

CREE **LIGHTING**

A COMPANY OF *IDEAL INDUSTRIES, INC.*

Commercial Lighting

Packaging, Labeling, and Shipping Requirements

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1.0 Introduction

The following labeling requirements are for all production materials entering Cree Lighting's manufacturing facility in Racine, WI. These requirements are effective May 2018.

These requirements were developed in conjunction with AIAG standards and Cree Lighting's Operations Department. For questions, please email or call your commercial contact. For additional information, please visit the web at <http://www.aiag.org/>.

1.1 Compliance

All shipments to the Cree Lighting Facilities must be compliant with these requirements, as shipments will be continuously monitored. Non-compliant shipments may be rejected by receiving at Cree Lighting's discretion and returned to the supplier for repackaging, relabeling, or disposal. **Rejected and returned shipments will be billed to the supplier's shipping location.** Recurring violations will require a written corrective action plan approved by Cree Lighting.

When necessary, Cree Lighting Operations may grant exceptions to these requirements with a prior written request from the supplier. **Please contact your commercial contact for exceptions.**

1.2 AIAG Guidelines

Cree Lighting requests compliance to the following Automotive Industry Action Group (AIAG) packaging and labeling standard *B-10: Trading Partners Labels Implementation Guidelines 6/04*. A Copy of this standard may be obtained from AIAG per the contact information listed above.

The B-10 is the preferred format for shipping labels. Both label- and tag- marking methods for shipping containers and pallets of parts and primary metals are covered in this guideline under the general term "label," however, the B-10 is not a label, but rather a methodology for designing trading partner shipping labels using the ANSI MH10.8.1 U.S. national, cross-industry standard, developed and maintained by the ANSI committee MH10/SBC-8.

B-10 outlines the requirements for design and for printing to ensure scan ability of Code 39 bar code symbols and provide consistency of label formats. The physical parameters of the symbols and labels are provided and a bar code quality level is specified. The orientation and placement of AIAG B-10 - Trading Partner Labels (B-10-TPL) on shipping containers are specified.

Packaging

2.0 Primary Container Requirements

Packaging design is the responsibility of the supplier. The supplier must ensure that the parts and all packaging shipments are received in acceptable (undamaged) condition. Some primary containers will carry the part from shipping to final assembly by the line operators. It is vital that the packaging maintains part quality through transit, storage, and multiple handlings.

- The compression strength of the container(s) must support contents triple stacked up to 100" in height to allow for maximum trailer density and storage.
- Suppliers are encouraged to investigate the benefits of specifying corrugated material based on the ECT Edge Crush Test (see AIAG RC-7, Section 3.1) and fiber-based corner posts (see AIAG RC-7, Section 3.3) for additional strength.
- Container(s) must be modular to the standard **48"x40"** pallet footprint. Any exceptions must be approved by Cree Lighting prior to shipment. Containers should not hang-over the edge of the pallet or leave more than 2" of the pallet footprint uncovered on any side when feasible.
- Container(s) should be completely filled by product or void fill. Note this may require redesign of packaging to eliminate void space, part shifting, and/or container crushing.
- Containers that are intended to be manually-handled should **weigh no more than 25 lbs.** If the container exceeds 25 lbs., it must have a brightly colored label affixed to the container specifying "Heavy" or similar language to warn operators prior to lifts. The unsupported bottom of the container must be able to hold the weight of the contents.

All packages must be tested under simulated real-life conditions to ensure that the packages and shipments reach their intended point-of-use in good condition and without damage,

2.1 Selection of a Primary Container

The appropriate size, strength, and type of primary container must be chosen to support the mode of transportation, government container regulations, and distance of travel to destination point. The determination must be made to pack the parts in a small, manually-handled tote or a large, mechanically-handled bulk container. Factors to consider in determining the primary container size include: piece weight, shipping/release quantities, and presentation to the operator. The component supplier is encouraged to participate in pre-production build packaging evaluations at Cree Lighting's manufacturing site to validate the packaging material design and ergonomic acceptability.

2.1.1 Container Size

Cree Lighting will only accept primary containers that are modular to the standard 48”x40” pallet footprint. Containers must be properly palletized in level layers to allow for stacking and proper utilization of transportation.

2.1.2 Container Sealing

Acceptable methods for sealing a container are strippable reinforced tape, spot gluing, stretch wrap, or industrial stapling. Container sealing is the responsibility of the supplier. **Containers not sealed properly will be returned to the supplier, with return shipping cost billed to the supplier’s shipping location.**

3.0 Internal Part Protection Required

Parts must be secured and protected in the primary container and be free of damage upon delivery. Internal dunnage must not restrict part presentation to the operator.

- Whenever possible, paper-based dunnage is preferred.
- Whenever possible, recycled content materials should be used.
- For parts requiring plastic packaging materials, the material must be designed for recyclability and ease of segregation. Whenever feasible, all plastic packaging must be identified on the physical part or packaging drawing by resin type according to the symbology established by the Society of Plastics Industry (SPI). (See AIAG RC-7, Appendix 4).

4.0 Pallet Requirements

The pallet design is a critical element to assure safe material handling, overall package system performance, and part quality. The below are requirements for all pallets entering Cree Lighting’s facility in Racine:

- All shipments originating in the United States to Cree Lighting should be on a **Grade B** or better 48”x40” **heat treated** pallet.
 - Exceptions are KanBan systems with prior approval.
 - Email or call your Cree Lighting commercial contact for written approval prior to shipment if a unique size pallet or other deviation from the above requirements is required.
- All shipments (regardless of country of origin) to Cree Lighting should be on **Grade B** or better 48”x40” pallet.
 - Pallets shall not have broken or damaged slats

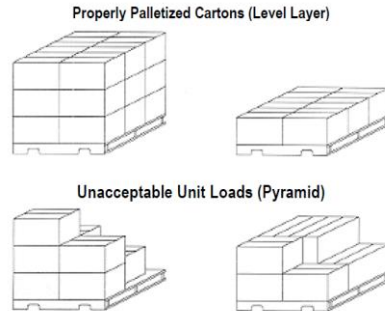
- Pallet runners should be either undamaged or repaired in such a way that does not impede pallet 4-way entry requirement.
- Pallets shall not have protruding nails. Due to safety concerns created by protruding nails, any load on a pallet with protruding nails will be returned to supplier at supplier's expense for repalletization, or repalletized by Cree Lighting with the expense being billed to supplier.
- Any pallets intended for use in an export shipment must be heat treated and stamped per ISPM guidelines #15. Cree Lighting will communicate intent to export at the time of purchase order issue.
 - All pallets must be of 4-way entry, double faced, non-reversible, wood construction. The use of corrugated, plastic, and other pallet alternatives is prohibited.
 - All pallets must be able to support a 2,800-lb. load while triple stacked.
 - All pallets must maintain sufficient construction to meet performance requirements.
 - Any load received on non-approved pallets will be returned to supplier at supplier's expense for repalletization, or repalletized by Cree Lighting with the expense being billed to supplier.

Email or call your Cree Lighting commercial contact for written approval prior to shipment if a unique size pallet or other deviation from the above requirements is required.

5.0 Unitization and Palletization Requirements

Pallet load containment must provide damage protection and optimum load performance with minimal environmental impact. Part damage and load shift due to packaging failures are subject to rejection upon receipt at Cree Lighting.

- Unitization and/or palletization is required for all parts and should be designed to stabilize and complement the primary containers to prevent movement throughout the handling cycle.
- The unit load must be modular to the pallet and remain stable for material handling and storage after initial part access and removal.
- All containers must be properly palletized and secured to the pallet.
- Palletized cartons should be uniform in size to maintain a stable load.
- Maximum overall height per unit load is 56".
- Containers must be palletized in individual level layers on the pallet. No 'pyramid' unit loads. If material release quantities do not permit shipment of individual level layers of containers, explore alternative methods of containerization and/or call or email your Cree Lighting commercial contact for assistance.



- Palletize by like part numbers. Mixed unit loads are discouraged. Mixing right and left-hand parts on the same pallet is forbidden.

5.1 Containment

The preferred method for containment is either plastic, heat sealed strapping of green polyester or clear stretch film. Plastic strapping and clear stretch film should secure the entire palletized load including the pallet. Parcel shipments shall not include plastic strapping. The use of unitizing adhesive for individual cartons is encouraged.

Labeling

6.0 Identification and Labeling Requirements

The following labeling instructions apply for proper addressing of parts and materials shipped or delivered to Cree Lighting. Suppliers must insure that all parts and materials are correctly labeled and that the labels are properly attached.

6.1 AIAG Labeling Guidelines and ANSI MH10.8.2 Data Identifier Guidelines

DO NOT include ANSI MH10.8.2 data identifiers or data identifiers of any kind into the label barcodes. Cree Lighting’s systems cannot read data identifiers rendering labels and barcodes un-useable. No special characters are permitted (i.e. /, \$, +, %).

6.2 Label Certification Process

Each supplier shall submit a label for approval to your commercial contact. The label will be reviewed and evaluated for compliance. It must receive approval from Cree Lighting before incorporation into production part shipments. If any corrections are needed, the supplier will be notified of a problem and required to resubmit a revised label. Once the label passes all reviews and tests, the supplier will be notified of their compliance.

6.3 Label Specifications

- Cree Lighting suggests that labels use only the customer segment defined by the AIAG B-10 standard.
- Cree Lighting highly recommends that labels be 6” x 4” unless the parcel being sent to Cree Lighting is smaller than the label size, in which case, the label may be scaled appropriately. All fields on the Label must be readable and scannable at any size when rated per ISO/IEC 15416 grade C or better.
- Label shall be white and printed with bold black ink. Thermal printed labels are preferred, but not required. No colored labels or ink will be allowed.
- Adhesive labels can be pressure sensitive or dry gummed if adherence to the container is assured, application is wrinkle free, and only used for expendable packaging.
- All bar codes shall be **USS Code 39 symbology** and be at least **0.5” high**. Start and stop characters (*), are required per AIAG B-10 guidelines.
- Bar codes must be a minimum of 5 mm to a maximum of 30 mm (.01 to 0.17 inches) for the narrowest element.
- See AIAG B-10 for bar code symbology, requirements, and specifications.
- Human readable fonts should be simple and there must be a clear distinction between “O” and “0”.
- A minimum quiet zone of .25 inches is required in front of and behind all bar codes.
- All font heights will be defined in LPB (lines per block) (See AIAG B-10 for guidance). (See 7.4 for LPB parameters).
- Borders around the outside edge of labels **are not** required
- See sample labels in **Appendix B**.

6.4 Suggested LPB (Lines Per Block) Character Parameters Table

LPB	Max Char per Line	Point	Inches	mm
1 LPB	08	64	0.90	22.0
2 LPB	18	32	0.40	11.0
3 LPB	28	20	0.25	7.0
4 LPB	34	16	0.20	5.0
5 LPB	42	12	0.15	4.0
6 LPB	48	10	0.12	3.0
7 LPB	59	08	0.10	2.0
8 LPB	68	06	0.08	1.5

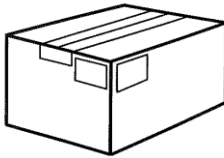
6.5 Labeling on Stretch Film

When a unit load is stretched wrapped, a Master Label or Mixed Load Label shall be adhered to the outside of the stretch film, visible to operators and readable for barcode scanning. This label is required for all stretch wrapped unit loads of single or multiple packs. This label may be removed with the stretch film making individual container labeling necessary as described in Section 7.3 of this document. One Master Label per unique part number is required. See Section 7.8 for Mixed Load Labeling.

6.6 Container Labeling

Identical container labels should be located on two adjacent sides of each container. At least one of the two container labels on each carton should be visibly facing outward when inspecting the pallet. Do not stack the carton so that both carton labels face inward. A sample carton label is in Appendix B. A Master Label (see section 7.7), and when applicable, a Mixed Load Label (see section 7.8) will be required on the exterior of all palletized shipments. **If a singular container is sent, use two Master Labels instead of the carton labels.**

BOX OR CARTON



6.6.1 Required Label Fields – Box or Carton

- Cree Lighting Part # (P): Cree Lighting’s part number
- Description: Cree Lighting’s part description
- Supplier: Supplier name and shipping address
- Container Weight and Dimensions
- Qty: Quantity in Carton
- Bar Code

6.6.2 Supplier Specific Required Fields

Cree Lighting may ask suppliers to provide product **lot numbers** – Lot # (1T) and **expiration dates** – Exp Date (1D) on carton labels for some products. Cree Lighting will notify suppliers in writing when these fields are required. If these fields are not required, the space occupied by these fields in the example in Appendix B may be used by supplier for other information.

6.6.3 Non-Standard Containers

Shipments of other kinds may require different forms of labeling or hang tags with adhesive labels.

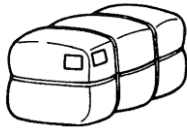
Drums, barrels, or cylinder containers: Identical Package labels should be located on the top and near the center of the side.

DRUM, BARREL, OR CYLINDRICAL CONTAINER



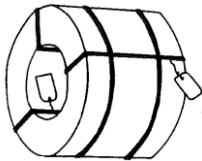
Bale: Identical Packaging labels shall be located on at the upper corner of an end and an adjacent side.

BALE



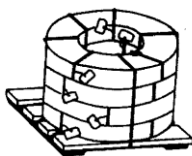
Single Coil: Attach label with wire metal hang tag to both inside and outside of coil.

SINGLE COIL



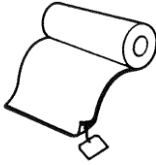
Slit Coils: Attach label with wire metal hang tag to the inside and outside of each individual coil.

SLIT COILS



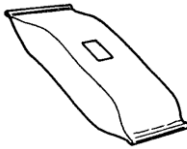
Roll: Attach label with wire metal hang tag to end of the roll of material, and if space permitting, to the inside of the roll.

ROLL



Bag: Place the label on the top of the surface that will be visible when the bags are stacked.

BAG



Tubing, Bars, and Poles: Attach label with wire metal hang tag to each end.

TUBING AND BARS

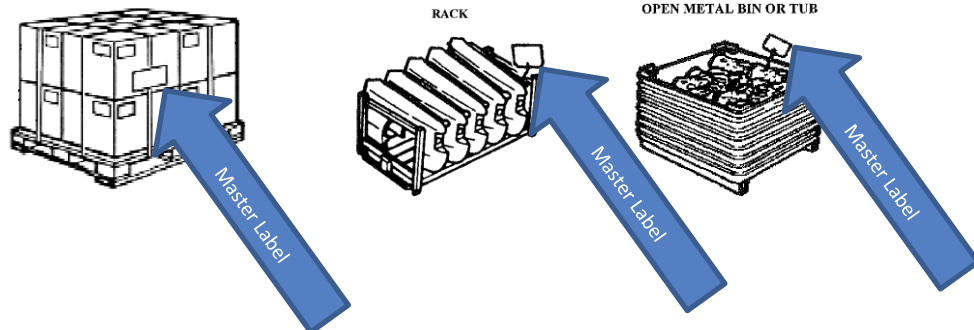


Please contact Cree Lighting Operations for additional guidance on label placement.

7.0 Master Label

A Master Label shall be used to identify the total contents of a multiple single pack load of the same part number. The label shall be placed on the unit load in such a manner that when the unit load is broken apart the label is discarded (ex: attach to the outside of the stretch wrap). **One Master Label per individual part number on the pallet is required.** See AIAG B-10 for additional information. A sample Master Label is in Appendix B.

Master Label Location



7.7.1 Required Fields – Master Label

- Cree Lighting Part # (P): Cree Lighting’s part number
- P.O. # (K): Cree Lighting’s purchase order number
- Line # (4K): The purchase order line number
- Qty: The part quantity included on pallet/in carton
- LPN: See appendix A for formatting
- Load Weight and Dimensions
- The text “**Master Label**” should occupy the left-most 2/3 of the bottom building block
- Bar Code

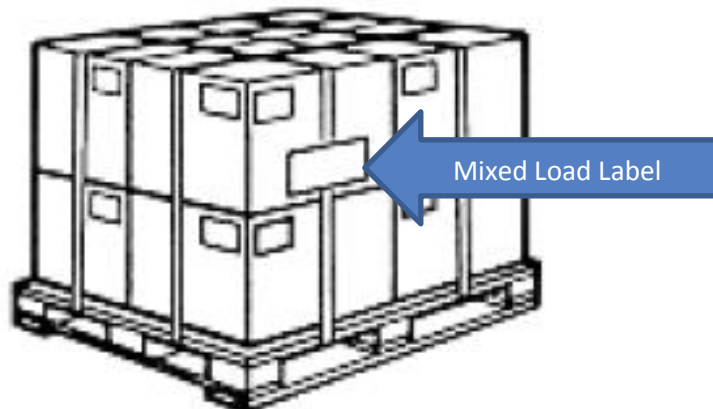
7.7.2 Supplier Specific Required Fields

Cree Lighting may ask suppliers to provide product **lot numbers** – Lot # (1T), **expiration dates** – Exp Date (1D), and/or a **work order number** – W.O. # (W) on master labels for some products. Cree Lighting will notify suppliers in writing when these fields are required.

7.8 Mixed Load Label

Mixing of part numbers on pallets is **highly discouraged**, but may be unavoidable due to low order quantities and/or shipping/handling expenses. In these limited circumstances, a Mixed Load Label shall be used to identify a load of multiple single packs of different part numbers. Note: Mixed loads are required to have a **Master Label of each individual part number is still required on the unit load**. The label shall be placed on the unit load in such a manner that when the unit load is broken apart the label is discarded (ex: Attach to outside of clear stretch wrap). See AIAG B-10 for further information. A sample Mixed Load label is in Appendix B.

Mixed Load Label Location



7.8.1 Required Fields – Mixed Load Label

- From: Supplier name and shipping address
- LPN: See Appendix A for formatting
 - Master labels do not require LPNs if a Mixed Load Label is used.
- Load Weight and Dimensions
- List of Skid Contents
- The text “**Mixed Load**”
- Bar Code

Shipping

8.0 Shipping & Transportation Requirements

8.1 Packing Slips and Bills of Lading

Packing slips and bills of lading, whether direct shipments or shipments moving through a consolidation point, must be submitted with every shipment.

8.1.1 Direct Shipments

Direct shipments moving from a shipping plant to Cree Lighting Racine must include packing slips prepared in duplicate. One copy of the packing slip is to be firmly attached to the outside of one of the containers in shipment. The second copy should be tendered to the carrier along with two copies of the bill of lading.

8.1.2 Consolidated Shipments

Partial loads moving through a consolidation point before delivery to Cree Lighting Racine must include packing slips prepared in sets of four. One copy of the packing slip should be firmly attached to the outside of one of the containers in shipment. The other three copies should be tendered to the carrier, along with two copies of the bill of lading. The bill of lading should indicate that the packing slips are to be delivered to the consolidator at the time of delivery.

8.1.3 Customs Papers

US Customs and Border Protection has established specific rules on the contents of a commercial invoice or electronic equivalents. According to the Code of Federal Regulations (“CFR”), 19 CFR §141.86, it must include complete and accurate information. All U.S. shipments destined outside of the U.S. must have a customs invoice provided by the supplier and included with other shipping documentation. The items outlined below **MUST** be included on commercial invoice and/or packing list.

- The port of entry to which the merchandise is destined.
- The person to whom the merchandise is sold or agreed to be sold or the person by whom it is shipped
- A detailed description of the merchandise, including the name by which each item is known.
- The quantities in weights and measures.
- The purchase price of each item
- Total value
- All charges that are not included in the piece price such as additional packaging, insurance and freight.
- Rebates of any kind if applicable
- Country of origin
- Invoice must be in English.
- Invoices and pages
 - The invoice number and the page number must be shown at the bottom of each page when applicable
 - Inv. 1 P.1
 - Inv. 2 P.2
 - Inv. 2 P.3

8.1.4 Third-Party Consignment

When making a third-party consignment shipment, the bill of lading must include

Consigned to:

Cree Lighting

c/o (Third Party, ex: Acme Parts Supplier)

8.2 Packing Slips

All Packing slips must include the following information:

Supplier Information

1. Supplier Name and Address (Ship point, not billing office)
2. Supplier Number (Contact your Cree Lighting buyer if you need your supplier number)
3. Packing Slip Number
4. Date Shipped

Shipping Information

1. Ship to: As stated on the Cree Lighting Purchase Order
2. Bill to: As stated on the Cree Lighting Purchase Order
3. Gross, tare, and net (material) weight.
4. Shipped Via (routing).
5. Bill of Lading number.
6. Freight Terms (FOB Point, collect prepaid, etc.).
7. Transportation Mode (rail, truck, etc.)

8. LTL Shipments include PRO Number.
9. Air shipments include Air Waybill Number.
10. Full Truck Load or Intermodal Shipments include trailer number or container number, and carrier.
11. Shipment identification (SID) Number (when applicable)

Packing Information

1. Number of unit loads: pallets, containers, cartons, etc.
2. Pieces per unit load.
3. Unit of measure (if other than pieces per unit load).

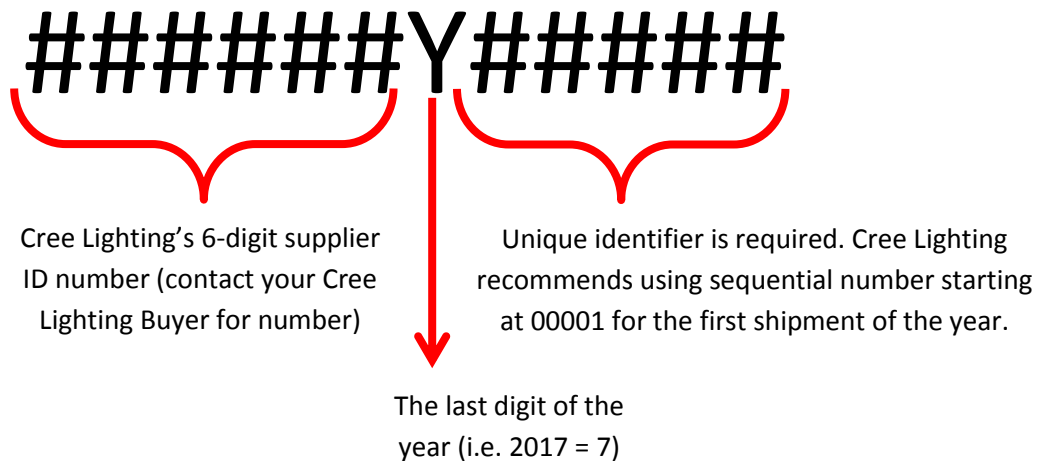
Item Information

1. Purchase Order (PO) number
2. PO Line Number
3. Cree Lighting Part Number
4. Ship Quantity (Unit of measure if other than each – ie: ft., lbs., etc.)

Appendices

Appendix A: LPN Format

The **LPN** (Licenses Plate Number) gives the pallet or carton a unique code which helps Cree Lighting track inventory as it is received and provides traceability within the warehouse and supply chain. As Cree Lighting receives your product into our ERP system it will be loaded into the LPN provided on the label and moved to a location in the warehouse. Duplicate LPN's could cause product to show in incorrect locations and diminish traceability within the warehouse. The LPN format requested from suppliers is as follows:



This LPN would represent the 12,345 pallet sent to Cree Lighting from supplier 107983 in the year 2017

LPN Guideline for Mixed Loads:

When sending mixed loads, the LPN is only required on the Mixed Load label. The Master Label LPN field is ideally left blank. However, if system limitations make this request infeasible, please line through or cover a portion of the LPN on the master labels to prevent Cree Lighting’s receiving department from scanning the wrong LPN.

Appendix B: Label Samples

(Examples are NOT to scale)

Carton Label:

*Only required on palletized loads. Single carton shipments only require Master Label.


Cree Part #
(P)

LHD00529X0001A0



Description **PLT,EM DRIVER MNTG KR KR4 / KR6
BLS310C 14-1/2**

Supplier:	Supplier Name 1234 N Main Street Racine, WI 53406 United States of America	Weight 400 lbs. Dims (L x W x H) 48 in x 52 in x 52 in
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Additional Supplier Info:	Exp Date (1D) 12/22/2016 Lot # (1T) 123456789	Quantity (Q)  100000
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Master Label:

Cree Part # (P)  LHD00529X0001A0		
P.O. # (K)  800001	Line # (4K) 1.1	Qty (Q)  10000
LPN (J)  107983712345		Weight 400 lbs. Dims (L x W x H) 48 in x 40 in x 52 in Lot # (1T) 123456789
<h1>Master Label</h1>		W.O. # (W)  234567

*Suppliers not required to submit a WO number may extend "Master Label" text, or may use this space for other information desired by supplier.

Mixed Label:

To be affixed to cartons or pallet loads containing multiple part numbers

From: Supplier Name 1234 N Main Street Racine, WI 53406 United States of America	
LPN (1J)	 107983712345
Weight 400 lbs. Dims (L x W x H) 48 in x 40 in x 52 in	Skid Content: LHD00529X0001A0 (400) CE514X02R1 (12) VG632X01R0 (150)
Mixed Load	