip or CofC from the original manufacturer with your company packing slip and certificate of compliance. The traceability documentation is not required if the component is not an electronic, electrical or electromechanical component.
P107	Parts must be less than 24 months old at the time of receipt at RESCO. The part or the unit packaging must have the manufacturer date code on it. In addition, if the supplier of this item is the original manufacturer, please provide a packing slip and certificate of compliance. If the supplier of this item is an authorized/franchised distributor, please provide the packing slip or CofC from the original manufacturer with your company packing slip and certificate of compliance.
P108	All constructions and finishes containing pure cadmium or pure zinc shall be prohibited.
P109	Constructions and finishes containing pure tin shall be prohibited unless they contain a minimum of 3 weight percent alloying element(s), i.e., lead, silver, etc.
P110	Supplier will furnish actual chemical/physical test reports for the raw materials specified in the drawings & specifications. Test reports are to be actual attribute data. When parts are serialized or lot numbered, the serial or lot numbers shall be included in the reports.
P111	Supplier shall package in Static Dissipative Cover and Waffle Pack H20-026-15-74D10 or H20-026-12-74D10
P112	Each spool of wire must be labeled with the following info: <ol style="list-style-type: none"> 1. Description 2. Size 3. Part # 4. Length 5. P.O. # 6. MFG'S Lot #, Date MFG.
P113	For quantities greater than 1,000 pieces Tape & Reel Packaging per EIA-481 is required. For quantities of 1,000 pieces or less, Tape & Reel is not required but parts cannot be bulk packaged.
P114	If the supplier of this item is the original manufacturer, please provide a packing slip and certificate of compliance. If the supplier of this item is an authorized/franchised distributor, please provide the packing slip or CofC from the original manufacturer with your company packing slip and certificate of compliance.
P115	A completed QCM-229 Form must be included with the shipment. For serialized items, one QCM-229 form must be completed for each item.
P116	Parts need to be packaged in a waffle pack or tray.