



# GLOBAL SUPPLIER MANUAL

SECOND EDITION: SEPTEMBER 2019

**CREE** ⇄ LIGHTING

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## 1.0 Introduction

Cree Lighting specializes in LED lighting manufacturing and bringing highly engineered indoor and outdoor lighting products to global markets. Cree Lighting is a market-leading innovator of LED lighting. Cree Lighting products and control systems are used in homes, businesses, parking, roadway applications and much more. For more information about Cree Lighting, visit our [website](#).

### 1.1 Supplier Manual Goals & Scope

The purpose of this manual is to communicate Cree Lighting's requirements and expectations to suppliers of lighting fixtures, subcomponents, tooling, and capital equipment. Cree Lighting relies on our supply base to successfully deliver on our brand promise. We will only be successful if our suppliers can consistently produce outstanding products, equipment and services. Our business processes in product development, quality management and supply chain need to be aligned with our suppliers to efficiently and effectively work together.

This manual details the commercial, quality, environmental and logistics requirements for suppliers to Cree Lighting. Compliance with this manual is mandatory to ensure that our supplier partners have the systems, processes, and procedures in place to meet necessary requirements of Cree Lighting and Cree Lighting's end customers.

This manual will be updated as necessary to include new and changing requirements based on Cree Lighting's needs, our customer's needs, and regulatory requirements.

### 1.2 General Requirements to Suppliers

Cree Lighting expects our suppliers to operate ethically and abide by all applicable laws and regulations, while also demonstrating their commitment to quality and the environment. Suppliers are expected to meet the requirements of the plants they supply. Cree Lighting Quality Management System requirements are outlined in this manual. Supplemental requirements may be communicated to the suppliers by Cree Lighting Supply Chain during the business quotation and award process.

Cree Lighting expects our suppliers to be certified, or demonstrate compliance with the industry certifications shown in the following table. We encourage all our suppliers to provide Cree Lighting Supply Chain with an up-to-date copy of all the certificates.

## ISO 9001

- **Compliance to latest IEC/ISO version required**, unless otherwise specified, for all suppliers and their manufacturing sites.
- TS 16949 compliance will reduce need for regular audits by Cree.

## ISO 14001

- Aspire to have all supplying sites to have ISO 14001 environmental management systems according to the latest edition or equivalent.

## ISO 45001

- Aspire to have all supplying sites to have ISO 45001 safety management systems according to the latest edition or equivalent.

### 1.3 Supplier Code of Conduct

Cree Lighting has a long history of financial stability, dating back to our founding in 1987. Our business efforts are forged with an eye toward the future and are grounded in the principles of running an accountable and responsible business. To help us fulfill our responsibility, Cree Lighting has taken additional steps in establishing worldwide methods for employees and supplier to report any matters they believe may not be in line with Company values or legally acceptable standards. These include the following:

- Business Conflicts of Interest
- Improper use of Confidential Information
- Bribery
- Actual or Threatened Illegal Acts or Criminal Violations
- Environmental, Health or Safety Concerns
- Human Rights Violations- Forced Labor or Child Labor

For more information, see our [Supplier Code of Conduct](#).

### 1.4 Purchasing Policy

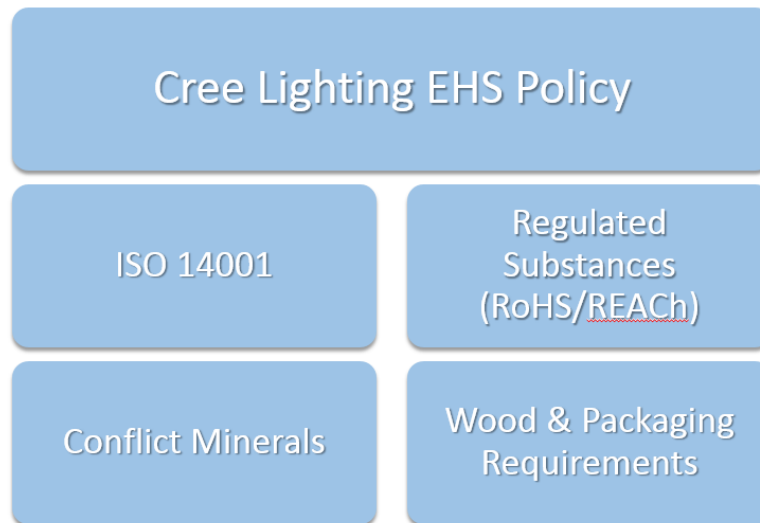
Cree Lighting is committed to the fair and equitable treatment of our suppliers, providing qualified suppliers the opportunity to grow their business. Supplier confidentiality is maintained by all Cree Lighting employees to maintain high ethical standards and to support the creation of lasting supplier relationships.

In return, suppliers are expected to:

- Maintain the confidentiality of information provided by Cree Lighting.
- Conduct business ethically, without attempt to influence through gifts, entertainment or favors that would create a conflict of interest.
- Advise Cree Lighting of product and process technology alternatives that would improve the purchase value.
- Partner with Cree Lighting to produce sustainable products using environmentally sustainable materials and processes.

## 1.5 Sustainability

At Cree Lighting, we strive to do the best for our environment, our communities, and our employees. Cree Lighting has integrated sustainability throughout the company: in our strategy, organization, culture, in manufacturing, and in our products. We expect our suppliers will adopt key sustainability progress and practices as shown below.



## 1.6 Environmental Health & Safety Policy

Cree Lighting endorses a Corporate Environmental Health & Safety (EHS) Policy for all Cree Lighting sites. Please visit the [Cree Lighting Environmental Health and Safety Policy](#) page for more information. Cree Lighting expects the same health and safety policy in the suppliers we do business with. The Supplier is obligated to comply with all legal regulations regarding environmental protection and occupational safety. The implementation of an Environmental Management System per DIN EN ISO 14001 is encouraged.

## 1.6.1 International Environmental Compliance Standards

All components that will become part of a Cree Lighting product shall comply with international environmental standards, such as RoHS, REACH, and any other Cree Lighting or Cree Lighting customer product content standard communicated in writing to Suppliers. Suppliers are required to provide Cree Lighting with supporting documents evidencing such compliance upon request.

## 1.6.2 Conflict Minerals Notice

Cree Lighting is dedicated to sourcing materials from suppliers that uphold the same values expressed in our code of ethics, which includes the respect of human rights which is a foundation of the Conflict Minerals Act. Cree Lighting fully expects suppliers to cooperate with us and to provide information to support these efforts. Any Cree Lighting supplier that does not provide us complete and accurate information in an acceptable format for the applicable reporting period or that provides material from sources known to fund armed groups in the Democratic Republic of Congo region will be required to implement corrective action measures. Suppliers that do not reasonably comply with Cree Lighting's Conflict Mineral Policy will be reviewed by Cree Lighting's supply chain management to assess whether Cree Lighting will conduct business with those suppliers in the future.

For additional detail on Cree Lighting Conflict Minerals Supply Base declaration requirements, please see the following link: [Cree Lighting Conflict Minerals](#).

## 1.6.3 Wood & Packaging Requirements

As part of our environmental approach towards wood and packaging, Cree Lighting requires packaging suppliers to use recycled materials to implement the sustainability targets. Sustainable wood products shall be used from responsible sourcing. The supplier shall provide evidence of compliance (e.g. amount of recycling, weight) to Cree Lighting when requested. Further information can be found in the [Cree Lighting Commercial Lighting Packaging, Labeling, and Shipping Requirements Manual](#).

## 1.7 Trade Compliance Policy

Cree Lighting recognizes that failure to meet trade compliance requirements can have a severe consequence for Cree Lighting, including damage to the company's brand image, monetary penalties, and suspension of the company's exporting or importing privileges with a resulting negative impact to our suppliers and customers. Thus, we are committed to the implementation, maintenance and continuous improvement of a robust global trade compliance program which integrates compliance activities into our Cree Lighting and Cree Lighting Supplier Management business processes.



## 1.8 Communication

The supplier must nominate an individual responsible for interaction between Cree Lighting and the supplier regarding daily operations that may affect Cree Lighting. The supplier must submit that contact data to Cree Lighting’s Supply Chain Department.

## 2.0 Doing Business with Cree Lighting

Cree Lighting seeks long-term relationships with supplier partners who share our goal of creating a sustainable high value supply chain to support our customers and the end user market. This value focus includes purchasing the right technology components and materials, delivered on-time and with high quality. We seek collaborative relationships with our suppliers with a joint goal of continuous improvement.

The Cree Lighting Supply Chain Organization is structured to work with suppliers from supplier on-boarding through the on-going supply of production materials. The following is a definition of the key functional roles.

Stage of Product Life:	Supply Base Definition	NPD Support		Production Procurement
Supply Chain Role:	Global Commodity Manager	Strategic Sourcing Leader	Materials Program Manager	Buyer
Tasks:	Technical & business capability assessment	New product quotations, negotiation, tooling & equipment pilot build procurement	Pre-production build material coordination	Material procurement, delivery confirmation, shortage resolution

As a manufacturer of LED lighting, Cree Lighting purchases the following categories of materials and components:

<b>Electrical</b>	<b>Fabricated Metals</b>
Wire & Wiring Assemblies Battery modules Cables & Plug/Wire Assemblies Connectors Surge Protectors/Resistor Modules	Die Castings Stampings Spun Reflectors Springs & Wire-forms Extrusions Welded Assemblies – Poles & Tenons
<b>Electronic</b>	<b>Plastics/Polymeric</b>
Driver Modules Electronic Controls & Sensors Printed Circuit Board Assemblies Electronic Components: Resistors Capacitors Diodes Inductors IC's LED's PCB's Transformers	Mechanical Plastics Optical Plastics Gaskets/Insulators Seals Die Cut Products
<b>Finished Goods Fixtures</b>	<b>Other Products &amp; Services</b>
OEM & ODM	Epoxy & Adhesives Glass lenses Fasteners/Hardware Labels Packaging Coating/Finishing services Machining Services

## 2.1 Becoming a Cree Lighting Approved Supplier



### 2.1.1 Supplier Registration

Visit the Cree Lighting website by clicking the following link, [Potential Supplier Information Form](#) which will lead Potential Suppliers to the first step in the registration process. Potential Suppliers are asked to provide summary information about your business to allow Cree Lighting Supply Chain to assess the fit with our business needs.

The information entered will be transmitted to the appropriate Cree Lighting Regional Purchasing organization for review and response.

## **2.1.2 Business Fit Review & Supplier Self-Assessment**

Following your supplier registration submission, the Cree Lighting Supply Chain Global Commodity Manager will review the information provided and respond with feedback on the next steps, which may include completing a [Supplier Self-Assessment](#). This self-assessment is designed to provide additional information to allow Cree Lighting Supply Chain and Cree Lighting Supplier Quality to better understand your businesses capabilities and to assess the fit with Cree Lighting's needs.

## **2.1.3 Additional On-Boarding Requirements**

- **Non-Disclosure Agreement**

If recommended to proceed, the Cree Lighting Global Commodity Manager will provide a Non-Disclosure Agreement for you to sign and return to allow for the open exchange of Cree Lighting confidential information associated with new business Requests for Quotations (RFQ's).
- **Sanctions and Anti-Corruption Due Diligence**

To ensure compliance with applicable sanctions and anti-corruption laws, suppliers will be screened by Cree Lighting through a due diligence database provided by a third party. Suppliers must provide a complete and accurate company name, as well as any additional necessary information requested by Cree Lighting, so that Cree Lighting can effectively use the due diligence database.
- **Financial Health Review**

In some instances, relating to significant business awards or concerns over the supplier's financial health, Cree Lighting may initiate a supplier financial health review. As a supplier to Cree Lighting, you will be expected to support these financial reviews with Cree Lighting by providing the requested company financial data or metrics to support the assessment of your companies underlying financial health.

## **2.1.4 Cree Lighting Approved Supplier Assessment**

Following the supplier submission of the Supplier Self-Assessment, Cree Lighting Supply Chain and Supplier Quality will review these documents and contact you regarding any questions and/or the next steps in the process to becoming an Approved Supplier. Cree

Lighting may also send a request for quote (RFQ) to assess commercial competitiveness. If requested, the supplier's quotation must be submitted to move on to the next phase of becoming an Approved Supplier.

### **2.1.5 Supplier On-Site Review**

In many cases, Cree Lighting Supply Chain and Supplier Quality will request an On-Site Audit at your facility to confirm the self-assessment information and obtain a better understanding if your business aligns with Cree Lighting's needs and expectations. The audit results with potential findings will be reviewed with you. To become an Approved Supplier, all major findings shall be closed with demonstrated implementation of corrective actions. Follow-up visit(s) may be required by Cree Lighting Supply Chain and Supplier Quality to validate and review the implementation steps for the major findings.

### **2.1.6 Approved Supplier List (ASL) Recognition**

Suppliers who successfully complete the Self-Assessment & Audit Process will be recognized as an Approved Supplier to Cree Lighting and will be eligible for new business awards. Cree Lighting Supply Chain will include Approved Suppliers in quote opportunities for new programs that are within the supplier's product and manufacturing capabilities.

Cree Lighting Approved Suppliers awarded production business will be reviewed on an ongoing basis for quality and delivery performance, technical capability, quality/environment system certifications, commercial support performance and financial health. For more details about Cree Lighting's Supplier Scorecard Process, see Section 9.0 in this manual.

## **3.0 Supplier Strategy**

We, at Cree Lighting, have a vision of a supply chain that is seamlessly integrated with our production facilities, warehouses, and ultimately customers. We expect our communication to evolve to a level where you, as a supplier, are as aware as quickly as we are:

- Of the changes in our customers' demands that include your products
- Of the changes in our designs and drawings for your parts
- Of the quality issues we encounter in our purchased parts and end products

We want to stand side by side with our suppliers to regain the momentum that drove the Cree Lighting division to the market place stature it enjoys today, as well as to reinvigorate the spirit of innovation that has always been a part of the Cree Lighting culture.



Cree Lighting recognizes that we have a long way to go to achieve this vision; investments of effort and energy will be required from both Cree Lighting and our suppliers. To ensure that the resources required to accomplish this goal are properly focused, Cree Lighting has launched a supplier program called the Spotlight Suppliers.

### 3.1 Spotlight Suppliers

Cree Lighting defines Spotlight Suppliers as the suppliers with whom we spend the most money. As the program develops, we will continue to assess Spotlight Suppliers and determine whether they:

- Perform at a level high enough to drive Cree Lighting's on-time delivery to customers
- Ensure an optimal balance of cost competitiveness and quality for the lighting market place
- Have the right technological roadmap for Cree Lighting's future technology needs

With the help of our colleagues in Cree Lighting's Quality, Engineering, Marketing, and Production teams, Cree Lighting will be reviewing our largest suppliers' recent performance and technological roadmaps to ensure that we invest our effort and energy in the right suppliers.

### 3.1.1 Responsibilities of Spotlight Suppliers & Strategic Partners

To ensure that Cree Lighting performs to the level that our customers demand, we need our Spotlight Suppliers to work with us to change our processes. Simply working harder or faster will not suffice for the level of improvement we are striving to attain. The following are actions Cree Lighting is looking to collaborate on with our Spotlight Suppliers:

- Perform and score at the highest level on our supplier assessment scale (see Section 9.5.1)
- Reduce lead times for steady part numbers to two weeks or less through a combination of:
  - Changes in the planning process (both Cree Lighting's and the supplier)
  - Changes in how and where inventory is held
- Continuous collaboration on cost reduction programs, including re-design efforts for Cree Lighting
- Sustained quality improvements driven by:
  - Direct feedback on quality issues
  - Solutions that get to the root cause of an issue
  - A mature assessment on your production capabilities with regards to Cree Lighting's technical requirements, including your feedback to Cree Lighting regarding the feasibility of our specifications
- An investment in resources to strengthen the communication processes using the iSupplier portal and other efficient means
- Transparency of technology roadmaps and future plans for both our companies
- A process to support more rapid product launches including faster prototyping

### 3.1.2 Responsibilities of Cree Lighting to Our Spotlight Suppliers & Strategic Partners

Cree Lighting's responsibility, is to ensure that our Spotlight Suppliers enjoy:

- The preponderance of Cree Lighting's spend with suppliers in their technology
- Access to new product development and design discussions
- Favorable payment terms, specifically in exchange for reducing the lead time and resulting carrying costs of safety stock inventory levels

### 3.2 Core Suppliers

The vast majority of Cree Lighting's suppliers will be classified as Core Suppliers, meaning that they do business with Cree Lighting and supply our requirements in the current business situation.

### **3.2.1 Responsibilities of Core Suppliers**

Cree Lighting's Core Suppliers will be managed in a disciplined fashion to ensure that we can fulfill our customers' immediate needs, including:

- Fulfill the requirements defined in the supplier manual
- Successfully pass the supplier audit and appropriately respond with corrective actions to any audit deficiencies
- Perform on Cree Lighting's continuous improvement expectations, explained in Section 9.5.1, at a Level 2 or higher

### **3.2.2 Responsibilities of Cree Lighting to Our Core Suppliers**

A Core Supplier can win new business at Cree Lighting and interact with our Marketing and Engineering teams on new product development plans. Cree Lighting's commitment is to share with Core Suppliers what it would take to ultimately become a Spotlight Supplier and work together to develop our business relationship and increase spend, when progress and commitment is demonstrated.

### **3.3 Probationary Suppliers**

Probationary Suppliers are either new and untested suppliers, or those that are performing at an unacceptable level of performance.

#### **3.3.1 Responsibilities of Probationary Suppliers & Cree Lighting**

Cree Lighting commits to working with Probationary Suppliers to ensure performance levels that allow us to mutually fulfill our customers' demands, including providing:

- The time and opportunity for new suppliers to learn Cree Lighting's business practices and adopt to our way of doing business
- Clear guidance on deficiencies found in supplier audits
- Support for delivery or quality performance corrective actions, as well as an honest assessment of Cree Lighting's own contributions to performance deficiencies

For new suppliers, if performance is acceptable in the first year, the supplier will be categorized as a Core Supplier. For suppliers deemed probationary due to performance issues, a corrective action process will be established. The supplier will not be awarded new business, except in rare instances, until performance improves.

## 4.0 Commercial Policies and Procedures

As a supplier to Cree Lighting, you can expect to be treated with respect and transparency into our business needs so that our supply chain can be successful. In parallel, we expect transparency from our suppliers in terms of technology, cost, quality, and financial and operational stability.



### 4.1 Terms & Conditions

Cree Lighting's Terms and Conditions serve as the foundation of our supplier business agreements. In specific regions, local laws dictate unique terms which are included in the regional Terms & Conditions documents. Cree Lighting's Terms and Conditions can be found by clicking the following link, [Cree Lighting Purchase Order Terms and Conditions](#).

In some circumstances, local exceptions to the standard Terms and Conditions may be agreed upon by a member of the Cree Lighting Supply Chain Management team. Any exceptions must be documented and signed by both Cree Lighting and the supplier's management representative to maintain an ethical and transparent relationship.

#### 4.1.1 Supplier Warranty Responsibility

As a supplier to Cree Lighting, you must warranty your products such that they will be free from defects and that they comply with the specifications and requirements defined on the product drawings, specifications and the manufacturing control plan.

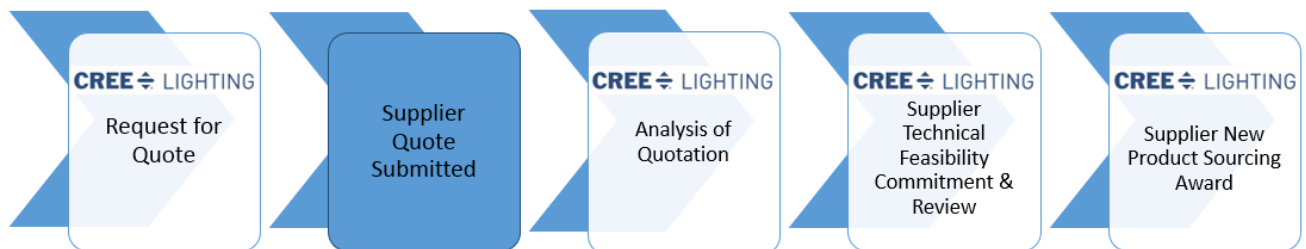


Suppliers are expected to participate in problem resolution reviews with Cree Lighting if there is a failure of a Cree Lighting product which includes the supplier's component. If the failure is determined to be attributable in whole or in part to the supplier's product, the supplier will take responsibility for their appropriate share of warranty costs, rework costs, sorting costs, shipping costs, and other costs incurred to resolve the issue at Cree Lighting and Cree Lighting's customer sites.

## 4.2 Purchasing Process

As an Approved Supplier to Cree Lighting, you will be considered for all product sourcing opportunities within your product or material supply capabilities. In some instances, Cree Lighting Supply Chain and Engineering may omit an approved supplier from a quote opportunity due to specific design or technical requirements that are outside of the supplier's capabilities or based on supplier manufacturing capacity considerations. Cree Lighting Supply Chain will make every effort to communicate the rationale for sourcing decisions to our suppliers.

Cree Lighting Supply Chain is the only official channel for submitting quotations and executing commercial agreements. Suppliers should be attentive to include the appropriate Cree Lighting Supply Chain GCM, SSL, and Buyer in all commercial communications. The following graphic outlines the process of choosing and awarding a supplier for with new business.



### 4.2.1 Cree Lighting Request for Quote (RFQ)

Suppliers should expect to receive Request for Quotation (RFQ) from Cree Lighting Supply Chain with all necessary information to allow the supplier to develop and provide an accurate price quotation response. In the event a supplier has questions or requests clarifications on RFQ details, the supplier should contact Cree Lighting Supply Chain for clarification. Cree Lighting expects that the information provided in the RFQ will be treated by the supplier as proprietary and confidential.

## 4.2.2 Supplier Quote Submission & Analysis of Quotation

After submission, Cree Lighting will analyze the quotation. Each supplier quotation must clearly contain the following:

- Company name
- Manufacturing address
- Date of quote
- Item number
- Item description
- Item price in USD
  - Cost breakdown: material costs, labor costs, indirect labor, manufacturing overhead, SG&A, profits
- Contact person, email, and phone
- Quote expiration date if applicable

Any exceptions to the requirements of the RFQ shall be outlined in the supplier quotation.

## 4.2.3 Supplier Technical Feasibility Commitment & Review

If applicable, Cree Lighting may also perform a [Supplier Technical Feasibility Commitment \(STFC\)](#). The STFC is intended to be an interactive review with the supplier and Cree Lighting technical personnel to ensure that the supplier manufacturing and quality engineers clearly understand Cree Lighting requirements and that supplier capability and capacity is validated. Corrective action plans may be required from the supplier to support a sourcing decision and tooling release. The STFC discussion also serves as a key communication step for the supplier to highlight risks or feasibility improvement opportunities to Cree Lighting to increase the likelihood of a successful program. The STFC will typically be conducted at the supplier's manufacturing facility to maximize the supplier's organization involvement and Cree Lighting's understanding of the supplier's capability.

## 4.2.4 Supplier New Product Sourcing Award

After the analysis of the RFQ responses from the Approved Suppliers and performing the STFC, Cree Lighting will make a supplier selection based on the criteria listed below:

- Supplier Financial Health
- Product Evaluation
- Quality Performance History
- Price
- Lead Time & Logistics Costs
- Manufacturing Capability & Capacity
- Quality Systems including the supplier's vendor management processes

All suppliers involved in an RFQ will be notified in a timely manner upon completion of the sourcing process and will be given feedback on the sourcing rationale and improvement opportunities. The chosen supplier(s) will be notified and rewarded new business.

#### **4.3 Equipment, Tooling & Gaging Requirements & Expectations**

Cree Lighting has established the following requirements and expectations related to Capital Equipment, Tooling and Gaging RFQ's:

- The Supplier has the sole responsibility for completing the design, build and tryout of all tooling/equipment being quoted per the specifications that are provided. Design approvals or sign-offs by Cree Lighting representatives do not alleviate the supplier of this responsibility.
- It is a Cree Lighting policy that no work be started by the Supplier without a Cree Lighting Purchase Order or a letter of intent originating from Cree Lighting Supply Chain.
- The Supplier guarantees completion of tools/equipment by the completion date shown on the quote unless previously agreed to in writing by Cree Lighting Supply Chain. A penalty fee will be charged to the supplier for late completion.
- Engineering change costs must be agreed to by the responsible Cree Lighting engineer and/or Program Manager assigned to the program and approved by Cree Lighting Supply Chain. No engineering changes should be started without a purchase order or amended purchase order specifically addressing the change. All requests for cost changes or delivery delays must be submitted to Cree Lighting Supply Chain with sufficient detail to support the request. The Supplier should make every effort to maintain the committed program timing while negotiating change cost approval.
- All machines must meet or exceed the requirements shown on the Equipment Specification Sheet which must be agreed upon prior to the release of the Cree Lighting equipment purchase order. The equipment specification should include the committed cycle time for the equipment.
- All dies and fixtures must meet or exceed the referenced Cree Lighting design and/or specifications which must be included in the purchase order for the tooling or fixturing.

For capital equipment quotes, any work holding fixtures/tooling must be shown as line item detail on the supplier quote. Work holding fixtures/tooling is anything that touches the part.

## 5.0 Quality

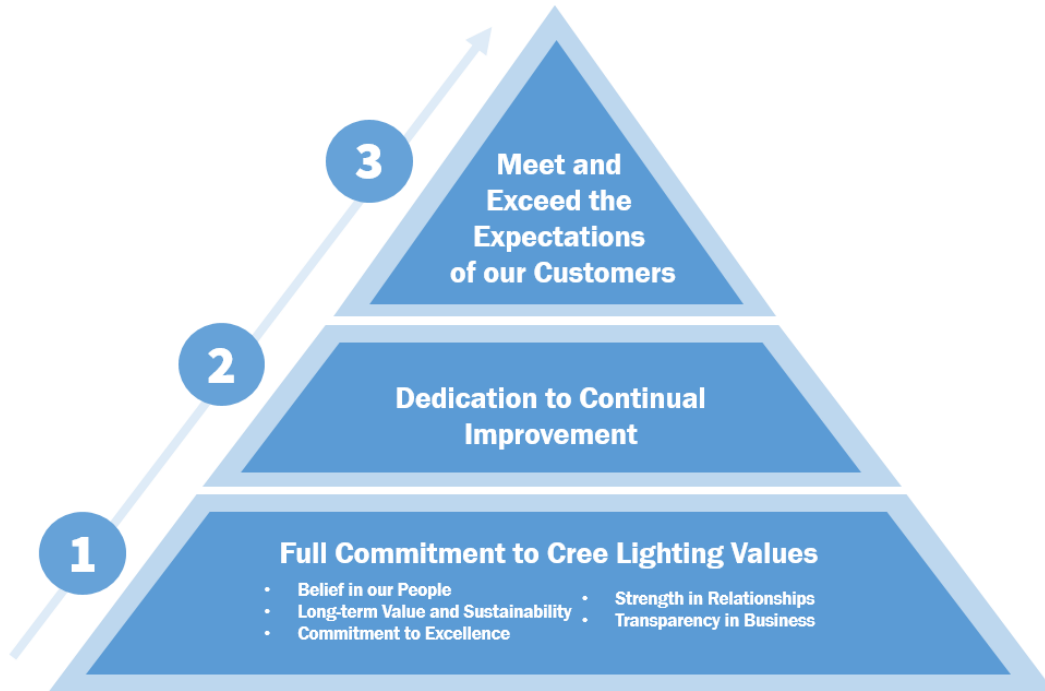
Cree Lighting's quality policy is simple: we have an obligation to our customers to meet and exceed their expectations and provide an overall positive experience. We accomplish this by delivering a safe, reliable, quality product by acting in full commitment to our core values at Cree Lighting. We listen to our customers and are dedicated to continuous improvement while also pursuing market leadership through being a global company that delivers innovation and value.

### 5.1 Leadership & Management Responsibility

We expect our suppliers to achieve a high level of quality in all the products that they provide to Cree Lighting. This means that the supplier's entire management team is committed to implementation of quality management processes that support a quality culture – every person, every process, every day. Supplier management at highest levels shall demonstrate involvement and support for process efficiency, customer focus, quality policy, planning, defining responsibility, authority and communication, and management review. The supplier shall determine and provide the necessary resources to maintain and continually improve the system of quality management and customer satisfaction. All suppliers must also adhere to the requirements of the applicable standards and the requirements stated in this manual.

### 5.2 Cree Lighting Quality Policy

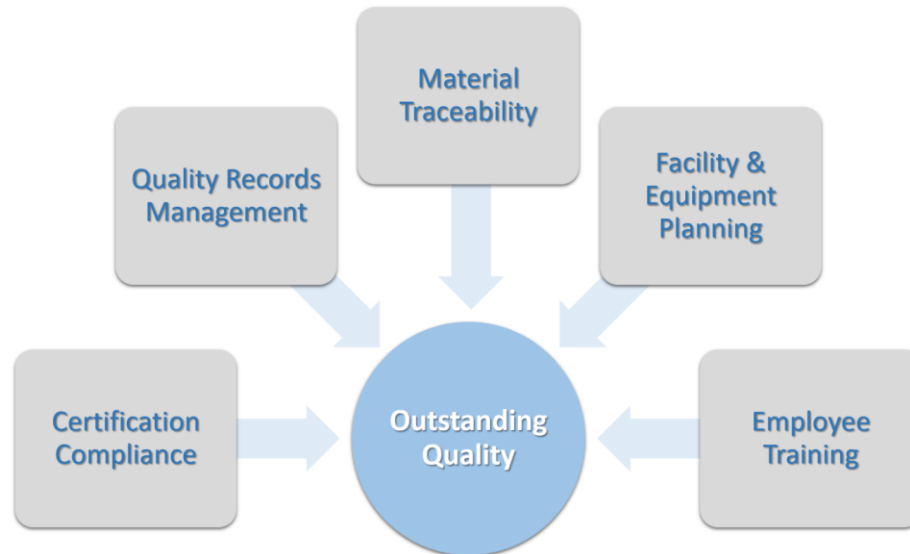
The key to our success lies in our ability to satisfy our end customers with quality products. We require supply chain partners with an aligned commitment to delivering an overall positive experience to our customers by providing exceptional quality, service, innovation, and value. Therefore, our quality policy has three main objectives:



Cree Lighting ensures that the quality policy

- Includes a commitment to comply with requirements and continually improve the effectiveness of the quality management systems.
- Provides a framework for establishing and reviewing quality objectives.
- Is reviewed for continuing suitability.
- Achieves the appropriate results.

## 5.3 Supplier Quality Management Requirements



### 5.3.1 Certification Compliance

Cree Lighting strives to partner with suppliers of production materials who comply with or who have proof of certification to ISO 9001 or ISO/TS 16949 by an accredited registrar. Contact Cree Lighting Supply Chain for specific QMS ISO/TS 16949 requirements.

### 5.3.2 Quality Records Management

Suppliers must retain all quality systems records consistent with the duration of their product warranty, unless otherwise specified. This includes records of process control and traceability which are vital to any required failure analysis.

### 5.3.3 Material Traceability

The supplier's quality system should ensure that products are traceable to raw materials or components used in the manufacturing process, production operation, date of manufacture and revision level. As applicable, the supplier is required to establish a lot traceability system that tracks raw material lot batch numbers to the finished product lot/batch numbers including traceability to inspection records. If specified by Cree Lighting, the product must have identification to address traceability via lot numbers, date codes or other means as applicable.

### 5.3.4 Facility & Equipment Planning

The supplier shall have an infrastructure that ensures compliance with the requirements of the product. The plant layout should be optimized to facilitate the material flow while avoiding excess handling and transport. Lean Manufacturing principles should be understood with evidence of implementation. Examples of Lean: 5S, Value Stream Mapping, Error Proofing, Quick Change-Over, Kanban, Kaizen, Total Productive Maintenance or Visual Management.

### 5.3.5 Employee Training

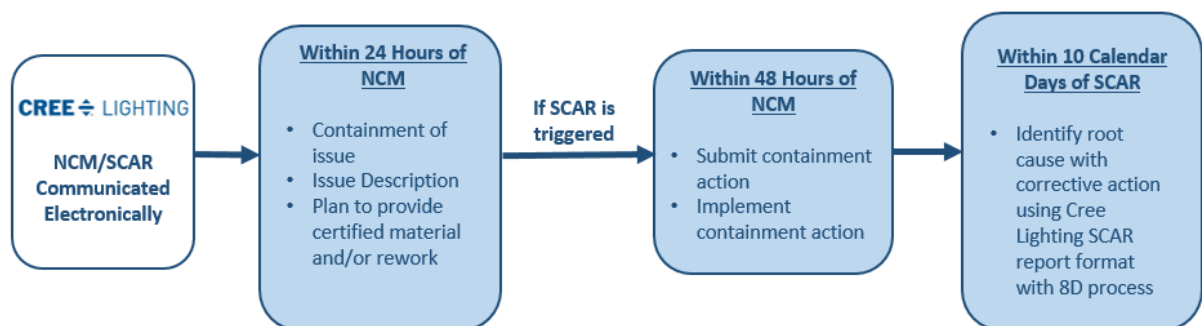
The supplier must ensure that every person at all levels of the company, who could affect product quality, receive adequate and professional ongoing training. This includes direct and indirect staff.

The supplier is encouraged to:

- Evaluate the effectiveness of these trainings
- Implement a system that ensures staff retraining at a frequency determined

## 5.4 Nonconforming Products

This section provides suppliers with the expectations if Cree Lighting receives a nonconforming product. Cree Lighting realizes that quality issues may arise from time to time. The supplier's immediate reaction to quality concerns and nonconforming material is critical to containing the defect at the supplier or Cree Lighting's facility. Doing so prevents the defect from impacting Cree Lighting's downstream customer. The graphic below shows the process Cree Lighting expects suppliers to follow in the case of a nonconforming product.



### 5.4.1 Nonconforming Material (NCM) Communicated Electronically

Suppliers will be notified by Cree Lighting Plant Quality Assurance or Purchasing when nonconforming material is found. Nonconforming material may be identified during

receiving inspection, manufacturing, product assembly, reliability testing, warranty analysis, or through customer notification. An NCM will be communicated electronically to the supplier outlining the defect and supporting rationale for the NCM claim. Cree Lighting Supply Chain will contact the supplier to obtain a Return Material Authorization (RMA) to authorize the return of the defective material to the supplier or to establish a supplier funded rework plan, and to initiate a commercial debit from the supplier.

#### **5.4.2 Within 24 Hours of NCM: Containment of Issue**

The containment of the issue should include a plan to provide certified material and/or rework or certify the identified defective material to allow Cree Lighting to continue production. The supplier will be responsible for the Cost of Poor Quality (COPQ) shown below in Section 5.5 to cover administrative costs as well as any costs associated with sorting material incurred by Cree Lighting which allows Cree Lighting to maintain production until certified material is provided by the supplier. Replacement material, certified by the supplier, must be initiated immediately by the supplier. Cree Lighting expects immediate support from the supplier to contain any issue, and approval of the RMA within 24 hours of the request.

#### **5.4.3 Within 48 Hours of NCM: Submission & Implementation of Containment Action**

Upon notification of the problem, suppliers are required to submit and implement a containment action within 48 hours. For repeat quality concerns, safety issues, or problems which have an impact on Cree Lighting production, Cree Lighting Quality Assurance will issue a Supplier Corrective Action Request (SCAR) to the supplier. The SCAR process follows the industry standard 8 Discipline (8D) problem solving methodology.

#### **5.4.4 Within 10 Days: Supplier Corrective Action Request (SCAR) Response Expectations**

Cree Lighting expects that suppliers identify root cause with corrective action within 10 calendar days using the Cree Lighting SCAR report format. Early action is critical and Cree Lighting expects suppliers of non-conforming product will take extraordinary efforts to ensure effective containment and corrective actions at the supplier's facility to prevent defective product from reaching Cree Lighting's customers.



## 5.5 Cost of Poor Quality (COPQ) & Prevention

An administrative fee may be assessed to the Supplier to capture Cree Lighting’s cost for managing supplier non-conforming material. This fee will be included in the supplier Debit Memo associated with non-conforming material. If the origin of non-conforming is deemed to be Cree Lighting’s responsibility, the charges will not apply to the supplier. The following table outlines the charges applicable to nonconformance events.

Non-Conformance Event	Cost Charged to Supplier
Non-Conforming Material (NCM)	\$50 plus actual labor, material, material handling and freight cost to obtain certified replacement material
Incomplete or Missing Bill of Lading	\$50 administration fee
Late Shipments	The difference between expedited freight and standard freight costs (including air freight if required)
Incorrect Carrier Used	The cost difference between Cree Lighting negotiated rate and supplier selected carrier used
Supplier Corrective Action Request (SCAR)	A minimum cost of \$250 per occurrence associated with Cree Lighting Quality SCAR administration plus actual labor, material, material handling and freight cost to obtain certified replacement material
Cree Lighting’s Customer Warranty claim(s) due to the failure of suppliers’ product	Warranty expenses incurred by Cree Lighting as described in the Cree Lighting Purchase Order Terms and Conditions, or other contract or supplier agreement
Late Completion of Tools/Equipment	Late delivery penalty terms and policies outlined in Purchase Agreement

Further details on charges back to the supplier can be found in the [Cree Lighting Purchase Order Terms and Conditions](#).

### 5.5.1 Cost Prevention

Cree Lighting is focused on preventing events that are costly to our suppliers and is specifically focused on preventing and avoiding COPQ in the stages of full mass production. To prevent costs, Cree Lighting may request monthly quality reports as well as conduct supplier assessments during the stage of full mass production. Cree Lighting also requires that suppliers follow the DFMEA approach, or some equivalent, to identify and minimize any risks. These assessments will focus mostly on quality and manufacturing aspects of a specific site, line, process or group of parts.

## 5.5.2 Risk Avoidance

Cree Lighting encourages its suppliers to take additional actions to avoid risk. Below are different risks and the actions that should be generated to mitigate them:

Strategic Risk	Compliance Risk	Operations Risk	Human-Related Risk
<ul style="list-style-type: none"> <li>• Market analysis</li> <li>• Customer surveys</li> <li>• New product development</li> <li>• Acquisitions</li> <li>• Intellectual property protection - patents</li> </ul>	<ul style="list-style-type: none"> <li>• Trade compliance program</li> <li>• Ethics program</li> <li>• Retention policy</li> </ul>	<ul style="list-style-type: none"> <li>• Quality programs</li> <li>• Engineering gate validation process</li> <li>• Supplier risk mitigation program</li> <li>• Perfect execution program</li> </ul>	<ul style="list-style-type: none"> <li>• Organization review</li> <li>• Performance evaluation process (PEP)</li> <li>• Talent management program</li> <li>• Training programs</li> <li>• Employee opinion survey</li> </ul>

## 6.0 Support of the New Product Development Process

### 6.1 General New Product Development (NPD) Requirements

This section outlines Cree Lighting’s overall requirements in the NPD process that ensures the creation of quality products. By following Advanced Product Quality Planning (APQP), suppliers are guided to build up step by step the different Production Part Approval Process (PPAP) deliverables required for a successful part release. PPAP is one element of the APQP approach focusing on delivering documentation as evidence that the supplier understood Cree Lighting’s requirements.

#### 6.1.1 Advanced Product Quality Planning & Control Plan (APQP)

Suppliers awarded business are required to use the Automotive Industry Action Group (AIAG)’s “Advanced Product Quality Planning and Control Plan” discipline or an equivalent supplier-developed APQP process (validated by Cree Lighting SQE or Plant Quality Management). Cree Lighting expects that Suppliers will enforce the usage of APQP disciplines with their suppliers and will provide Cree Lighting visibility to their supporting supply chain and the supply chain APQP status. Additional information and the latest version of the AIAG PPAP manual, along with other AIAG manuals can be found on the [AIAG website](#).

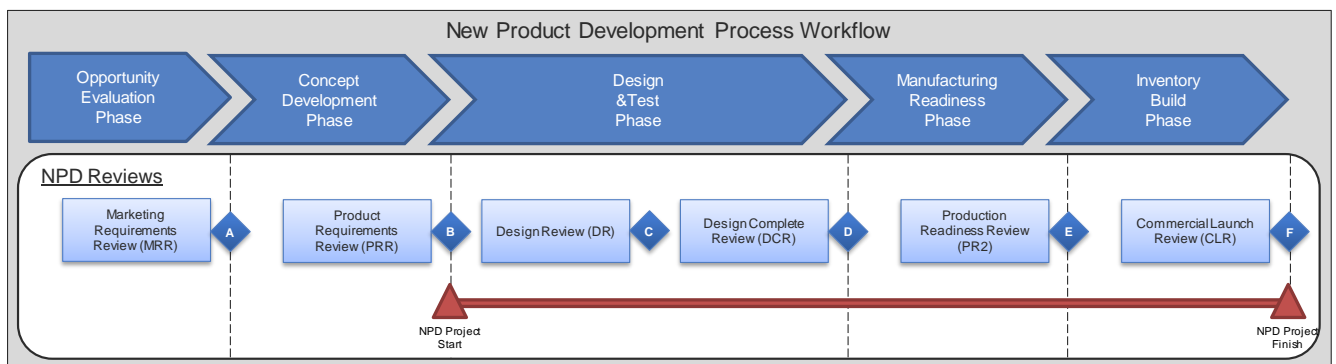
Other product/process design and development expectations include adherence to industry recognized product and process development disciplines such as Failure Mode and Effects Analysis (FMEA). Our suppliers play a key role in the New Product

Development (NPD) Process and we strive to make early sourcing decisions to allow for early supplier involvement.

## 6.2 NPD Process

The sections below outline the objectives, key deliverables, and requirements that must be accomplished within each stage of the NPD Process. All deliverables must be completed to advance to the next gate.

### CREE LIGHTING New Product Development



### 6.2.1 Opportunity Evaluation

Objectives:

- Evaluate opportunities
- Identify target launch date
- Pre-qualify new suppliers

Key Deliverables:

- Readiness to develop product concepts

### 6.2.2 Concept Development

Objectives:

- Voice of the Customer (VoC)
- Risk assessments
- Define manufacturing and sourcing strategy
- Preliminary Supplier Quotes
- Early Supplier Engagement
- Initiation of involvement of Approved Suppliers

Key Deliverables:

- Initial Supplier Technical Feasibility Review
- Readiness to initiate the project

## 6.2.3 Design & Test

Objectives:

- Design verification
- Supplier Technical Feasibility Commitment (STFC)
- Prototype builds
- Design Failure Mode and Effects Analysis (DFMEA)
- Process Failure Mode and Effects Analysis (PFMEA)
- Functional and performance testing
- Manufacturing and sourcing plan
- Supplier sourcing decision

Key Deliverables:

- Prototype trial run
- Readiness for tool build and manufacturing process development

## 6.2.4 Manufacturing Readiness

Objectives:

- Product qualifications achieved
- Run @ rates qualified
- Reliability testing complete
- Successful Pilot build(s)
- Production lines qualified

Key Deliverables:

- Supplier PPAP submission complete and approved
- Approval to order production materials
- Approved launch inventory plan
- Demonstration of capability to run @ rate

## 6.2.5 Inventory Build

Objectives:

- Finished goods active for orders
- All identified SKUs on the shelf
- Component inventory in place at specified levels

Key Deliverables:

- Product approved for market
- Readiness to announce the product to the market and take orders

## 6.2.6 Post Launch Follow-On

Objectives:

- Customer Satisfaction

Key Deliverables:

- Monitor supplier performance
- Complete Supplier Corrective Action Requests (SCARs), as requested
- Continuous supplier improvements instituted; lead-time, cost, and quality improvements addressed.

## 6.3 Production Part Approval Process (PPAP)

Cree Lighting requires that all suppliers complete PPAP using the latest AIAG Edition. Suppliers must complete a [Part Submission Warrant Form](#).

The primary objectives for the PPAP are:

- Ensure part meets specifications
- Ensure supplier has robust process controls
- Ensure supplier has capable processes to meet quality parameters
- Ensure supplier has the proper measurement equipment to meet quality parameters
- Ensure that supplier understands that changes require notification

To demonstrate that these objectives are consistently met, the supplier shall submit the requested documents per the Part Submission Warrant (PSW). Cree Lighting Supplier Quality in cooperation with Purchasing, Logistic and Engineering staff (where appropriate) will review and approve the PPAP submission.

## 7.0 Trade Compliance & Packaging

### 7.1 Trade Compliance Requirements

Cree Lighting requires all suppliers to abide by the following requirements:

- Comply with all trade regulations
- Retain all information necessary to demonstrate such compliance
- Promptly make information and records available to Cree Lighting when requested

## 7.1.1 Import/Export & Security Regulation Compliance

Listed below is a summary of U.S. laws and regulations. Depending on the country of import and export, additional laws and regulations may apply. Suppliers should contact their counsel or Cree Lighting Buyer if they have questions about what additional laws and regulations may apply to individual transactions.

### U.S. Import Regulations

U.S. Customs and Border Protection (CBP) regulates the importation of items into the U.S. These regulations include requirements for classification, valuation, and country of origin marking of the imported merchandise. In addition, duty preference programs, including North American Free Trade Agreement (NAFTA) and Generalized System of Preferences (GSP), must only be utilized if the requirements of the program are met. Upon request, Suppliers must provide applicable duty preference certificates at no cost to Cree Lighting. Suppliers are responsible for any applicable anti-dumping or countervailing duties that must be paid to Customs. The Customs Code of Federal Regulations (CFR) are located at [www.ecfr.gov](http://www.ecfr.gov) (reference: 19 C.F.R. §§1-192). Customs enforces the rules of other U.S. governmental agencies at the border. Suppliers must ensure that they comply with any applicable laws enforced at the border.

### U.S. Export Control Regulations

The U.S. government regulates what items can be exported and to where and to whom they can be exported. Certain items require export licenses under the Export Administration Regulations (EAR), located at 15 C.F.R. §§ 730-774, or the International Traffic in Arms Regulations (ITAR), located at 22 C.F.R. §§ 120-130. In addition, through various sanctions the U.S. government prohibits doing business with certain prohibited governments, entities, and individuals. The Office of Foreign Assets Control Regulations (OFAC Regulations), located at 31 C.F.R. Parts 500-598, implement these sanctions.

### U.S. Trade Security

Cree Lighting is committed to trade security and encourages its suppliers to participate in relevant national and regional programs under the World Customs Organization WCO SAFE framework, including the Customs Trade Partnership Against Terrorism (CTPAT). Information regarding C-TPAT can be found on the Customs and Border Protection website at [www.cbp.gov](http://www.cbp.gov).

## China Import Regulations

The following guidelines apply to shipment of product into China:

- All documentation must be provided in English.
- Commercial Invoices and Packing lists must be stamped or signed.
- If wooden packaging material is being used, a Fumigation Certificate issued by an authorized Inspection Company is required or show IPPC remarks on the package. If this isn't provided, the delivery will be held by China Customs and CIQ and could result in large penalties. These penalties will be charged back to the supplier.
- If non-solid wood (including plywood material) is being used, a No Solid Wood Packaging declaration must be issued with Company stamp and signed.
- The shipping label must show Country of Origin. If this data is missing, the default is to impose the highest tariff among all import countries.
- Important: The Net Weight and Gross Weight mentioned in the packing list must be 100% correct, verified against the Physical Packaged Material.

Supplier's non-compliance to these instructions may result in Customs clearance delays and additional costs such as: penalties, fines and extra taxes during the customs clearance process. These costs will be the responsibility of the supplier.

## **7.2 Packaging, Labeling & Shipping Requirements**

Information regarding packing list requirements, bill of lading requirements, international commercial invoice requirements, and any other requirements related to packaging can be found in the [Cree Lighting Commercial Lighting Packaging, Labeling, and Shipping Requirements Manual](#).

New suppliers to Cree Lighting must provide label samples to Cree Lighting Supply Chain and be approved prior to production shipments.

## **8.0 Delivery & Logistics**

### **8.1 Material Planning & Schedule Communication**

Cree Lighting utilizes two different methods of communication with suppliers regarding material planning and schedule communication. The following are the methods in the order they are preferred.

## 8.1.1 iSupplier

iSupplier is a centralized web-based portal that is used to improve communication between Cree Lighting and our Suppliers. Suppliers do not require the Oracle ERP system to access the iSupplier web portal. Cree Lighting Supply Chain and IT will provide suppliers with an iSupplier User's Manual and an iSupplier account. Information on iSupplier can be obtained from Cree Lighting Supply Chain or by downloading the [iSupplier Portal External User Guide](#). It is the suppliers' responsibility to obtain and follow these requirements.

## 8.1.2 Standard Purchase Order

Providing standard Purchase Orders sent electronically via emails is the traditional way of communicating. However, Cree Lighting strives to ease communication for our Suppliers and strongly prefers the use of iSupplier.

## 8.2 Material Planning & Delivery Schedule Guidelines

To help suppliers in planning and ordering material, Cree Lighting may send supplier blanket release purchase orders. Blanket release agreements will be provided once with all general information in a Blanket Order format. Afterwards the delivery schedules will be released at regular intervals. New Schedule transmissions are considered accepted by the supplier if the supplier does not send written non-acceptance statement within 48 hours of receipt.

## 8.3 Transportation

The selected transportation modes should be appropriate depending on the type of product being moved as well as compliant with national and international transportation and safety regulations. Cree Lighting has established preferred carriers for land, air, and ocean transport and can be found in the [Cree Lighting Supplier Routing Guide](#).

Documentation for each shipment is the responsibility of the supplier and must be complete, timely and legible. The supplier is to provide all necessary customs and other legal documents as required by each country. Requirements for documents such as the commercial invoice, bill of lading, and packing list can be found in the [Cree Lighting Commercial Lighting Packaging, Labeling, and Shipping Requirements Manual](#) or by contacting Cree Lighting Supply Chain.

Each shipment must be secured during transportation in a manner that ensures shipments arrive intact and in good condition. Cree Lighting reserves the right to refuse loads if the shipment is deemed unsafe to offload or store.



## 8.4 First In First Out (FIFO)

To ensure that no obsolete material is shipped to Cree Lighting, suppliers must perform first in/first out (FIFO) inventory management practices. This requirement is subject to audit by Cree Lighting.

## 8.5 Forecast Expectations

Cree Lighting will provide part forecasts on a regular basis. Suppliers are expected to review forecasts to determine whether any capacity or material constraints are violated.

Any violations that cannot be resolved must be communicated to Cree Lighting in a proactive and timely manner. Forecast information provided is for planning purposes and does not constitute a commitment by Cree Lighting to purchase any products nor is it intended to represent binding orders, unless otherwise agreed to in writing.

## 8.6 Expedited Shipments

Occasionally it becomes necessary for expedited shipments. If Cree Lighting is responsible for the expedited freight charges, Suppliers are expected to reference the [Cree Lighting Supplier Routing Guide](#) for a list of appropriate carriers. If the Supplier is responsible for the actions causing expedited freight, the supplier shall be held accountable for all expedited/premium freight costs. Suppliers must also be fully aware and capable of getting shipments lawfully expedited through Customs, or any other governmental agency.

# 9.0 Supplier Performance Assessment & Development

## 9.1 Introduction

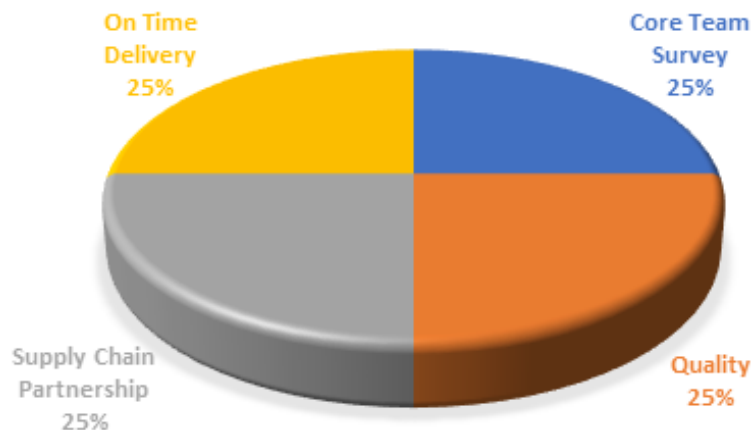
To track and communicate supplier performance, Cree Lighting has established a supplier performance rating system. This rating system is an ongoing, integrated method for collecting, analyzing, and communicating key suppliers' performance data to the supply base to encourage continuous improvement. Active suppliers who provide critical products, significant spend, or have shown performance concerns may receive a Supplier Self-Assessment Audit. Once the supplier fills out the Supplier Self-Assessment, a Cree Lighting buyer and/or Senior Quality Engineer (SQE) will perform an audit using a scorecard. Cree Lighting Management will review the Self-Assessment and audit results and discuss improvement plans to enhance the working relationship between the supplier and Cree Lighting.

Individual Cree Lighting plant quality personnel will communicate with suppliers on a more frequent basis to provide information on non-conforming part issues, feedback on their Quality PPM performance and On-Time Delivery performance.

## 9.2 Supplier Scorecard

The objective of this assessment is to have our key suppliers performing at an overall score of 90 - 100 pts. Cree Lighting's goal is for suppliers to achieve zero incoming nonconformance's. This scorecard is used to communicate performance expectations and measure supplier performance. The graphic below summarizes the four main criteria of a supplier scorecard.

### SCORE CARD MATRIX



## 9.3 Impact of Deterioration in Supplier Performance

If a supplier's performance reduces to a level that is undesirable to Cree Lighting, the supplier will be reviewed until improvements are demonstrated. If the supplier does not address the problems, Cree Lighting may choose to resource the business from the Supplier and terminate the supplier from the Approved Supplier List.

## 9.4 Change Management

Cree Lighting requires suppliers to inform us of all supplier related changes and in many cases, get prior approval from Cree Lighting to proceed with a change. Changes include, but are not limited to:

- Company leadership changes
- Changes in key quality and manufacturing personnel
- Manufacturing plant location changes and major acquisitions
- Divestures or legal disputes that could impact the performance of the company
- Manufacturing process changes
- Adding an additional duplicate or optional production line
- Material changes and/or material source changes
- Design changes (part, process, packaging, etc.)
- Engineering/testing/material specification changes

As a supplier of Cree Lighting, you are required to notify us 90 days prior to any anticipated changes. The request must be made in writing to your Cree Lighting Supply Chain contact. Unapproved changes made by the supplier are subject to chargebacks on costs incurred related to the change.

Any product or process changes, including those associated with a cost reduction, must be approved by Cree Lighting Supply Chain and Supplier Quality Engineering prior to implementation. Uncommunicated changes which result in quality, reliability or customer satisfaction degradation may result in the supplier's removal from Cree Lighting's Approved Supplier List and resourcing of business.

## 9.5 Continuous Improvement & Supplier Development

Cree Lighting is committed to continually improve its performance and that of its supply base. To support these activities, we expect our Suppliers to follow guidelines to guarantee constant growth and success. The following section outlines the expectations that Cree Lighting has for our Suppliers to achieve world-class quality with a relentless drive for continuous improvement.

### 9.5.1 Continuous Improvement Expectations

Suppliers must be cost competitive on a global basis and are expected to achieve substantial year-over-year annual cost reductions as well as demonstrate improvements in product lead time and working capital improvements. Suppliers shall strive to make their operations more efficient and share those savings with Cree Lighting. Cost reduction goals may be communicated as part of new business sourcing awards and include multi-year cost reduction commitments and/or through annual

discussions with your Cree Lighting Supply Chain representative. Suppliers are encouraged to identify and propose cost reduction ideas on current business which would be credited toward their cost reduction objectives. Proposed ideas may relate to any aspect of the supply chain, including design and material changes, packaging improvements, logistics improvements, lean manufacturing, etc. Suppliers should work proactively with their Cree Lighting Supply Chain representative to understand the required cost reduction and lead time improvement objectives.

Regular reviews will be scheduled to track progress and results of improvement plans. Supplier continuous improvement activity is considered in the scorecard performance and in supply strategy, and is indicated by the Quality Level. The quality level is a percentage based on the month and year to date values on the Scorecard. Cree Lighting’s desire is to partner with suppliers that meet the criteria of Level 1 or 2 performers. Any supplier that is consistently performs at the Level 3 or 4 will be considered for removal on the Approved Supplier List and a candidate for resourcing.

Assessment Score & Future Cree Lighting Business		
Overall Score	Quality Level	Description
79% >	Level 1- World Class	<b>Current Supplier:</b> Performance is consistent with CREE Level 1 performance - <b>Recommend Strongly</b>
		<b>New Supplier:</b> Performance is consistent with CREE Level 1 performance - <b>Recommend Strongly</b>
60 - 78%	Level 2- Strategic	<b>Current Supplier:</b> Not currently performing at a CREE Level 1 but has the potential with minimal improvements. Existing business can continue and the supplier can be considered for new business - <b>Recommend with Corrective Actions</b>
		<b>New Supplier:</b> Has the potential to perform at CREE Level 1 with minimal improvements. - <b>Recommend with Corrective Actions</b>
40 - 59%	Level 3 - Maintain	<b>Current Supplier:</b> Corrective Actions are needed for the supplier to improve performance. During this time, Existing business can continue pending CREE review of corrective actions. Supplier can not be considered for new CREE business. - <b>Not Recommended - Source with Risk</b>
		<b>New Supplier:</b> Significant corrective actions needed to bring performance to an acceptable level. - <b>Not Recommended - Source at Risk</b>
< 39%	Level 4 - Non-Performing	<b>Current Supplier:</b> Performance not consistent with minimum CREE Standards. <b>Not recommended for New Business. A Corrective Action Plan must be provided and implemented</b>
		<b>New Supplier:</b> No Business will be awarded. - <b>Not Recommended - Do not Source</b>

The supplier's management should take a lead role in continuous improvement by embracing the concept and by adopting continuous improvement as a key element of their business.

## 9.5.2 Supplier Development Expectations

Supplier Development activities within the supply base allow Cree Lighting and our suppliers to drive continuous improvement efforts. After review of scorecard and audit results, it is expected that the supplier will provide an improvement plan with detailed actions to support improving site level score. Supplier development initiatives should focus on the following:

### Process Control

- Improving quality systems
- Improving product quality
- Improving supplier delivery
- Reducing costs
- Improving Supply Chain effectiveness
- Reducing lead time
- Improving productivity
- Increasing capacity and training

Cree Lighting strives to help Suppliers grow and evolve. As our Suppliers develop, greater responsibility and reward will be granted to those who consistently show outstanding performance in all aspects of doing business with Cree Lighting.

## 10.0 Environmental, Health & Safety

Cree Lighting markets and sells products all over the world and many of our products must comply with various directives and legislation related to controlling, reducing or eliminating hazardous substances or conditions. Due to the ever-expanding global marketplace, these standards are consistently being updated and it is expected that Cree Lighting's suppliers comply with the latest version of these environmental, health and safety requirements.

### 10.1 RoHS Overview

This section describes the Cree Lighting requirements of how suppliers must comply with RoHS.

In 2003, the European Union adopted Directive 2002/65/EC. RoHS prohibits or restricts the use of certain heavy metals and flame retardants in electrical and electronic products placed on the market. In 2013 an updated version, Directive 2011/65/EU (commonly referred to as RoHS 2), was released. RoHS 2 contains more stringent requirements and includes clearer demands per the supplier's obligation to provide reliable information of meeting the requirements. Annex II of Directive 2011/65/EU lists the 6 restricted substances and defines the maximum concentration values allowed for each substance.

Additionally, Directive 2015/863 was added in 2015 amending Annex II to Directive 2011/65/EU by adding 4 additional substances, increasing the restricted substances total from six to ten. Beginning July 22, 2019, all products manufactured by Cree Lighting will be required to comply with the substance list defined in Directive 2015/863.

### 10.1.2 RoHS Requirements

The supplier is responsible for ensuring that the use of RoHS forbidden substances over the maximum concentrations allowed are not present in any parts they are supplying, even if the supplied item is not classified as an electronic component. The product Cree Lighting uses the component in, is classified as an electronic product and must comply with RoHS.

Suppliers must fill out the [RoHS Declaration of Conformity](#) or other form of official documentation for proof of compliance with the latest version of RoHS. If a part includes substances over the restricted value, the part will be stopped for use immediately. If there is any doubt about the reliability in the information, or the RoHS Declaration of Conformity is incorrectly filled out, Cree Lighting can request to analyze the material.

### 10.2 REACH Overview

This section describes the Cree Lighting requirements of how suppliers must comply with REACH. The purpose of the REACH directive (Registration, Evaluation, Authorization, and restriction of Chemicals), is to protect human health and the environment from harmful substances. The supplier is responsible for informing Cree Lighting if, or when, it comes to their knowledge that any SVHC (Substances of Very High Concern) is present in their product to Cree Lighting.

A list of SVHC's can be found at: <https://echa.europa.eu/substances-restricted-under-reach>

## 10.2.1 REACH Requirements

The supplier's minimum requirement is to report all items that contain any SVHC listed on the REACH candidate list. Substances listed on the candidate list shall be reported with the weight percentage for each homogeneous material. Information shall be reported in the Declaration of Content, part of the PPAP.

If the supplier has substances listed on the candidate list or Cree Lighting has any doubts about the reliability in the information, Cree Lighting can request to analyze the material and the supplier may be subject to a non-compliance fee.

If documentation for older parts is missing, Cree Lighting can request documentation for an already approved part. It is necessary for Cree Lighting to get as much information as possible so that Cree Lighting's end products fully comply with REACH.

## 10.3 Environmental, Health & Safety

Cree Lighting expects that its suppliers will consider their workforce, the community, the environment and the use of natural resources in their daily business. The supplier's management shall be committed to assisting Cree Lighting in executing its [Cree Lighting Environmental Health and Safety Policy](#) and understanding that our EHS responsibilities include assuring the supply chain is meeting the expectations of the EHS Policy.

To ensure responsible supply chain EHS performance, supplier audits will be performed evaluating the following elements:

- Written EHS programs and EHS training documentation
- Dedicated personnel, documented incident investigation processes and corrective action plans included in EHS process
- Internal audits conducted to ensure compliance to internal and regulatory requirements
- Monitoring and tracking of EHS activity results and regular reports to management
- Any regulatory safety (e.g. OSHA) citations or regulatory environmental (Notice of Violations - NOVs) citations in the last 3 years
- Worker injury and illness data (Experience Modification Rate or Recordable Incident Rate) compared to the industry average

### 10.3.1 Environmental Requirements

Cree Lighting recommends suppliers maintain an Environmental Management System according to ISO 14001 and continually improve their environmental performance. It is the responsibility of each supplier to provide Cree Lighting Supply Chain with an up-to-date copy of the supplier's certification.

In addition, suppliers should adhere to the environment, health, and safety guidelines outlined in [Supplier Code of Conduct](#).

### 10.3.2 Health & Safety Requirements

Cree Lighting recommends suppliers maintain a Health & Safety Management System according to the ISO 45001 framework and strive to continually improve their Health & Safety performance. Minimally, the supplier must conduct business according to the applicable national legal requirements for Health & Safety.

Suppliers should ensure that occupational health and safety standards are recognized and upheld. To do so, they should abide by the following guidelines:

- Apply appropriate safety measures for equipment and instruments used in their company.
- Evaluate their own safety risks and ensure safety in the workplace with appropriate design, technique, and control methods.
- Evaluate the workplace, related to biological and chemical harms, noise, and air quality, which are harmful to health, and provide appropriate measures to mitigate harms.
- Evaluate occupational injuries and illnesses in the workplace and provide appropriate measures to mitigate such risks.
- Prepare the emergency response measures for possible disasters and accidents to protect human lives and publicize the plan.
- Define physically demanding activities and control appropriately to prevent injury and illness.
- Keep all company facilities safe and hygienic.

### 10.4 Prohibition of Substances

All legally required substance prohibitions, restrictions and threshold values shall be met. This refers to legal requirements of the country where the supplier is located, and the country where the receiving Cree Lighting plant is located.



## 11.0 Definitions

Acronym	Definition
AIAG	Automotive Industry Action Group
APQP	Advanced Product Quality Planning
ASL	Approved Supplier List
COPQ	Cost of Poor Quality
DFMEA	Design Failure Mode and Effects Analysis
EHS	Environmental, Health, & Safety
FIFO	First In First Out
FMEA	Failure Mode Effects Analysis
ISO	International Standardization for Organization
LED	Light-Emitting Diode
NCM	Nonconforming Material
NOV	Notice of Violations
NPD	New Product Development
ODM	Original Design Manufacturer
OEM	Original Equipment Manufacturer
OHSAS	Occupational Health & Safety Advisory Services
PFMEA	Process Failure Mode and Effects Analysis
PPAP	Production Part Approval Process
PPM	Part Per Million
PSW	Part Submission Warrant
PTR	Production Trial Run
RFP	Request for Proposal
RFQ	Request for Quotation
RMA	Return Material Authorization
RPN	Risk Priority Number
SCAR	Supplier Corrective Action Plan
SQE	Senior Quality Engineer
STFC	Supplier Technical Feasibility Commitment
SVHC	Substances of Very High Concern
T&C	Terms & Conditions
VoC	Voice of the Customer

## 12.0 Reference Documents & Sites

Reference Section	Document or Site Title
1	<a href="#">Cree Lighting Website</a>
1.3 & 10.3.1	<a href="#">Supplier Code of Conduct</a>
1.6 & 10.3	<a href="#">Cree Lighting Environmental Health and Safety Policy</a>
1.6.2	<a href="#">Cree Lighting Conflict Minerals</a>
1.6.3, 7.2 & 8.3	<a href="#">Cree Lighting Commercial Lighting Packaging, Labeling, and Shipping Requirements Manual</a>
2.1.1	<a href="#">Potential Supplier Information Form</a>
2.1.2	<a href="#">Supplier Self-Assessment</a>
4.1 & 5.5	<a href="#">Cree Lighting Purchase Order Terms and Conditions</a>
4.2.3	<a href="#">Supplier Technical Feasibility Commitment (STFC)</a>
6.1.1	<a href="#">AIAG Website</a>
6.3	<a href="#">Part Submission Warrant Form</a>
8.1.1	<a href="#">iSupplier Portal External User Guide</a>
8.3 & 8.6	<a href="#">Cree Lighting Supplier Routing Guide</a>
10.1.2	<a href="#">RoHS Declaration of Conformity</a>

## 13.0 Revision Log

Last Date Revised	Version	Section #	Section Title	Description of Revision
November 2018	1	ALL	ALL	Initial Release – 1 <sup>st</sup> Edition
September 2019	2	All	All	Updated to reflect name change to Cree Lighting and associated documents and references

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