the production-related labor investments for all SKUs that practice the '531, '819, '270, and '570 patents as follows:

![Table showing labor investments for Cree Lighting](Image)

JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C.

As with the plant and equipment costs, these labor costs are allocable on an SKU level; as a result, the labor costs associated with products that practice the asserted claims of the '531 and '819 patents can be determined based on the LPW of each product. Cree provided such a calculation.\(^{11}\)

\(^{11}\) See supra n. 10.
<table>
<thead>
<tr>
<th>'531 Claims</th>
<th>LPW Range (as Cree contends)</th>
<th>Labor (Production)</th>
<th>Labor (Production Engineering)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>January 1, 2018—July 15, 2020</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 1</td>
<td>85 or over</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 10</td>
<td>85-113.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 11</td>
<td>110 or over</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 12</td>
<td>110-113.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 25</td>
<td>85-99.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 26</td>
<td>85-109.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>July 16, 2020—November 26, 2020</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 1</td>
<td>85 or over</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 10</td>
<td>85-113.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 11</td>
<td>110 or over</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 12</td>
<td>110-113.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 25</td>
<td>85-99.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 26</td>
<td>85-109.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>'819 Claims</strong></td>
<td><strong>LPW Range (as Cree contends)</strong></td>
<td><strong>Labor (Production)</strong></td>
<td><strong>Labor (Production Engineering)</strong></td>
</tr>
<tr>
<td><strong>January 1, 2018—July 15, 2020</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims 1, 29, 52, 60</td>
<td>60 or over</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 24</td>
<td>60 or over (with color temperature between 2700 and 3500 kelvin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims 25, 48, 57, and 65</td>
<td>60-69.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims 26, 49, 58, and 66</td>
<td>70-79.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims 27, 50, 59, and 67</td>
<td>80-84.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>'819 Claims</td>
<td>LPW Range (as Cree contends)</td>
<td>Labor (Production)</td>
<td>Labor (Production Engineering)</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------------</td>
<td>--------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Claims 1, 29, 52, 60</td>
<td>60 or over</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claim 24</td>
<td>60 or over (with color temperature between 2700 and 3500 kelvin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims 25, 48, 57,</td>
<td>60-69.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and 65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims 26, 49, 58,</td>
<td>70-79.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and 66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims 27, 50, 59,</td>
<td>80-84.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and 67</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CIB at 91-92 (citing Tr. at 885:19-886:25 (Akemann); see also CPB at 829-31 & nn. 75-76.5. None of these figures or calculations are disputed by RAB. Tr. at 149:15-17 (Bakewell); Tr. at 883:1-3 (Akemann).

In addition to Cree’s standard costs shown above, Cree tracks manufacturing variances—the difference between standard costs and actual costs—in the ordinary course of business. Tr. at 149:18-151:19 (Bakewell); JX-0123C (Glover Dep.) at 94:9-23. About [REDACTED] of Cree’s production variances are associated with labor. Tr. at 149:18-151:19 (Bakewell). Cree allocates production variances to the domestic industry products based on the ratio of units of the domestic industry products manufactured to total units manufactured at Racine between January 1, 2018, and July 15, 2020. Tr. at 149:18-151:19 (Bakewell).
Cree’s economic expert Mr. Bakewell summarized his allocation of production variances as follows:

Cree Lighting Production Variances

CDX-0004C.0015.12

Cree does not claim any production and production related-engineering expense with respect to the '449 patent.

b) Finishing Labor

Cree separately tracks labor for finishing products at the Racine facility. Tr. at 73:19-74:17 (Wilcox); Tr. at 151:23-152:25 (Bakewell); JPX-0036C; JPX-0037C. These expenditures are for painting and coating “a significant number of [Cree’s] products, in particular, many of the products used outdoors.” Tr. at 73:19-74:17 (Wilcox). Cree tracks costs related to finishing work at Racine

---

12 This allocation can be ascertained for subsets of products within any LPW range given the evidence in the record. See JPX-0117C, JPX-0118C, JPX-0119C (sortable excel spreadsheets of costs with related LPW values for each SKU).
in the ordinary course of business. Tr. at 151:23-152:25 (Bakewell); JPX-0036C; JPX-0037C. Approximately [Blank] of the finishing costs are labor expenses. Tr. at 151:23-152:25 (Bakewell).

Cree has allocated its finishing costs to domestic industry products based on the ratio of units of domestic industry products finished to total units finished at the Racine facility between January 1, 2018, and July 15, 2020:

Cree does not claim any finishing labor expense with respect to the ’449 patent.

c) Shipping and Logistics

Cree also invests in labor related to shipping and logistics for the ’531, ’819, ’270, and ’570 domestic industry products. CIB at 95 (citing Tr. at 153:4-155:3 (Bakewell); JPX-0036C; JPX-0037C). Approximately [Blank] of the shipping costs are labor costs and approximately [Blank] of logistics costs are labor costs. JX-0123C (Glover Dep.) at 157:1-7. Shipping and logistics costs
vary with the volume of sales of products. *Id.* at 155:15-156:20. Cree therefore allocates its investments in shipping and logistics labor to individual products or product families based on units sold. *Id.*; Tr. at 153:4-155:3 (Bakewell). Mr. Bakewell performed this calculation—conservatively using [X] as the percentage of shipping and logistics costs attributable to labor—and described the results at the hearing.\(^{13}\)

Tr. at 153:4-155:3 (Bakewell); CDX-0004C.0017.

Cree does not claim any shipping and logistics expense with respect to the ’449 patent.

**d) Receiving, Quality Control, And Supply Chain Labor**

For products allegedly practicing the ’449 patent only, which are the CR Downlight and DDS Series products, Cree invests in labor for receiving, inspection, quality control, and supply chain maintenance. These products are manufactured overseas by contract manufacturers. Tr. at

\(^{13}\) *See supra* n. 12.
Cree tracks the average cost per unit ("CPU") for the alleged ’449 domestic industry products, which includes labor costs for the receiving, quality control and supply chain team, in the ordinary course of business. Tr. at 165:7-166:16 (Bakewell). By Cree’s calculation, approximately [REDacted] of the average CPU for the CR Downlight and DDS Series products is related to Cree’s United States based receiving, quality control and supply chain teams. Id. Of the [REDacted] attributable to that team, labor accounts for [REDacted]. Id. Mr. Bakewell used this information to calculate the labor investments associated with the alleged ’449 domestic industry products:

![Diagram of Cree Lighting Investments in U.S. Labor: Receiving, Quality Control, and Supply Chain Labor (’449 Patent)]

Tr. at 165:7-166:16 (Bakewell).

e) Technical Support and Customer Service

For products alleged to practice all five asserted patents, Cree invests in technical support and customer service-related labor activities in the United States. JPX-0041C; JX-0123C (Glover
Dep.) at 99:17-100:2. Mr. Wilcox testified that “[t]here are customer service people” in Racine “who help take the orders and help support our customers by doing things like application-level layouts or tech support calls if there’s a problem.” Tr. at 75:3-22 (Wilcox). Cree maintains records of the costs associated with these teams in the ordinary course of business. JPX-0041C; JX-0123C (Glover Dep.) at 99:17-100:2. Labor accounts for □ of the costs associated with Cree’s technical support and customer service teams. JX-0123C (Glover Dep.) at 155:22-157:4.

As with other labor costs, Cree allocates its technical support labor costs to the domestic industry products based on units of those products sold. Id. From January 1, 2018, through July 15, 2020, Cree invested the following amounts in in technical support and customer service:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments In Technical Support And Customer Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor Investments In Technical Support And Customer Service (□)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Percentage of Units Sold That Practice Each Patent**

|---|---|---|---|---|

**Technical Support and Customer Service Labor Expenses as Allocated to the DI Products**


CIB at 98; JPX-0041C; JPX-0078C; JPX-0113C; JPX-0115C.
f) Research and Development and Engineering-Related Labor and Capital

I find that, for all practical purposes, all of the engineering, research, and development that Cree claims with respect to products alleged to practice the ’531, ’819, ’270, and ’570 patents occurred “in the United States.” Tr. at 93:7-22(Wilcox); JX-0123C (Glover Dep.) at 49:7-50:4. There is no dispute that all product-level engineering and development work for products alleged to practice the ’531, ’819, ’270, and ’570 patents took place at facilities in Racine, Wisconsin, and Durham, North Carolina. Tr. at 93:14-94:8. Cree presented evidence that this work included an iterative design and development process: employees created drawings and designs, built prototypes, tested samples, and finally designed assembly lines. Id. at 95:24-98:9; 98:10–99:8, 100:3–103:23.

The R&D expenses that went into products alleged to practice the ’531, ’819, ’270, and ’570 patents occurred over a long period of time “with multiple mergers and acquisitions,” which complicates the calculation of relevant R&D expenses. Tr. at 98:10-18 (Wilcox). More recently, however, Cree tracks its labor and capital investments in research and development (“R&D”) on a product-family basis. Id. at 98:10-99:8, 101:12-24 (Wilcox). Mr. Wilcox, a fact witness familiar with Cree’s business, credibly testified that Cree’s domestic industry figures likely undercount its actual investments because employees do not always perfectly allocate everything they purchase to a project. Tr. at 98:23-99:8. Cree also provided ample evidence of apportionment of R&D expenses on a SKU-by-SKU basis, allowing apportionment to only those SKUs that allegedly use a particular patented technology. See, e.g., JPX-117C, JPX-0118C, JPX-119C (identifying an amount in the “R&D” column attributable to the SKU in each row).
Cree’s labor and capital R&D investments span more than a decade, and its R&D expenditures are ongoing. Tr. at 95:5-23 (Wilcox) ("Q. For the older products you mentioned, has the research and development stopped? A. It does not. We -- to service the needs of our customers, we continually have to make generational updates to the products.").

RAB postulates that some early R&D relating to the ’531 and ’819 patents occurred in Hong Kong because one inventor, Tony van de Ven, lived in Hong Kong at the time of some of the relevant events. RRB at 34; see Tr. at 357:13-16. But RAB never quantifies how, if at all, this factoid would reduce the millions of dollars undisputedly spent in the United States on R&D for products alleged to practice the ’531, ’819, ’270, and ’570 patents. RAB’s own economic expert, Dr. Akemann, did not dispute the accuracy of the figures Cree attributed to domestic R&D spending. Tr. at 882:20-883:3

RAB also critiques the fact that more recently Cree tracks its R&D investments on a product-family basis, not by individual SKU. RAB focuses on Cree’s admission that, as a result of the nature of its business records, Cree’s economic expert Mr. Bakewell calculated R&D labor totals that “do not depend on the specific LPW ranges used to determine the ’819 and ’531 DI Products.” See RRB at 48; CIB at 102 n.11. RRB at 48. RAB hypothesizes that there might be some family of Cree light fixtures for which some models have an LPW rating inside the patented range and some models have an LPW rating outside the range, and Cree has counted the R&D investment for the entire family. Id. According to RAB, this means that Cree has counted R&D investments in products that do not practice the technology in the ’819 and ’531 patents.

I reject RAB’s entirely speculative argument. The record contains reams of data about Cree’s SKUs, LPW values, and associated R&D allocations. See, e.g., JPX-117C, JPX-0118C, JPX-119C. RAB has not identified a single product family having SKU members both inside and
outside a claimed range, let alone that both practicing and non-practicing SKUs were both counted in Mr. Bakewell’s calculations. RAB had ample opportunity to gather evidence to test Mr. Bakewell’s opinions in discovery, but it cites no record evidence now to support its theory.

I find the vast weight of the record evidence supports the following domestic R&D investments relating to products alleged to practice the ’531, ’819, ’270, and ’570 patents:

![Cree Lighting Total Investments in R&D Labor and Capital*](image)

JPX-0042C; JPX-0087C; JPX-0088C; JPX-0089C; JPX-0090C; JPX-0091C; JX-0092C; JPX-0093C; JPX-0094C; JPX-0095C; JPX-0096C; JPX-0097C; JPX-0098C; JPX-0101C; JX-0102C; JX-0103C; JX-0104C; JX-0105C; JX-0106C; JPX-0109C; JPX-0110C; JPX-0120C.

Cree separately calculated its R&D costs attributable to products alleged to practice the ’449 patent. RAB notes that all three inventors listed on the ’449 patent listed their residence as Hong Kong, “suggesting that research-related investment on the ’449 patent occurred there.” RRB at 34. In my “significance” analysis below I discuss the record evidence of foreign activities relating to R&D for products alleged to practice the ’449 patent. But there is no evidence of
inaccuracies in the totals Mr. Bakewell proffered for domestic spending on R&D relating to products alleged to practice the '449 patent. The record contains testimony from Mr. Wilcox, a Cree employee personally involved in the domestic R&D relating to the '449 patent. Tr. at 94:9-19. Indeed, RAB’s economic expert, Dr. Akemann, did not dispute the accuracy of the figures Cree attributed to domestic R&D spending. Tr. at 882:20-883:3. I therefore find Cree’s domestic spending on R&D relating to products alleged to practice the '449 patent is as follows:

![Table showing Cree Lighting Investments in '449 Patent]

JPX-0075C; JPX-0089C; JX-0092C; JPX-0109C; JPX-0110C. Neither RAB nor its expert dispute Mr. Bakewell’s calculation of R&D investments. Tr. at 161:23-162:1 (Bakewell); Tr. at 883:1-3 (Akemann).
g) **Total Domestic Industry Investment**

Cree has demonstrated the following total domestic investments, excluding customer and technical support labor:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant and equipment</td>
<td>Jan. 1, 2018 to July 15, 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-prong (B)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production labor and capital</td>
<td>Jan. 1, 2018 to July 15, 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D labor and capital</td>
<td>Approx. 2007 to July 15, 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Domestic Investments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
When customer and technical support labor is included, Cree’s total claimed domestic industry expenditure is as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant and equipment</td>
<td>Jan. 1, 2018 to July 15, 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-prong (B)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production labor and capital</td>
<td>Jan. 1, 2018 to July 15, 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Support and Customer Service Labor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D labor and capital</td>
<td>Approx. 2007 to July 15, 2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Domestic Investments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Research and Development (Sub-prong (C))

Cree argues that its investments in labor and capital for research and development, see supra part IX.B.2.f), can also be considered under sub-prong (C). CIB at 100 n. 10 (citing Solid State Storage Drives, Comm’n Op. at 5-6, 13-14; Certain Robotic Vacuum Cleaning Devices, Inv. No. 337-TA-1057, Comm’n Op. at 11-13 (Aug. 1, 2018); Certain Marine Sonar Imaging Devices, Including Downscan and Sidescan Devices, Products Containing the Same, Inv. No. 337-TA-921, Comm’n Op. at 58-64 (January 6, 2016). Cree contends the nexus required under sub-prong (C) between its R&D expenditures and the domestic industry products can be presumed because “the research investment is in the article protected by the patent.” CIB at 105-106 (citing Certain Non-Volatile Memory Devices & Prod. Containing the Same, Inv. No. 337-TA-1046, Comm’n Op., at
41 n.11 (Oct. 26, 2018) and Certain Electronic Digital Media Devices and Components Thereof, Inv. No. 337-TA-796, Initial Determination at 454 (Sept. 14, 2012) (explaining that “if a product practices (i.e., exploits) the patented technology then naturally any investments in said product also promote the exploitation of the patented technology’’).

RAB appears to contend that record evidence rebuts the presumption of a nexus to the patented technology. See RRB at 47-49 (citing Certain Integrated Circuit Chips, Inv. No. 337-TA-859, Comm’n Op. at 44-50 (Aug. 22, 2014) (USITC Pub. No. 4849)). For example, with respect to the ’531, ’819, and ’449 patents, RAB contends that some R&D leading to the claimed inventions occurred overseas and only “details” were researched in the United States. RRB at 48. That argument misconstrues the hearing testimony and lacks merit. The record contains ample evidence of domestic investment in R&D related to the patented technology, including testimony from Mr. Wilcox, a U.S. employee of Cree who “had multiple teams of engineers and R&D people reporting to [him] who were in the North Carolina facility.” Tr. at 94:9-19.

RAB also argues that Cree R&D spending is tracked by product family, not by SKU, and some products in a family do not practice an asserted patent, breaking any presumed nexus. As noted above in subsection 2.f), RAB’s argument is speculative and I reject it.

4. Significance and Substantiality of Cree’s Domestic Investments

To establish a domestic industry, a complainant need not eclipse some “minimum monetary expenditure.” Certain Stringed Musical Instruments, Inv. No. 337-TA-586, Comm’n Op. at 25-26 (May 16, 2008). Nor does a complainant need “to define the industry itself in absolute mathematical terms.” Id. A complainant need only establish that its activities are significant by showing how those activities are important to the articles protected by the patent in the context of the company’s operations, the marketplace, or the industry in question. See Certain Printing and

a) The ’531 patent

Earlier I determined that all of the asserted claims of the ’531 patent are invalid. See supra part IV.C. I find, in the alternative that the claims are valid, that Cree has demonstrated an industry exists with respect to articles protected by those claims.14

(1) Plant and Equipment

With respect to plant and equipment, Cree has shown undisputed evidence that it has invested in plant and equipment attributable to products alleged to practice claim 1 of the ’531 patent. Because all of the other claims of the ’531 patent overlap with claim 1, this total represents Cree’s broadest possible showing of domestic investment in plant and equipment. RAB does not appear to dispute either this number or that it constitutes a significant investment, both qualitatively and quantitatively. RRB at 40-47.

RAB argues the significance of Cree’s plant and equipment investments should be discounted because Cree has failed to show a “relationship” between its domestic activities and the “asserted patents.” See RRB at 49-51. “The Commission has not required complainants to show exploitation of the patented technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).” Certain Solid State Storage Drives, Inv. No. 337-TA-1097, ____________

14 RAB argues that if only some of the claims of the ’531 patent are invalid, Cree’s arguments concerning allocation of costs for the remaining claims are waived. See RRB at 40-47. But I specifically asked for evidence that would allow me and the Commission to make such allocations depending on the disposition of other legal issues. Tr. at 1155:14-20. There is no waiver here.
Comm’n Op. at 13 (June 29, 2018). The correct question is whether the investments are “sufficiently ‘related to’ the domestic industry products.” Id. at 13-14 (emphasis added). RAB has stipulated that the domestic industry products to which these expenses relate practice the asserted patent claims. See JX-0169C.0003-0006.

I find that Cree’s investment in plant and equipment attributable to the alleged ’531 patent domestic industry products is quantitatively significant. I additionally find that the expenditures are qualitatively significant because production of the alleged ’531 domestic industry products represent of the total production of the Racine facility, see Tr. at 183:11-184:14 (Bakewell); CDX-004C.0031; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C, and of the total plant-wide cost. See CDX-004C.0033; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C. I additionally note that products alleged to practice the ’531 patent represented of Cree’s total domestic sales, demonstrating commercial success of the products and thus the significance of investment in the products. Tr. at 173:13-174:16, 174:17-175:2; 176:5-24 (Bakewell); CDX-0004C.0027; see Certain High-Density Fiber Optic Equip. & Components Thereof, Inv. No. 337-TA-1194, Initial Determination at 408 (Mar. 23, 2021) (investments “responsible for the development and support of … products that have been extremely successful in the market . . . are significant and substantial”), affirmed in relevant part, 86 FR 43564 (August 9, 2021).

(2) Labor and Capital

With respect to labor and capital, Cree has shown undisputed evidence that it has invested in labor and capital attributable to products alleged to practice claim 1 of the ’531 patent. Because all of the other claims of the ’531 patent overlap with claim 1, this total represents Cree’s broadest possible showing of domestic investment in labor and capital related to the ’531
patent. RAB does not appear to dispute either this number or that it constitutes a significant investment, both qualitatively and quantitatively. RRB at 40-47.

RAB argues the significance of Cree’s labor and capital investments should be discounted because Cree has failed to show a “relationship” between its domestic activities and the “asserted patents.” See RRB at 49-51. “The Commission has not required complainants to show exploitation of the patented technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).” Certain Solid State Storage Drives, Inv. No. 337-TA-1097, Comm’n Op. at 13 (June 29, 2018). The correct question is whether the investments are “sufficiently ‘related to’ the domestic industry products.” Id. at 13-14 (emphasis added). RAB has stipulated that the domestic industry products to which these expenses relate practice the asserted patents. See JX-0169C.0003-0006.

RAB also argues that Cree has failed to demonstrate significance because it failed to compare its domestic research and development expenditure to its foreign expenditures. RRB at 34-36. Specifically, RAB notes that one inventor listed on the ’531 patent lived in Hong Kong and Cree has admitted that some of the initial research leading to the patent was conducted there. But comparisons of foreign and domestic expenditures are only one factor the Commission may consider when determining significance of investment. See Certain Optoelectronic Devices, 337-TA-860, Comm’n Op. at 18-19 (Public Version) (May 9, 2014) (comparing a complainant’s domestic expenditures to its foreign expenditures is one factors the Commission may use to evaluate the significance of a domestic industry, but it is not required to consider that factor in every case). The evidence is clear that all of the product-level development work on the alleged ’531 products was done in the United States. Tr. at 93:7-22 (Wilcox) (“Q. Do you know where the research and development work on [the Domestic Industry Products] was performed? A. In
the United States, in North Carolina and Racine, Wisconsin.”); see also id. at 75:3-22 (“We have engineers who help design and . . . architect, build, test, get the products listed” in Racine).

I find that Cree’s investment in labor and capital attributable to the ’531 patent domestic industry products is quantitatively significant. I additionally find that the expenditures are qualitatively significant because production of the alleged ’531 domestic industry products represent of the total production of the Racine facility, see Tr. at 183:11-184:14 (Bakewell); CDX-004C.0031; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C, and of the total plant-wide cost. See CDX-004C.0033; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C.

I additionally find this investment is significant because the alleged ’531 patent domestic industry products are developed, designed, and manufactured in the United States. See Tr. at 93:7-17, 112:5-10 (Wilcox). When products are both “developed in the United States and . . . made in the United States,” the “result [is] a ‘value added’ ratio of nearly 100%.” Certain Wearable Monitoring Devices, Inv. No. 337-TA-1190, Order No. 34 at 31 (Oct. 1, 2020), affirmed, Comm’n Op. at 39 (May 5, 2021).

(3) Research and Development

As addressed above, Cree relies on its investments in labor and capital for research and development to satisfy sub-prong (C) as well. See supra part IX.B.2.f).

“If a product practices (i.e., exploits) the patented technology then naturally any investments in said product also promote the exploitation of the patented technology” and can also be considered under sub-prong (C). Certain Electronic Digital Media Devices and Components Thereof, Inv. No. 337-TA-796, Initial Determination at 454 (Sept. 14, 2012). RAB’s arguments that Cree has not shown the required nexus are meritless for the reasons addressed above. See supra part IX.B.3.
Here, Cree has presented evidence of a substantial investment in research and development related to the ’531 patent. See CDX-00004C.0020. This represents more than one third of Cree’s labor and capital domestic industry expenditures related to the ’531 patent, the total of which I found significant. See supra part IX.B.4.a)(2). I find that Cree’s research and development investment is substantial both quantitatively and qualitatively.

I additionally find this investment is substantial because the alleged ’531 patent domestic industry products are developed, designed, and manufactured in the United States. See Tr. at 93:7-17, 112:5-10 (Wilcox). When products are both “developed in the United States and … made in the United States,” the “result [is] a ‘value added’ ratio of nearly 100%.” Certain Wearable Monitoring Devices, Inv. No. 337-TA-1190, Order No. 34 at 31 (Oct. 1, 2020), affirmed, Comm’n Op. at 39 (May 5, 2021).

b) The ’819 patent

Earlier I determined that all of the asserted claims of the ’819 patent are invalid. See supra part V.C. I find, in the alternative that the claims are valid, that Cree has demonstrated an industry exists with respect to articles protected by those claims.15

(1) Plant and Equipment

With respect to plant and equipment, Cree has shown undisputed evidence that it has invested substantially in plant and equipment attributable to products alleged to practice claim 1 of the ’819 patent. Because all of the other claims of the ’819 patent overlap with claim 1, this total represents the broadest possible showing of domestic investment in plant and equipment. RAB

15 RAB argues that if only some of the claims of the ’819 patent are invalid, Cree’s arguments concerning allocation of costs for the remaining claims are waived. See RRB at 40-47. But I specifically asked for evidence that would allow me and the Commission to make such allocations depending on the disposition of other legal issues. Tr. at 1155:14-20. There is no waiver here.
does not appear to dispute either this number or that it constitutes a significant investment, both qualitatively and quantitatively. RRB at 40-47.

RAB argues the significance of Cree’s investments should be discounted because Cree has failed to show a “relationship” between its domestic activities and the “asserted patents.” See RRB at 49-51. “The Commission has not required complainants to show exploitation of the patented technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).” 

Certain Solid State Storage Drives, Inv. No. 337-TA-1097, Comm’n Op. at 13 (June 29, 2018). The correct question is whether the investments are “sufficiently ‘related to’ the domestic industry products.” Id. at 13-14 (emphasis added). RAB has stipulated that the domestic industry products to which these expenses relate practice the asserted patent claims. See JX-0169C.0003-0006.

I find that Cree’s investment in plant and equipment attributable to the alleged ’819 patent domestic industry products is quantitatively significant. I additionally find that the expenditures are qualitatively significant because production of the alleged ’819 domestic industry products represent of the total production of the Racine facility, see Tr. at 183:11-184:14 (Bakewell); CDX-004C.0031; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C, and of the total plant-wide cost. See CDX-004C.0033; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C. I additionally note that products alleged to practice the ’819 patent represented of Cree’s total domestic sales, demonstrating commercial success of the products and thus the significance of investment in the products. Tr. at 173:13-174:16, 174:17-175:2; 176:5-24 (Bakewell); CDX-0004C.0027; see Certain High-Density Fiber Optic Equip. & Components Thereof, Inv. No. 337-TA-1194, Initial Determination, Initial Determination at 408 (Mar. 23, 2021) (investments “responsible for the development and support of . . . products that have been extremely successful
in the market . . . are significant and substantial”), affirmed in relevant part, 86 FR 43564 (August 9, 2021).

(2) Labor and Capital

With respect to labor and capital, Cree has shown undisputed evidence that it has invested in labor and capital attributable to products alleged to practice claim 1 of the ’819 patent. Because all of the other claims of the ’819 patent overlap with claim 1, this total represents the broadest possible showing of domestic investment in labor and capital related to the ’819 patent. RAB does not appear to dispute either this number or that it constitutes a significant investment, both qualitatively and quantitatively. RRB at 40-47.

RAB argues the significance of Cree’s investments should be discounted because Cree has failed to show a “relationship” between its domestic activities and the “asserted patents.” See RRB at 52-53. “The Commission has not required complainants to show exploitation of the patented technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).” Certain Solid State Storage Drives, Inv. No. 337-TA-1097, Comm’n Op. at 13 (June 29, 2018). The correct question is whether the investments are “sufficiently ‘related to’ the domestic industry products.” Id. at 13-14 (emphasis added). RAB has stipulated that the domestic industry products to which these expenses relate practice the asserted patents. See JX-0169C.0003-0006.

RAB argues that Cree has failed to demonstrate significance because it failed to compare its domestic research and development expenditure to its foreign expenditures. RRB at 34-36. Specifically, RAB notes that one inventor listed on the ’819 patent lived in Hong Kong and Cree has admitted that some of the initial research leading to the patent was conducted there. But comparisons of foreign and domestic expenditures are only one factor the Commission may consider when determining significance of investment. See Certain Optoelectronic Devices, 337-
TA-860, Comm’n Op. at 18-19 (Public Version) (May 9, 2014) (comparing a complainant’s
domestic expenditures to its foreign expenditures is one factors the Commission may use to
evaluate the significance of a domestic industry, but it is not required to consider that factor in
every case). The evidence is clear that all of the product-level development work on the alleged
’819 products was done in the United States. Tr. at 93:7-22 (Wilcox) (“Q. Do you know where
the research and development work on [the Domestic Industry Products] was performed? A. In
the United States, in North Carolina and Racine, Wisconsin.”); see also id. at 75:3-22 (“We have
engineers who help design and . . . architect, build, test, get the products listed” in Racine).

I find that Cree’s [redacted] investment in labor and capital attributable to the alleged ’819
patent domestic industry products is quantitatively significant. I additionally find that the
expenditures are qualitatively significant because production of the ’819 domestic industry
products represent [redacted] of the total production of the Racine facility, see Tr. at 183:11-184:14
(Bakewell); CDX-004C.0031; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C, and [redacted] of the
total plant-wide cost. See CDX-004C.0033; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C.
I additionally find this investment is significant because the alleged ’819 patent domestic industry
products are developed, designed, and manufactured in the United States. See Tr. at 93:7-17,
112:5-10 (Wilcox). When products are both “developed in the United States and … made in the
United States,” the “result [is] a ‘value added’ ratio of nearly 100%.” Certain Wearable
Monitoring Devices, Inv. No. 337-TA-1190, Order No. 34 at 31 (Oct. 1, 2020), affirmed, Comm’n

(3) Research and Development

As addressed above, Cree relies on its investments in labor and capital for research and
development to satisfy sub-prong (C) as well. See supra part IX.B.2.f).
“If a product practices (i.e., exploits) the patented technology then naturally any investments in said product also promote the exploitation of the patented technology” and can also be considered under sub-prong (C). Certain Electronic Digital Media Devices and Components Thereof, Inv. No. 337-TA-796, Initial Determination at 454 (Sept. 14, 2012). RAB’s arguments that Cree has not shown the required nexus are meritless for the reasons addressed above. See supra part IX.B.3.

Here, Cree has presented evidence of a __________ investment in research and development related to the ’819 patent. See CDX-00004C.0020. This represents nearly one half of Cree’s labor and capital domestic industry expenditures related to the ’819 patent, the total of which I found significant. See supra part IX.B.4.b)(2). I find that Cree’s research and development investment is substantial both quantitatively and qualitatively.

I additionally find this investment is substantial because the alleged ’819 patent domestic industry products are developed, designed, and manufactured in the United States. See Tr. at 93:7-17, 112:5-10 (Wilcox). When products are both “developed in the United States and … made in the United States,” the “result [is] a ‘value added’ ratio of nearly 100%.” Certain Wearable Monitoring Devices, Inv. No. 337-TA-1190, Order No. 34 at 31 (Oct. 1, 2020), affirmed, Comm’n Op. at 39 (May 5, 2021).

c) The ’449 patent

Earlier I found that the sole asserted claim of the ’449 patent is invalid, see supra part VI.D, and not practiced by the ’449 Domestic Industry Products, see supra part VI.C. I additionally find that Cree has failed to meet its burden to show satisfaction of the economic prong of the domestic industry requirement.
(1) **Plant and Equipment**

Cree has not claimed any investment in plant and equipment relating to products protected by the ’449 patent. It is undisputed that the ’449 patent domestic industry products are manufactured abroad and imported.

(2) **Labor and Capital**

Cree argues that its investments in labor and capital relating to the ’449 patent domestic industry products are significant under subparagraph (B) based on an estimated investment in production labor and capital relating to receiving, quality control, and supply chain labor over a 2.5 year period (equating to approximately per year), for technical support, and in purported research and development labor and capital over an eight-year period (approximately per year). CIB at 103. Manufacturing of the ’449 Domestic Industry Products occurs overseas, see Tr. at 112:5-21 (Wilcox), and Cree admitted during the hearing that no R&D for the ’449 patent has occurred since 2015. Id. at 124:18-21; see also id. at 867:17-22 (Akemann).

To begin, the only non-R&D labor expense Cree claims related to the ’449 patent is for “receiving, inspection, quality control, and supply chain maintenance with respect to products manufactured overseas by contract manufacturers” and technical support. CIB at 96-98. For the ’449 patent, Cree claims it expended total for the importation supply chain activities and for technical support. Id. Cree does not explain why, absent other expenditures, this conduct would differentiate its investment in the ’449 domestic industry products from the activities of a mere importer. See Certain Male Prophylactic Devices, Inv. No. 337-TA 546, Comm’n Op. at 39 (Aug. 1, 2007) (“The economic prong requirement exists to ensure that
domestic production-related activities as opposed to those of a mere importer, are protected by the statute").

Cree’s showing for R&D labor does not cure the problem. As noted above, Cree has presented no evidence of any R&D spend related to the alleged ’449 domestic industry products in the last six years, see Tr. at 124:18-21, and possibly as many as the last eight. Tr. at 862:20-865:7 (Akemann); CDX-0004C.0021(collecting expenditures from as far back as 2012 without annualized trends). This is in stark contrast to its R&D expenditures for the four other patents, which are ongoing. See Tr. at 896:2-23 (Akemann) (Cree’s R&D investments in 2018 and 2019 were each larger than it’s 2013, 2015, or 2017 investments), 903:24-904:21 (“The rate of change did increase after the filing of the complaint in the second half of the year”); 171:5-23 (Bakewell); CDX-004C.0024 (Cree’s expenditures on the four other asserted patents increased in the months following filing of the complaint); JPX-0119C. Years of no domestic R&D investment—the only investment on this record that would be distinct from that of a mere importer—indicate no domestic industry “exists” within the meaning of section 337.

Additionally, even if Cree’s R&D investments were recent, the magnitude of the claimed expenditure is insignificant and insubstantial in comparison to Cree’s investments in the other four asserted patents. While Cree points to \[\text{redacted} \] in total R&D labor investment relating to alleged ’449 products, that total is dwarfed by the combined \[\text{redacted} \] Cree expended in R&D labor and capital attributable to products alleged to practice the other four patents. See CDX-0004C.0020; JPX-0042C; JPX-0087C; JPX-0088C; JPX-0089C; JPX-0090C; JPX-0091C; JX-0092C; JPX-0093C; JPX-0094C; JPX-0095C; JPX-0096C; JPX-0097C; JPX-0098C; JPX-0101C; JX-0102C; JX-0103C; JX-0104C; JX-0105C; JX-0106C; JPX-0109C; JPX-0110C; JPX-0120C. More specifically, the level of domestic investments in the alleged ’449 domestic
industry products is less than [redacted] of that for products allegedly relating to the '570 patent; less than [redacted] of the alleged '531 products; less than [redacted] of the alleged '819 products; and less than [redacted] of the alleged '270 products. Tr., 855:15-856:16 (Akemann); RDX-0008C.003. Compared to all domestic investments, the investments in products alleged to practice the '449 patent are also relatively small. Tr. at 857:4-858:3 (Akemann); RDX-0008C.004. The production-related investments for products alleged to practice the '449 patent are less than [redacted] of all domestic investments. Tr. at 857:4-21 (Akemann); RDX-0008C.004.

Nor are Cree’s investments in the alleged '449 domestic industry products significant in the context of Cree’s overall business. Revenue for the alleged '449 domestic industry products accounted for a small fraction (approximately [redacted]) of company-wide revenue during the claimed period. Tr. at 860:10-861:3 (Akemann), RDX-0008C.005. Unit sales for the alleged '449 domestic industry products are also small in relation to the company-wide United States unit sales (approximately [redacted]). Tr. at 860:10-861:3. Unit sales for the '449 products are somewhat larger when compared to all units manufactured at the Racine facility (approximately [redacted]), but are still relatively small. Tr. at 895:23-896:1 (Akemann), RDX-0008C.005.

Cree contends that its [redacted] domestic R&D investment is significant compared to a [redacted] investment in overseas tooling. CIB at 112-14. That selective comparison misses the more salient evaluation, which would be a comparison between Cree’s foreign expenditures for the actual manufacture of the alleged '449 domestic industry products and its domestic investments. Cree’s failure to provide data allowing such a comparison is telling.

In sum, the products alleged to practice the '449 patent are manufactured entirely abroad. Cree quit making R&D investments in those products at least six years ago, and its ongoing domestic activities relating to those products are indistinct from those of a mere importer. No
domestic industry relating to articles alleged to practice the ’449 patent exists. See Certain Male Prophylactic Devices, at 39.

(3) Research and Development

Cree’s investment in R&D with respect to the alleged ’449 domestic industry products of [REDACTED] is not substantial for fundamentally the same reasons it is not significant under sub-prong (B). See supra part IX.B.4.c)(2).

d) The ’270 patent

RAB does not meaningfully dispute that Cree has satisfied the economic prong with respect to the ’270 patent. For the following reasons, I find that Cree has made significant and substantial investments related to products practicing the ’270 patent.

(1) Plant and Equipment

With respect to plant and equipment, Cree has shown undisputed evidence that it has invested [REDACTED] in plant and equipment attributable to products that practice the ’270 patent claims.

RAB argues the significance of Cree’s investments should be discounted because Cree has failed to show a “relationship” between its domestic activities and the “asserted patents.” See RRB at 50-51. “The Commission has not required complainants to show exploitation of the patented technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).” Certain Solid State Storage Drives, Inv. No. 337-TA-1097, Comm’n Op. at 13 (June 29, 2018). The correct question is whether the investments are “sufficiently ‘related to’ the domestic industry products.” Id. at 13-14 (emphasis added). RAB has stipulated that the domestic industry products to which these expenses relate practice the asserted patent claims. See JX-0169C.0003-0006.
I find that Cree’s investment in plant and equipment attributable to the’270 patent domestic industry products is quantitatively significant. I additionally find that the expenditures are qualitatively significant because production of the ’270 domestic industry products represent of the total production of the Racine facility, see Tr. at 183:11-184:14 (Bakewell); CDX-004C.0031; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C, and of the total plant-wide cost. See CDX-004C.0033; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C. I additionally note that products practicing the ’270 patent represented of Cree’s total domestic sales, demonstrating commercial success of the products and thus the significance of investment in the products. Tr. at 173:13-174:16, 174:17-175:2; 176:5-24 (Bakewell); CDX-0004C.0027; see Certain High-Density Fiber Optic Equip. & Components Thereof, Inv. No. 337-TA-1194, Initial Determination, Initial Determination at 408 (Mar. 23, 2021) (investments “responsible for the development and support of … products that have been extremely successful in the market . . . are significant and substantial”), affirmed in relevant part, 86 FR 43564 (August 9, 2021).

(2) Labor and Capital

With respect to labor and capital, Cree has shown undisputed evidence that it has invested in labor and capital attributable to products that practice the ’270 patent claims.

RAB argues the significance of Cree’s investments should be discounted because Cree has failed to show a “relationship” between its domestic activities and the “asserted patents.” See RRB at 52-53. “The Commission has not required complainants to show exploitation of the patented technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).” Certain Solid State Storage Drives, Inv. No. 337-TA-1097, Comm’n Op. at 13 (June 29, 2018). The correct question is whether the investments are “sufficiently ‘related to’ the domestic industry
products.”” *Id.* at 13-14 (emphasis added). RAB has stipulated that the domestic industry products to which these expenses relate practice the asserted patent claims. See JX-0169C.0003-0006.

I find that Cree’s **investment in labor and capital attributable to the ’270 patent domestic industry products** is quantitatively significant. I additionally find that the expenditures are qualitatively significant because production of the ’270 domestic industry products represent **of the total production of the Racine facility**, *see* Tr. at 183:11-184:14 (Bakewell); CDX-004C.0031; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C, and **of the total plant-wide cost. *See* CDX-004C.0033; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C. I additionally find this investment is significant because all of the ’270 patent domestic industry products are developed, designed, and manufactured in the United States. *See* Tr. at 93:7-17, 112:5-10 (Wilcox). When products are both “developed in the United States and … made in the United States,” the “result [is] a ‘value added’ ratio of nearly 100%.” *Certain Wearable Monitoring Devices*, Inv. No. 337-TA-1190, Order No. 34 at 31 (Oct. 1, 2020), *affirmed*, Comm’n Op. at 39 (May 5, 2021).

**Research and Development**

As addressed above, Cree relies on its investments in labor and capital for research and development to satisfy sub-prong (C) as well. *See supra* part IX.B.2.f).

“If a product practices (*i.e.*, exploits) the patented technology then naturally any investments in said product also promote the exploitation of the patented technology” and can also be considered under sub-prong (C). *Certain Electronic Digital Media Devices and Components Thereof*, Inv. No. 337-TA-796, Initial Determination at 454 (Sept. 14, 2012). RAB’s arguments that Cree has not shown the required nexus are meritless for the reasons addressed above in connection with sub-prong (B). *See supra* part IX.B.3.
Here, Cree has presented evidence of RAB in research and development related to products that practice the ’270 patent claims. See CDX-00004C.0020. This represents more than a quarter of Cree’s labor and capital domestic industry expenditures related to the ’270 patent, the total of which I found significant. See supra part IX.B.4.d)(2). I find that Cree’s research and development investment is substantial both quantitatively and qualitatively.

I additionally find this investment is substantial because the alleged ’270 patent domestic industry products are developed, designed, and manufactured in the United States. See Tr. at 93:7-17, 112:5-10 (Wilcox). When products are both “developed in the United States and … made in the United States,” the “result [is] a ‘value added’ ratio of nearly 100%.” Certain Wearable Monitoring Devices, Inv. No. 337-TA-1190, Order No. 34 at 31 (Oct. 1, 2020), affirmed, Comm’n Op. at 39 (May 5, 2021).

e) The ’570 patent

RAB does not appear to dispute that Cree has satisfied the economic prong with respect to the ’570 patent.

(1) Plant and Equipment

With respect to plant and equipment, Cree has shown undisputed evidence that it has invested RAB in plant and equipment attributable to products that practice the ’570 patent claims.

RAB argues the significance of Cree’s investments should be discounted because Cree has failed to show a “relationship” between its domestic activities and the “asserted patents.” See RRB at 50-51. “The Commission has not required complainants to show exploitation of the patented technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).” Certain Solid State Storage Drives, Inv. No. 337-TA-1097, Comm’n Op. at 13 (June 29, 2018).
The correct question is whether the investments are “sufficiently ‘related to’ the domestic industry
products.” Id. at 13-14 (emphasis added). RAB has stipulated that the domestic industry products
to which these expenses relate practice the asserted patents. See JX-0169C.0003-0006.

I find that Cree’s investment in plant and equipment attributable to the ’570 patent domestic industry products is quantitatively significant. I additionally find that the expenditures are qualitatively significant because production of the ’570 domestic industry products represent of the total production of the Racine facility, see Tr. at 183:11-184:14 (Bakewell); CDX-004C.0031; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C, and of the total plant-wide cost. See CDX-004C.0033; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C. I additionally note that products practicing the ’570 patent represented of Cree’s total domestic sales, demonstrating commercial success of the products and thus the significance of investment in the products. Tr. at 173:13-174:16, 174:17-175:2; 176:5-24 (Bakewell); CDX-0004C.0027; see Certain High-Density Fiber Optic Equip. & Components Theroef, Inv. No. 337-TA-1194, Initial Determination, Initial Determination at 408 (Mar. 23, 2021) (Mar. 23, 2021) (investments “responsible for the development and support of … products that have been extremely successful in the market . . . are significant and substantial”), affirmed in relevant part, 86 FR 43564 (August 9, 2021).

(2) Labor and Capital

With respect to labor and capital, Cree has shown undisputed evidence that it has invested in labor and capital attributable to products that practice the ’570 patent.

RAB argues the significance of Cree’s investments should be discounted because Cree has failed to show a “relationship” between its domestic activities and the “asserted patents.” See RRB at 52-53. “The Commission has not required complainants to show exploitation of the patented
technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).”

Certain Solid State Storage Drives, Inv. No. 337-TA-1097, Comm’n Op. at 13 (June 29, 2018). The correct question is whether the investments are “sufficiently ‘related to’ the domestic industry products.” Id. at 13-14 (emphasis added). RAB has stipulated that the domestic industry products to which these expenses relate practice the asserted patents. See JX-0169C.0003-0006.

I find that Cree’s investment in labor and capital attributable to the ’570 patent domestic industry products is quantitatively significant. I additionally find that the expenditures are qualitatively significant because production of the ’570 domestic industry products represent of the total production of the Racine facility, see Tr. at 183:11-184:14 (Bakewell); CDX-004C.0031; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C, and of the total plant-wide cost. See CDX-004C.0033; JPX-0037C; JPX-0117C; JPX-0118C; JPX-0119C. I additionally find this investment is significant because the ’570 patent domestic industry products are developed, designed, and manufactured in the United States. See Tr. at 93:7-17, 112:5-10 (Wilcox). When products are both “developed in the United States and … made in the United States,” the “result [is] a ‘value added’ ratio of nearly 100%.” Certain Wearable Monitoring Devices, Inv. No. 337-TA-1190, Order No. 34 at 31 (Oct. 1, 2020), affirmed, Comm’n Op. at 39 (May 5, 2021).

(3) Research and Development

As addressed above, Cree relies on its investments in labor and capital for research and development to satisfy sub-prong (C) as well. See supra part IX.B.2.f).

“If a product practices (i.e., exploits) the patented technology then naturally any investments in said product also promote the exploitation of the patented technology” and can also be considered under sub-prong (C). Certain Electronic Digital Media Devices and Components
Thereof, Inv. No. 337-TA-796, Initial Determination at 454 (Sept. 14, 2012). RAB’s arguments that Cree has not shown the required nexus are meritless for the reasons addressed above. See supra part IX.B.3.

Here, Cree has presented evidence of a §§ investment in research and development related to the ’570 patent. See CDX-00004C.0020. This represents nearly half of Cree’s labor and capital domestic industry expenditures related to the ’270 patent, the total of which I found significant. See supra part IX.B.4.e)(2). I find that Cree’s research and development investment is substantial both quantitatively and qualitatively.

I additionally find this investment is substantial because all of the alleged ’570 patent domestic industry products are developed, designed, and manufactured in the United States. See Tr. at 93:7-17, 112:5-10 (Wilcox). When products are both “developed in the United States and … made in the United States,” the “result [is] a ‘value added’ ratio of nearly 100%.” Certain Wearable Monitoring Devices, Inv. No. 337-TA-1190, Order No. 34 at 31 (Oct. 1, 2020), affirmed, Comm’n Op. at 39 (May 5, 2021).

C. Domestic Industry Conclusions

The technical prong of the domestic industry requirement has not been satisfied with respect to the ’531, ’819, and ’449 patents.

The technical prong of the domestic industry requirement has been satisfied with respect to the ’270 and ’570 patents.

The economic prong of the domestic industry requirement has been satisfied with respect to the ’531, ’819, ’270, and ’570 patents.

The economic prong of the domestic industry requirement has not been satisfied with respect to the ’449 patent.
X. CONCLUSIONS OF LAW

1. The Commission has subject matter, personal, and in rem jurisdiction in this investigation.

2. The importation requirement has been satisfied.

3. Claims 1, 10-12, 25, and 26 of the ’531 patent have been infringed.


5. Claim 10 of the ’449 patent has not been infringed.

6. Claims 1 and 2 of the ’270 patent have been infringed.

7. Claims 1, 3-5, and 10 of the ’570 patent have been infringed.

8. The technical prong of the domestic industry requirement would be satisfied with respect to the ’531 and ’819 patents if the claims of those patents were valid but has not been satisfied because the claims are invalid.

9. The technical prong of the domestic industry requirement has not been satisfied with respect to the ’449 patent.

10. The technical prong of the domestic industry requirement has been satisfied with respect to the ’270 and ’570 patents.

11. The economic prong of the domestic industry requirement has been satisfied with respect to the ’531, ’819, ’270, and ’570 patents.

12. The economic prong of the domestic industry requirement has not been satisfied with respect to the ’449 patent.

13. Claims 1, 10-12, 25, and 26 of the ’531 patent have been shown by clear and convincing evidence to be directed to ineligible subject matter under 35 U.S.C. § 101.
14. Claims 1, 10-12, 25, and 26 of the ‘531 patent have been shown invalid by clear and convincing evidence as lacking enablement and written description under 35 U.S.C. § 112.

15. Claims 1, 10-12, 25, and 26 of the ‘531 patent have not been shown invalid as anticipated by the prior art under 35 U.S.C. § 102(b).

16. Claims 1, 10-12, 25, and 26 of the ‘531 patent have not been shown invalid as obvious in view of the prior art under 35 U.S.C. § 103.

17. Claims 1, 24-27, 29, 48-50, 52, 57-59, 60, and 65-67 of the ‘819 patent have been shown by clear and convincing evidence to be directed to ineligible subject matter under 35 U.S.C. § 101.

18. Claims 1, 24-27, 29, 48-50, 52, 57-59, 60, and 65-67 of the ‘819 patent have been shown invalid by clear and convincing evidence as lacking enablement and written description under 35 U.S.C. § 112.


21. Claim 10 of the ‘449 patent has been shown invalid by clear and convincing evidence as lacking enablement under 35 U.S.C. § 112.

22. Claims 1 and 2 of the ‘270 patent have not been shown invalid as anticipated by the prior art under 35 U.S.C. § 102(b).

23. Claims 1, 3-5, and 10 of the ‘570 patent have not been shown invalid as indefinite under 35 U.S.C. § 112.
XI. RECOMMENDED DETERMINATION ON REMEDY AND BOND

The Commission’s Rules provide that the administrative law judge shall issue a recommended determination concerning the appropriate remedy in the event that the Commission finds a violation of section 337 and concerning the amount of bond to be posted by respondents during Presidential review of the Commission action under section 337(j). See 19 C.F.R. § 210.42(a)(l)(ii).

A. Limited Exclusion Order

The Commission has broad discretion in selecting the form, scope, and extent of the remedy in a section 337 proceeding. Viscofan, S.A. v. U.S. Int’l Trade Comm’n, 787 F.2d 544, 548 (Fed. Cir. 1986). A limited exclusion order directed to a respondent’s infringing products is among the remedies that the Commission may impose. See 19 U.S.C. § 1337(d).

Because I have determined that there has been a violation of section 337, I recommend the commission issue a limited exclusion order as to RAB products that infringe the ’270 and ’570 patents.

RAB contends the limited exclusion order should “grandfather products that have been or will be imported before the target date in order to mitigate the adverse effects on the environment and third parties using RAB’s products or who ordered RAB’s products before entry of an exclusion order,” relying on Certain Baseband Processor Chips and Chipsets, Inv. No. 337-TA-543, Comm’n Op (June 7, 2007). RRB at 54. RAB further contends that any limited exclusion order should exempt “replacement/refurbished parts and devices” to “comport with RAB’s existing warranty, service, repair, and replacement requirements” and to “mitigate unnecessary harm to consumers that already own a RAB product.” RRB at 55.
But RAB has put forward no analysis or explanation as to why the facts here are analogous to *Baseband Processor Chips*, which involved consideration of significant public interest factors not delegated to my consideration in this investigation. And RAB has not submitted any evidence that supports its request to exempt imports for replacements, refurbished products, warranties, or repairs. There is no evidence that RAB has ever imported products to replace, refurbish, or repair a product. RAB also has not identified any importation made to fulfill a warranty obligation. And RAB’s warranty terms make clear that a carve out is not necessary for it to fulfill its warranty obligations; RAB can fulfill those obligations by offering a refund or reimbursement. JX-0122 (Barna Dep.) 169:4-170:20; JX-0061. I do not recommend the commission include any carve-outs in any limited exclusion order it issues.

RAB further requests any limited exclusion order include a certification provision, and Cree does not appear to oppose that request. *See RRB* at 55. The Commission has included certification provisions where complicated and costly reverse engineering procedures are required for Customs to determine whether imported merchandise is covered by the patent claims at issue, or where respondents “import both infringing and non-infringing products.” *See, e.g., Certain Dental Implants*, Inv. No. 337-TA-934, Comm’n Op. at 48 (May 11, 2016). Given the number of SKUs RAB imports and the difficulty in ascertaining infringement of many of them, I recommend that any limited exclusion order should include a certification provision.

**B. Cease and Desist Order**

Section 337 provides that in addition to, or in lieu of, the issuance of an exclusion order, the Commission may issue a cease and desist order as a remedy for a violation of section 337. 19 U.S.C. § 1337(f)(1). The Commission may issue a cease and desist order when it has personal
jurisdiction over the party against whom the order is directed. *Gamut Trading Co. v. U.S. Int’l Trade Comm’n*, 200 F.3d 775, 784 (Fed. Cir. 1999).

Under Commission precedent, “[c]ease and desist orders are generally issued when, with respect to the imported infringing products, respondents maintain commercially significant inventories in the United States or have significant domestic operations that could undercut the remedy provided by an exclusion order.” *Certain Air Mattress Systems, Components Thereof, and Methods of Using the Same*, Inv. No. 337-TA-971, Comm’n Op. at 49 (May 17, 2017) (citations and footnote omitted).

As of July 15, 2020, RAB maintained a domestic inventory of [redacted] units that cumulatively cost [redacted]. CX-0016C. RAB stipulated that this is “a commercially significant inventory.” CX-0016C.0004.

Accordingly, I recommend the Commission order RAB to cease and desist domestic sale and distribution of the infringing accused products. The cease and desist order should not include any carve outs or exceptions for the same reasons discussed above concerning the limited exclusion order. *See supra* part XI.A.

C. **Bond During Presidential Review**

Pursuant to section 337(j)(3), the administrative law judge and the Commission must determine the amount of bond to be required of a respondent during the 60-day Presidential review period following the issuance of permanent relief. The purpose of the bond is to protect the complainant from any injury. 19 U.S.C. § 1337(j)(3); 19 C.F.R. §§ 210.42(a)(1)(ii), 210.50(a)(3).

When reliable price information is available, the Commission has often set the bond by eliminating the differential in sales prices between the domestic product and the imported, infringing product. *Certain Microsphere Adhesives, Process for Making Same, and Products*
Containing Same, Including Self-Stick Repositionable Notes, Inv. No. 337-TA-366, Comm’n Op. at 24, USITC Pub. No. 2949 (1995). In other cases, the Commission has turned to alternative approaches, especially when the level of a reasonable royalty rate could be ascertained. See Certain Integrated Circuit Telecommunication Chips and Products Containing Same, Including Dialing Apparatus, Inv. No. 337-TA-337, Comm’n Op. at 41–43, USITC Pub. No. 2670 (1995). A 100% bond has been required when no effective alternative existed. Certain Flash Memory Circuits and Products Containing Same, Inv. No. 337-TA-382, USITC Pub. No. 3046, Comm’n Op. at 26–27 (July 1997) (a 100% bond imposed when price comparison was not practical because the parties sold products at different levels of commerce, and the proposed royalty rate appeared to be de minimis and without adequate support in the record).

Cree contends that a price comparison is impracticable because of the huge number of different SKUs each party offers. See CIB at 119 (citing Certain Microsphere Adhesives, Inv. No. 337-TA-366, Comm’n Op. at 24-25 (Jan. 16, 1996)); Tr. at 82:3-82:21 (Wilcox) (“[T]here’s usually … ranging from a few dozen to sometimes thousands or tens of thousands of particular variations of the product.”); JPX-0117C (SKUs for Cree’s Domestic Industry Products); CX-0474C (SKUs for RAB’s Accused Products). Instead, Cree suggests use of a reasonable royalty rate to calculate bond, noting that Cree has “actual license agreements entered into by the patent holder with respect to the patents-in-suit.” See Certain Mobile Devices, Associated Software, and Components Thereof, 337-TA-744, Comm’n Op. at 33-34 (Jun. 5, 2012) (EDIS Doc. ID 482094). Cree points in particular to its license with Feit Electric, which settled litigations in which the same ’819 patent that is at issue here was asserted. Tr. at 106:2-107:25 (Wilcox); CX-0352C.0001-0002. In the settlement, Feit Electric agreed to pay

[Redacted]. CX-0352C.0011-0012. As
Mr. Barna asserted, the products accused in this investigation are LED fixtures that are sold through commercial channels. Tr. at 587:21-588:5 (Barna); see also CX-0353C.0002-0004 (defining “fixture” and “commercial channel”).

RAB responds that Cree has failed to establish the appropriateness of a 5% bond. The record shows that Cree has licensed its patents to six other entities, described in eight license agreements. See CX-342C; CX-343C; CX-345C; CX-352C; CX 353C; CX-353C; CX-0110C; CX-0111C; CX-1887C. Seven of these agreements include royalty rates of [redacted]. See, e.g., CX-0111C; CX-342C; CX-343C; CX-345C; CX-352C; CX 353C; CX-1887C. One agreement has a [redacted] royalty rate (CX-0110C), and two others (including the Feit license) detail a [redacted] (CX-352C; CX-353C). RAB does not explain why the [redacted], is not appropriate here.

The bond is to protect the complainant from any injury. 19 U.S.C. § 1337(j)(3). I find, based on the evidence of prior royalty rates, a 5% bond will protect Cree. I therefore recommend imposition of a 5% bond for importation of infringing articles during the Presidential review period.

XII. INITIAL DETERMINATION ON VIOLATION

For the reasons set forth herein, it is my initial determination that a violation of section 337 of the Tariff Act, as amended, has occurred in the importation into the United States and the sale within the United States after importation of certain light-emitting diode products, fixtures, and components thereof based on infringement of U.S. Patent No. 9,261,270 and U.S. Patent No. 9,476,570.
I hereby certify to the Commission this initial determination and the recommended determination.

The Secretary shall serve the confidential version of this initial determination upon counsel who are signatories to the Protective Order (Order No. 1) issued in this investigation. A public version will be served at a later date upon all parties of record.

Pursuant to 19 C.F.R. § 210.42(h), this initial determination shall become the determination of the Commission unless a party files a petition for review pursuant to 19 C.F.R. § 210.43(a) or the Commission, pursuant to 19 C.F.R. § 210.44, orders on its own motion a review of the initial determination or certain issues therein.

XIII. ORDER

Within seven days of the date of this document, the parties shall jointly submit a single proposed public version with any proposed redactions indicated in red. If the parties submit excessive redactions, they may be required to provide declarations from individuals with personal knowledge, justifying each proposed redaction and specifically explaining why the information sought to be redacted meets the definition for confidential business information set forth in 19 C.F.R. § 201.6(a). To the extent possible, the proposed redactions should be made electronically, in a single PDF file using the “Redact Tool” within Adobe Acrobat. The proposed redactions should be submitted as “marked” but not yet “applied.” The proposed redactions should be submitted via email to Cheney337@usitc.gov and not filed on EDIS.

SO ORDERED.

Clark S. Cheney
Administrative Law Judge