TM

CXO

EXTREME COMFORT

Nightingale

The Most Comfortable Chair in the World. *Period*.

CXO™

The Nightingale CXO™ chair offers strong lumbar support, responsive ergonomic technology, plus the breathability and flexibility of the Ablex™ patterned mesh back.

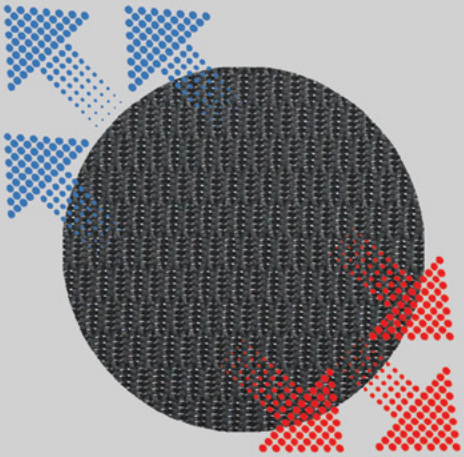
Some of the best minds helped us combine proven ergonomic support with the latest state-of-the-art materials. The end result exceeded even our expectation of comfort.

Available in several models, all standard with proprietary, circulation improving, extreme comfort ENERSORB™ foam and a wide range of option combinations.

EXPERIENCI
IS BELIEVING

Uniting human centered design with Nightingale's leadership in innovative technology and materials, the CXO™ became widely heralded as the most comfortable chair in the world.

The CXO™ takes ergonomic seating technology and functionality and comfort to the next plateau. Overall the CXO™ creates the perfect experience of comfort with it's sleek lines and striking pose, Nightingale has generated a seating system you'll love to sit in as much as to look at.

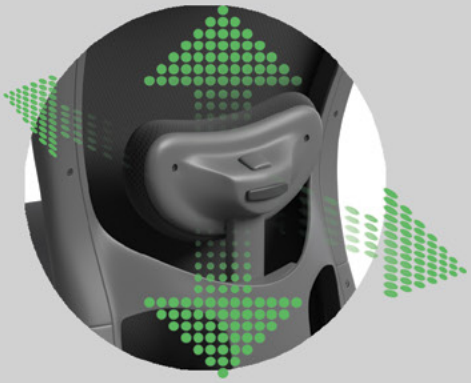


Ablex™ Mesh

With Ablex™ mesh your back can breathe easy. Ablex™ allows air to pass through and keep you cool, while supplying superior comfort.

Enersorb™ Foam

At the core of the CXO's™ extreme comfort is Enersorb™ memory foam. Created using a proprietary silicone formula to stay cool and exponentially extend the foams strength and comfort. Enersorb™ is standard on the seat, lumbar and optional adjustable headrest.



4D Lumbar Thoracic Support

The contoured lumbar + thoracic support pad with Enersorb™ foam can be adjusted up and down and in and out for personalized support and comfort.

CXOhd™ Heavy Duty
Up to 450lbs

CXOhd™ may look like a normal chair, but it certainly is not built like one. CXOhd™ features select enhancements such as heavy gas lift, 3" dual wheel carpet casters, steel arm support plates and an extra large steel seat plate that supports users up to 450lbs.

STEEL REINFORCED ARM PLATES
Cold rolled steel plates inside the arm pad end to end.

STEEL REINFORCED SEAT PAN
Extra large cold rolled steel reinforced seat plate to handle 450lbs.

HEAVY DUTY GAS LIFT
Double sealed class 4 gas lift heavy duty gas lift to handle weights up to 450lbs.

STEEL REINFORCED CHAIR BASE
Cold rolled steel reinforced chair base to can handle weight up to 450lbs.

HEAVY DUTY CASTER
Strong heavy duty 3" casters.

1 ADJUSTABLE HEADREST

Optional headrest with ENERSORB™ foam adjusts up/down and pivots backwards with an innovative coat hook built into it's design. Headrest is field installable.

2 MESH BACK

CXO's™ mesh back with ABLEX™ patterned weave provides generous lumbar support while allowing dynamic movement. Air flows freely through this breathable mesh for added comfort in any environment.

3 THORACIC / LUMBAR SUPPORT

The contoured thoracic lumbar support pad with ENERSORB™ foam can be easily adjusted up and down and in and out for personalized support and comfort.

4 ADJUSTABLE ARMRESTS

Spring-loaded, ball bearing ratcheting system operates the armrests. Armrests are height and width adjustable.

5 ENERSORB™

The CXO's™ energy absorbing, ENERSORB™ seat, lumbar and headrest foam disperses applied pressure evenly to reduce pressure points.

6 WATERFALL SEAT

Waterfall seat design that gently slopes away from the legs minimizing pressure on the thighs, promoting good posture.

7 SEAT SLIDER

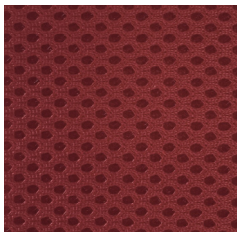
The CXO™ features an integrated seat slider for seat depth adjustment.

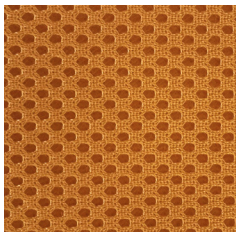
8 MECHANISM

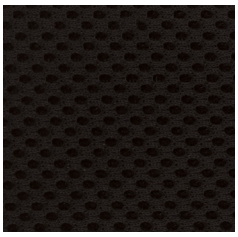
Synchronous knee tilt mechanism with positive and back-lock release. Intuitive side tension control, multi position lock, pneumatic height adjustment and an integrated seat slider for depth adjustment.

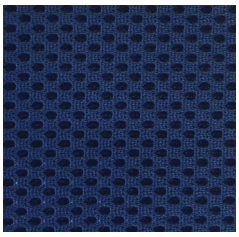
Textiles

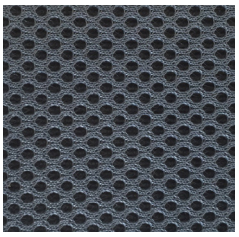
Stretch Collection | MYSTIC

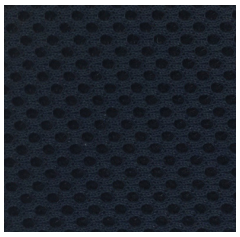

C3 BURGANDY

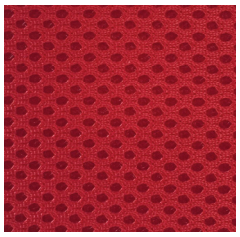

C5 GOLD


C1 BLACK


C4 BLUE


C2 GREY


C9 NAVY


C6 RED

Maximize Enersorb's cooling and egonomic benefits

Nightingales' Mystic Fabric is a 4 way stretch, breathable fabric that works in complete sync with ENERSORB™ Memory Foam.

Mystics' freedom of movement allows all of the amazing benefits and properties of our ENERSORB™ Memory Foam to be enjoyed. Mystic offers the user a truly unique sitting experience of total support and comfort.

Mystic has been abrasion tested over 100,000 double rubs.

Other fabric options available, including vinyl.

Specifications

MODEL 6200HD

OVERALL	
Width (Outer armrest to outer armrest) **Depth** (Front seat to back of back rest) **Height** (Floor to top of back rest)	26”-29” 22”-24” 37.5”-42.5”
Seat Width	21”
Back Width	22”
Back Height (From compressed seat)	23”
Seat Height	17”-22”
Seat Depth	17”-20”
Arm Width (Inner arm pad to inner arm pad)	17”-20.5”
Arm Height (Compressed to seat to top of armrset)	7”-11.5”

MODEL 6200DHD

OVERALL	
Width (Outer armrest to outer armrest) **Depth** (Front seat to back of back rest) **Height** (Floor to top of back rest)	26”-29” 22”-24” 46"-52"
Seat Width	21”
Back Width	22”
Back Height (From compressed seat)	30"-32"
Seat Height	17”-22”
Seat Depth	17”-20”
Arm Width (Inner arm pad to inner arm pad)	17”-20.5”
Arm Height (Compressed to seat to top of armrset)	7”-11.5”

ISO 14001 & ISO 9001 CERTIFIED
TB117-2013 COMPLIANT

Made in a 100% waste free manufacturing facility.

DIMENSIONS DISCLAIMER

Dimensions are subject to change without notice.
Dimensions may have a variance of up to 0.5".
Contact your Nightingale if more precise measurements are needed.

TEXTILE DISCLAIMER

Nightingale only upholsters with top quality materials.

Nightingale recommends ordering product samples at www.nightingalechairs.com/textiles before final purchase to get a more accurate representation of color. However, due to slight variations in dye lots, there can be slight color variations to received product.

Nightingale has made every effort to represent the colors and textures of these textiles, vinyls and leathers as accurately as possible. However, we cannot guarantee 100% accuracy, due to variations that occur in the printing process.

Nightingale

Tel Toll Free: 1 (800) 363-8954
Fax Toll Free: 1 (800) 637-6784
info@nightingalechairs.com
nightingalechairs.com

6200hd

The most comfortable chair in the world engineered for those requiring greater strength and durability for weight demands up to 450lbs.

STANDARD FEATURES

- ABLEX™ patterned weave mesh back provides generous lumbar support while allowing dynamic back movement.
- Easy to use, adjustable arms with lockable, finger-tip vertical and horizontal movements for individual comfort.
- Vertical and horizontal lumbar adjustment.
- Synchronous knee-tilt swivel mechanism (6200Dhd, 6200hd) with built-in seat slide depth adjuster, infinite position tilt-lock, pneumatic seat height adjustment and side tension control.
- Super soft, elongated polyurethane arm pads to help prevent Carpal Tunnel Syndrome.
- Headrest pivots in / out and adjusts up down on a contoured axis. Includes built in coat hook. (6200D).
- Energy absorbing dual density ENERSORB™ seat foam reduces sitting fatigue.
- Contoured seat foam incorporates a “waterfall” design that gently slopes away from the legs, minimizing pressure on the thighs, promoting good posture.
- Contoured seat and back shell for ergonomic support.
- 5 prong die-cast aluminum base.
- Breathable 4 way stretch-knit fabric on seat, lumbar and headrest for improved air circulation.
- Intuitive easy grip side tension adjustment.
- 3” carpet casters.
- Black mesh with graphite frame, arms, base and trim.
- Heavy duty class 4 gas lift.
- ANSI/BIFMA approved and TB117-2013 compliant.

GENERAL INFORMATION

- Upholstery - 2yds/chair.

RATED FOR 450lbs

CXO 6200Dhd-CH-TC3

CXO 6200Dhd-TC3

MODEL	DESCRIPTION						
GRADE		***1 Mystic***	***3 BeeHave***	***5 Moguls***	***7 Meridan***	***Madras Leather***	***Princess Leather***
6200hd	Mid Back Heavy Duty	734.50	744.25	749.13	781.63	781.63	797.88
6200Dhd	Mid Back Heavy Duty with Headrest	768.63	778.38	783.25	815.75	815.75	832

6200hd

6200Dhd

OPTIONS			
Description	***Suffix***	***Models***	***Upcharge***
3” Hard Surface Casters	TC3	All Models	34.13
Polished Aluminum Base	CH	All Models	16.25
Silver Mesh Back	SM	All Models	17.88
Armless	07	All Models	-26
Original Style Headrest	OS	6200Dhd	0

LIFETIME LIMITED WARRANTY

The Lifetime Limited Warranty applies only for **NIGHTINGALE** products listed herein, and manufactured after January 1st, 2018, and applies to products delivered to customers in Canada and the United States of America.

Under the **NIGHTINGALE** Warranty, all claims must be made within the time period specified herein.

This Warranty begins with the date of purchase from the Nightingale Dealer by the original purchaser, and applies as follows:

- Lifetime Limited: all non-moving metal parts.
- 10 Years: Control mechanisms, casters, pneumatic cylinders, self-skinned urethane parts, and plastic shells.
- 5 Years: Upholsteries.

The NIGHTINGALE Warranty is based on normal use within a normal commercial office setting of single shift, eight (8) hours per day, five (5) days per week, by individuals of 275 lbs or less.

Some natural variations occurring in wood, leather, or other natural materials are inherent to their character and are not considered defects. Nightingale Corp. does not warrant the colorfastness or matching of colors, grains, or textures of these materials. Additionally, a Customer's Own Material (COM) selected by, and used at the request of, a customer, is not warranted.

The Warranty does not apply to:

- Normal wear and tear over the course of ownership.
- Damage caused by abuse, misuse, accident, or negligence.
- Abnormal use or use within extreme climatic conditions. Normal climatic condition is defined as the temperature and moisture content range for human comfort and health.
- Alterations to or modifications of the product not approved by Nightingale Corp.
- Products not installed, used, or maintained in accordance with product instructions and warnings.
- Products used for rental purposes; and,
- Damage caused by the carrier-in-transit, which is handled under separate terms.

Compliance with applicable laws, regular codes, certificates, and manufacturing standards are disclaimed if this product is misused, improperly installed, or modified in any respect (including without limitation, any change in fabric or mechanical components affecting stability, load capacity, or load distribution) after shipment from Nightingale Corp.

The NIGHTINGALE Warranty does not cover the cost of transportation or labor, except as noted.

All Warranty claims must be submitted by the Nightingale Dealer that sold the product.

Nightingale Corp. reserves the exclusive and sole right to determine whether a **NIGHTINGALE** seating product is defective in material or workmanship.

In order for Nightingale Corp. to determine whether the Warranty applies, the following information must be supplied to Nightingale Customer Care:

- Original Purchase Order and Purchase Order Date.
- Nightingale Corp. Invoice Number and Invoice Date.
- Product Model Number.
- Reason for claim.
- Please note that Nightingale Corp. may also require that photographs be supplied, clearly depicting the defective part or product. Nightingale reserves the right to deny any Warranty claim that does not include photographs when requested.

Should a Warranty claim be approved by Nightingale, then Nightingale will issue a Warranty Ticket Number to that claim. Nightingale Corp. will then, at its exclusive and sole discretion, apply one of the following remedies:

1. Issue replacement parts only, at no charge and prepaid freight. The cost of transportation and labor is not covered.

   or

2. On a **discretionary basis**, Nightingale may determine that replacement parts and more significant labor may be required. Nightingale may authorize the Dealer to carry out the repair either directly or via a bona fide third party approved by Nightingale. All Warranty claims are evaluated on a case by case basis. The following conditions apply:

- No service work can be performed without prior written approval by an authorized Nightingale Corp. employee.
- The Warranty policy does not apply to Damage Claims, which are processed separately. Please refer to the Terms and Conditions outlined in the current **NIGHTINGALE** price book, regarding Freight Damage.
- Nightingale Corp. will only deal with the Dealer directly. Nightingale will not deal with any third party or end user.

- In order for approval to be given, the Dealer must submit a pro-forma invoice or quotation, based on the average hourly labor rate assigned by Nightingale Corp., as stated below. Once approved, an authorized Nightingale employee will provide written consent to proceed.
- The Warranty Ticket Number issued upon approval must be indicated on the pro-forma invoice or quotation.
- If the Dealer chooses to outsource service work to a bona fide third party, then the Dealer must provide a bona-fide invoice or quotation from the third party.
- For the purposes of the Warranty, Nightingale Corp. has assigned an average hourly wage rate of $20/hr based on data provided by the Bureau of Labor Statistics (BLS) in the United States, and Statistics Canada (StatsCan) in Canada. Nightingale Corp. will not apply any amount greater than this. Nightingale Corp. reserves the right to adjust the rate without notice.
- Transportation time for only one employee will be reimbursed unless it is necessary for more than one service technician to perform the service. Transportation costs must be supplied with the pro-forma invoice or quotation. Nightingale Corp. reserves the right to decline submissions for transportation costs, if they are not within reason. Feedback will be provided with any declined submissions so that the request can be re-adjusted and re-submitted.
- All replacement parts will ship with an assigned Nightingale Acknowledgement Number.
- After service work is performed, the Dealer must submit an invoice. The assigned Warranty Ticket Number and the Acknowledgement Number for the replacement parts must be included on the invoice. Nightingale Corp. will not reimburse any amount greater than the amount provided in the pro-forma invoice or quotation.
- Nightingale Corp. will not reimburse for any service work performed on **NIGHTINGALE** product without prior written consent from Nightingale.

Over and above the description of the claim and any photographs supplied, Nightingale Corp may require that the defective part be returned collect. Nightingale reserves the right to charge for a replacement part, if a defective part is determined to not be covered under Warranty.

Warranty Exception:

- 247-HD, and Sherman (except HD9000DS which is rated to 350lbs only) is warranted for multiple shifts and users up to 500 lbs. (24-7HD) and 450 lbs. (sherman). Multiple shifts is defined as three (3) shifts, twenty-four (24) hours per day, seven (7) days per week.
- Weight capacity for all task seating only (Legacy, Ergo-Learn, Ultima II, Bless, Frio, EC1, EC2, EC3, EC5, EC6, WXO, EXO, LXO, Bradley, Veronna, VXO, IC2, Dany) is increased to 300lbs.
- Weight capacity for CXO and SXO series is increased to 350lbs.
- CXO-TI ("Task Intensive") and HD6800D is warranted for multiple shifts and users up to 350 lbs.
- CXO-HD is warranted for single shifts and users up to 500 lbs.
- Overtime is warranted for multiple shifts and users up to 300 lbs. Multiple shifts is defined as three (3) shifts, twenty-four (24) hours per day, seven (7) days per week.
- Nightingale Corp. warrants that the Nightingale products listed above are covered under the Nightingale General Warranty, as stated above. Due to the special application of these products, the following specific Warranty applies:

<u>The Following Warranty Exception applies to 24hr Rated Items Only</u>

- Lifetime: all non-moving metal components.
- 5 years: Heavy-duty control mechanisms, casters, pneumatic cylinders, self-skinned urethane parts, and plastic shells.
- 2 year: Upholsteries.

Nightingale Corp. offers no other warranty, either expressed or implied, including any warranty of merchantability or fitness for a particular purpose. Nightingale Corp. shall not be liable for consequential or incidental damages arising from any product defect.

Nightingale and Environmental Sustainability
CXO™ Chair

Nightingale

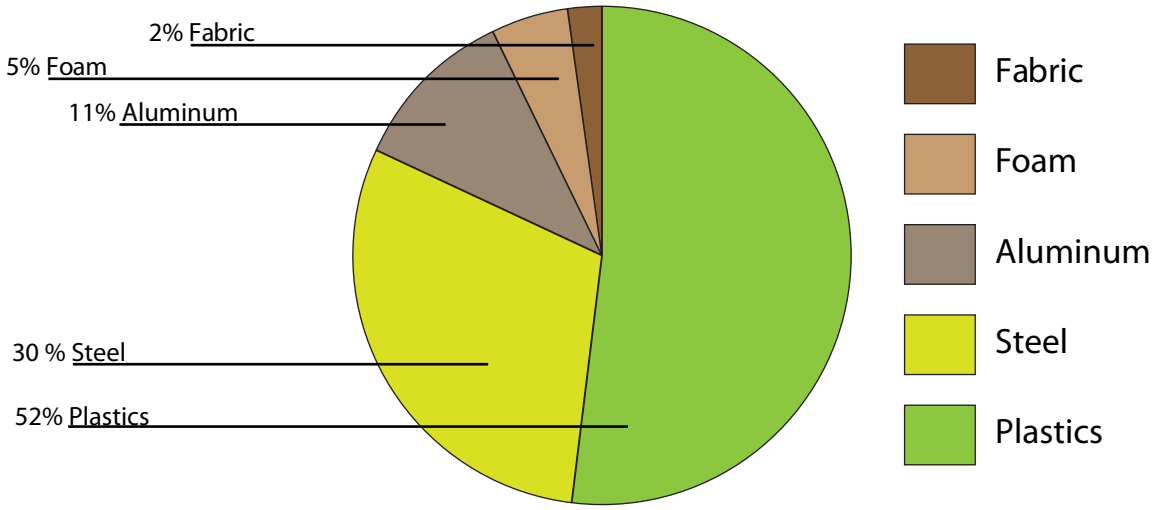
GREENGUARD®
Indoor Air Quality Certified

info@nightingalechairs.com | www.nightingalechairs.com | 1.800.363.8954

Environmental Product Summary

CXO™ CHAIR

MATERIAL CONTENT:



Nightingale's Environmental Story:
Our future goal is to produce sustainable seating. Planet Nightingale is our environmental initiative. Our commitment to the environment is expressed in a variety of ways - from making smart choices when it comes to choosing materials and processes, to designing products that are simple, flexible, and durable.
It's all about doing more with less.

Nightingale is proud to have developed and promoted an environmental policy long before government instituted mandatory recycling.
We are committed to manufacturing our products utilizing methods and materials that help to reduce the adverse impact on our environment.

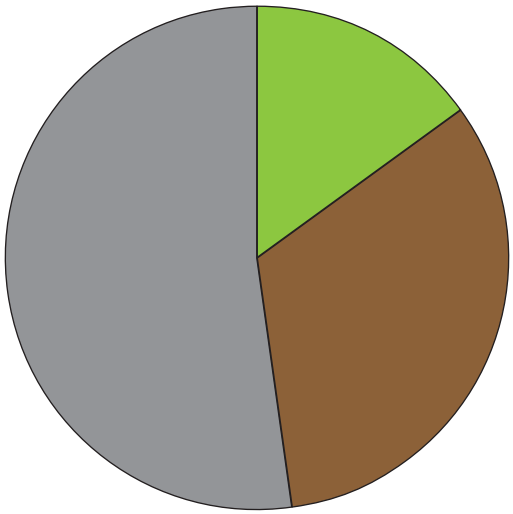
The basic elements of our plan are to use others' waste (recycled materials) or sustainable sources of raw materials to create our products, to ensure that our products are fully recyclable, to use as few resources as possible in the manufacturing process, and to ensure that we minimize or eliminate waste and emissions.

Nightingale's Environmental Design Protocol:
There's only one way to behave in this world: RESPONSIBLY. As we constantly improve and streamline our processes, we look for and take every opportunity to reduce, reuse, and recycle. To ensure that our operations have little to no negative impact on the environment, Nightingale engages in the following activities:

- We manufacture plastic and metal components that contain recycled materials.
- We use non-toxic, epoxy powder coat paints virtually free of all volatile organic compounds (VOCs) and ozone depleting substances (ODSs).
- All foam and urethane components used are manufactured without the use of CFC or HCFC blowing agents to help prevent further depletion of the Earth's ozone layer. Through improved quality control of raw materials and improved efficiency in the molding process, our foam waste has been virtually eliminated.
- The metal components in our products are die-cast aluminum or steel, both of which are 100% recyclable.
- Nightingale offers variety of fabric lines that have 100% recycled content.
- Wood suppliers in the US, Canada, and Europe are responsible partners in compliance with guidelines from the FSC, (Forest Stewardship Council), and its European counterpart, the PEFC.

Environmental Product Summary

CXO CHAIR



33% PRE-CONSUMER RECYCLED CONTENT

15% POST-CONSUMER RECYCLED CONTENT

OTHER

Manufacturing Process:

- Nightingale has successfully minimized waste material generated during the manufacturing process by adhering to and enforcing our ISO 9002-1994 Quality Management Procedures both within our manufacturing facility and at our sub-contractors. Any materials or components that do not meet our quality standards are returned to our subcontractors for re-work or replacement.
- Nightingale initiated an extensive renovation program to our manufacturing facility that dramatically reduced our energy consumption and improved the health and safety within our building. Our power consumption needs were reduced by more than 30% by installing a completely new energy-efficient lighting and fan system throughout our entire manufacturing, warehousing, shipping and receiving areas.
- Nightingale takes great pride in manufacturing quality products that are designed to provide a longer lifespan of use than the industry average, providing that the end user takes reasonable care of the product. We believe that developing and manufacturing products that have an extensive life span reduces the frequency of products going to landfill after only a short period of use (ie. Imported off-shore seating products have a very short life span).

Indoor Air Quality

- The CXO chair is GREENGUARD® certified as a low-emitting product that meets current indoor air quality standards.
- GREENGUARD® is recognized in LEED building rating systems
- Green Guide for Healthcare recognizes GREENGUARD®.
- All adhesives used by Nightingale are organic solvent-based that is biodegradable and utilized in glue spray booths that have ventilated filtration systems to ensure employee health and safety. All adhesive drums are recycled.
- It is our policy, where possible during our upholstery process, not to use glue. More and more, all newer designed chairs are moving away from glued upholstery production.

Product Performance

- Chairs produced by Nightingale can be disassembled with basic tools for recycling purposes.
- Most all non-structural plastic parts we use contain recyclable materials.
- Easy assembly for cost-efficiency and quick parts replacement.
- Designed for durability, an important

environmental criterion.

- Backed by Nightingale's Lifetime Limited Warranty: all non-moving metal parts.
  10 Years: Control mechanisms, casters, pneumatic cylinders, self-skinned urethane parts, and plastic shells.
  5 Years: Upholsteries.

Supplier Support

At Nightingale, we are committed to working closely with our suppliers to reduce our negative impact on our environment.

- Nightingale is a certified ISO 9001 approved company, and is in preparation stages of also being ISO 14001 certified. Nightingale and its suppliers apply every effort to be responsible partners in the protection of our environment.
- We also work very closely with our subcontractors to ensure that our products exceed government standards with regard to formaldehyde emissions. As a result, Nightingale is not required to affix warning labels to our products.

Our Packaging:

- We only purchase cardboard packaging that contains the highest possible post-consumer waste content (98% content).
- Nightingale only uses recyclable packaging materials such as corrugated boxes, cardboard fillers, paper carton tape, plastic bags and bubble wrap. The packaging contains 98% recycled paper content primarily sourced from post consumer waste.

Our Office Green Planet:

- Recycled materials are used in the daily administrative, promotional, and financial activities that occur as part of the daily operation of our business.
- We recycle all empty fax and printer ink cartridges.
- All leather waste is recycled.
- Any metal waste is recycled.

LEED:

CREDIT 2.1 - 2.2	Construction Waste Managment	1-2 point(s)
CREDIT 3.3	Resource Reuse	1 point(s)
CREDIT 4.0	Recycled Content	1 point(s)
CREDIT 4.2	Recycled Content	1 point(s)
CREDIT 4.5	Low Emitting Materials, Systems & Seating	1 point(s)

CERTIFICATE
OF COMPLIANCE

Nightingale Corporation

CXOhd

8404-420
Certificate Number

04/17/2008 - 04/17/2021
Certificate Period

Certified
Status

UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Commercial furniture and furnishings are tested in accordance with ANSI/BIFMA M7.1-2011(R2016) and determined to comply with ANSI/BIFMA X7.1-2011(R2016) and ANSI/BIFMA e3-2014e Credit 7.6.1, 7.6.2, and 7.6.3. Seating products are modeled in the seating environment with a ventilation rate of 24.8 m³/hour. Products also determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V1.2-2017.

Product tested in accordance with UL 2821 test method to show compliance to emission limits on UL 2818. Section 7.1 and 7.2.

Environment

GREENGUARD Gold Certification Criteria for Office Furniture Seating

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC (A)	-	0.22	mg/m³
Formaldehyde	50-00-0	4.5 (3.65 ppb)	µg/m³
Total Aldehydes (B)	-	0.043	ppm
4-Phenylcyclohexene	4994-16-5	6.5	µg/m³
1-Methyl-2-pyrrolidinone (C)	872-50-4	80	µg/m³
Individual VOCs (D)	-	1/4 CREL or 1/100th TLV	-

(A) Defined to be the total response of measured VOCs falling within the C_6 – C_{16} range, with responses calibrated to a toluene surrogate.

(B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.

(C) Based on the CA Prop 65 Maximum Allowable Dose Level for inhalation of 3,200 µg/day and an inhalation rate of 20 m^3/day.

(D) Allowabe levels for chemicals not listed are derived from the lower of 1/4 the California Office of Environmental Health Hazard Assessment (OEHHA) Chronic Reference Exposure Level (CREL) as required per the CDPH/EHLB/Standard Method v1.2 and BIFMA level credit 7.6.2 and 1/100th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).

Nightingale Testing Laboratory

Certificate #L2263

Customer: **Nightingale Corp.**

2301 Dixie Road,
Mississauga, ON
L4Y 1Z9

Test Report No.: **TR107** **Date: January 29, 2018**

The following Sample was submitted by the customer

Sample # and Description: TS1826, 1827, 1828 Chair CXO Model No. 6200

Date Received: October 6, 2017

Testing Period: November 15, 2017 to January 24, 2018

Test (s) Requested: ANSI/BIFMA X5.1-2017; "American National Standard for Office Furnishings – General Purpose Office Chairs – Tests"

Test Results: The submitted samples **comply with** ANSI/BIFMA X5.1-2017 tests referenced above.

Report Authorized By:

Jose Paiva
VP Operations

Test Performed By

Alvin Mohan
Technician

This report refers only to the particular samples, units, material, instrument, or other subject used and referred to in it, and is limited by the tests and/or analyses performed. Similar articles may not be of like quality, and other testing and/or analysis programs might be desirable and might give different results. This report shall not be reproduced, except in full, without the written approval of Nightingale Corp. testing laboratory.

Summary of Results

Sec.	Description	Results
2.1	Section 5 Backrest Strength Test – Static Type I & II	Passed
2.2	Section 6 Backrest Strength Test – Static Type III	Passed
2.3	Section 7 Drop Test – Dynamic	Passed
2.4	Section 8 Swivel Test – Cyclic	Passed
2.5	Section 9 Tilt Mechanism Test – Cyclic	Passed
2.6	Section 10 Seating Durability Test – Cyclic	Passed
2.7	Section 11 Stability Tests	Passed
2.8	Section 12 Arm Strength Test – Vertical – Static	Passed
2.9	Section 13 Arm Strength Test – Horizontal – Static	Passed
2.10	Section 14 Backrest Durability Test – Cyclic – Type I	Passed
2.11	Section 15 Backrest Durability Test Cyclic – Type II & III	Passed
2.12	Section 16 Caster/Chair Base Durability Test – Cyclic	Passed
2.13	Section 20 Arm Durability Test – Cyclic	Passed
2.14	Section 21 Out Stop Tests for Chairs with Manually Adjustable Seat Depth	Passed
2.15	Annex C Base Test – Static	Passed

1.0 Introduction

Nightingale Corp. submitted three chairs identified as the model no.6200 as presented in Figure 1 to *Nightingale Testing Laboratory* for testing in accordance with ANSI/BIFMA X5.1-2017.

Figure 1: Photograph of the chair in the as-received condition

2.0 Test Procedure and Results:

The complete detailed procedure may be found in the referenced specification and are only summarized in this test report. The results obtained for each of the tests are included in their respective section. The test methods and equipment are listed in each of the procedures below.

2.1 Section 5 Backrest Strength Test – Static Type I & II (Test Method 001 Revision 1)

Procedure:
The chair was placed in the test machine in its upright position in the unlocked position, and restrained it from movement without affecting the backrest or arms of the chair. All adjustable features were set at normal use conditions. This test does not apply to chairs with backrest height less than 200 mm (7.9 inches). The load cell was attached to the backrest and as per the specifications of the test method.

A functional load of **150 lbf** was applied 70 ± 10 degrees to the plane of the back and maintained for one minute. The load was released and the chair was inspected for serviceability.

A second force of **225 lbf** (proof load) was applied to the backrest and maintained for one minute. The load was released and the chair did not exhibit any sudden or major change structurally.

Equipment:
Test Machine # Lab-07
Carpenter Square NCC # 003
Measuring Tape NCC # 241
Load Cell NCC # 123
CMD NCC # 122
Wood Forms
Timer NCC # 009

Results:
There was no loss of serviceability and no structural breakage to the chair.

2.2 Section 6 Backrest Strength Test – Static Type III (Test Method 002 Revision 1)

Procedure:
The chair was placed in the test machine in its upright position in locked position, and restrained it from movement without affecting the backrest or arms of the chair. All adjustable features were set at normal use conditions, except for height adjustable pivoting backs, which have the pivot set at maximum height or 16 inches, whichever is less. This test does not apply to chairs with backrest height less than 200 mm (7.9 inches). The load cell was attached to the backrest and as per the specifications of the test method.

A functional load of **150 lbf** was applied 90 degrees to the plane of the back and maintained for one minute. The load was released and the chair was inspected for serviceability.

A second force of **225 lbf** (proof load) was applied to the backrest and maintained for one minute. The load was released and the chair did not exhibit any sudden or major change structurally.

Equipment:
Test Machine # Lab-07
Carpenter Square NCC # 003
Measuring Tape NCC # 241
Load Cell NCC # 123
CMD NCC # 122
Wood Forms
Timer NCC # 009

Results:
There was no loss of serviceability and no structural breakage to the chair.

2.3 Section 7 Drop Test – Dynamic (Test Method 003 Revision 1)

Procedure:
The chair was placed inside the test machine and the seat height was set to its highest position. A functional load test bag that is 16 inches in diameter weighing **225 lbs** was attached to a quick release mechanism and allowed to free-fall **6 inches** to the center of the seat. The bag was lifted off the chair and the chair was set to its lowest position where the functional load was repeated. For chairs with lockable seat angles, the seat was tested in the unlocked position.

The weight of the bag was increased to **300 lbs** (proof load) and the test was repeated at the highest and lowest position.

Equipment:
Test Machine # Lab-12
BIFMA Test Bags
25 lbs Test bags
6" aluminum bar NCC # 125
½" aluminum bar NCC # 126

Results:
There was no loss of serviceability and no structural breakage to the chair.

2.4 Section 8 Swivel Test – Cyclic (Test Method 004 Revision 1)

Procedure:
The chair was placed onto a rotating test platform where the seat and backrest were restrained from rotation. The seat height was set to its highest position and **270 lbs** were positioned on the seat such that its center of gravity was 2 to 2.5 inches forward of the spindle centerline.

The chair was rotated for 30,000 cycles at a rate of between 5 and 15 rotations per minute. Upon completion, the seat height was set to its lowest position and rotated for an additional 30,000 cycles.

Equipment:
Test Machine # Lab-08

Measuring Tape NCC # 241
Timer NCC # 009

Results:
There was no loss of serviceability

2.5 Section 9 Tilt Mechanism Test – Cyclic (Test Method 005 Revision 1)

Procedure:

The chair was restrained on the test platform with all adjustable features set at midpoint. A cycling device was attached at the back with a **240 lbs** weight placed at the center of the seat. The cycling device was set to move the mechanism between the front and rear stops without overriding either. The chair was cycled for 300,000 cycles at a rate of 10 to 30 cycles per minute.

Equipment:
Test Machine # Lab-05
Test Weights
Measuring Tape NCC # 241
Timer NCC # 009
Carpenter Square NCC # 003

Results:
There was no loss of serviceability

2.6 Section 10 Seating Durability Test – Cyclic (Test Methods 006 Revision 1 & 007 Revision 1)

Seat Impact Procedure:
The chair was restrained on the test platform with all adjustable features set at midpoint. A test bag that is 16 inches in diameter weighing **125 lbs** was attached to a cycling device, permitting free-fall to the center of the seat from a height of 1.4 inch above the uncompressed surface of the seat. The chair was subjected to 100,000 cycles at a rate of 10 to 30 cycles per minute.

Equipment:
Test Machine # Lab-02
BIFMA Test Bag
1.4 inch aluminum fixture NCC # 209
½" aluminum bar NCC # 126
Timer NCC # 009

Results:
There was no loss of serviceability

Front Corner Load Ease Procedure:

After completion of the seat impact test, a test bag that is 8 inches in diameter weighing **200 lbf** was applied to each front corner of the chair, flush to each structural edge. A cycling device was attached to the test bag and the loads were applied in an alternating sequence (right and left corners of the chair) for a total of 40,000 cycles at a rate of between 10 and 30 cycles per minute.

Equipment:
Test Machine # Lab-11
8" diameter ± 0.51" BIFMA Test Bag 200 lbs NCC # 267
Timer NCC # 009

Results:
There was no loss of serviceability

2.7 Section 11 Stability Tests (Test Method 008 Revision 1 & 009 Revision 1)

Rear Stability Procedure:
The chair was placed inside the chair measuring device station and all adjustable features were set to their least stable condition for rearward stability.

For chairs with tilt locks, locking the mechanism in the near upright position changes the chair type and the chair shall be tested in the locked (near upright) condition and in the unlocked (reclined) condition. A support fixture made of a 1.5 mm ± 0.4 mm (0.060 in. ± 0.015 in.) thick polypropylene, 356 mm (14 in.) wide and 711 mm (28 in.) tall was placed against the chair back so that it approximates the contour of the back.

For type III Chairs:
The chair was loaded with 6 stability disks as per the test method. For chairs with seat height less than 710 mm (28 inches), the force was calculated as per the test method and a horizontal force was applied to the highest disk at 6 mm (0.25 in.) from the top of the disk. For chairs with seat height equal to or greater than 710 mm (28.0 in.), a fixed force of 93 N (20.9 lbf.) was applied.

For type I & II Chairs:
The chair was loaded with 13 stability disks. If the chair does not tip over and the tilt mechanism does not tilt to its most rearward position (i.e., at its tilt stop) when the disks are placed in the chair, the chair shall also be tested with the chair in the unlocked position.

Equipment:
Chair Measuring Device Station
Force Gauge NCC # 131
Stability disks NCC # 85 to 103
Rear stability fixture NCC # 268
Polypropylene Support
Tape Measure NCC # 241
Square NCC # 003

Results:
The chair did not tip over.

Front Stability Procedure:
The same chair was tested for front stability, where a vertical load of 135 lbf was applied through a 7.87 inches disk, the center of which was 2.4 inches from the front center edge. A horizontal force of 4.5 lbf was applied at the same level of the plane of the top of the seat.

Equipment:
Chair Measuring Device Station
Stability Disk NCC # 128
Front Stability NCC # 061
Force Gauge NCC # 129
Adapter NCC # 116

Results:
The chair did not tip over as a result of the applied force.

2.8 Section 12 Arm Strength Test – Vertical – Static (Test Method 010 Revision 1)

Procedure:
The chair was restrained inside the test machine and all adjustable features were set at normal use conditions. A 5 inch long adapter was placed on the weakest point on the armrest and the load device was attached vertically.

A functional load of **169 lbf** was applied and maintained for 1 minute. The load was released and the arm was inspected for serviceability.

A proof load of **253 lbf** was applied and maintained for 15 seconds. The load was released and the arm did not exhibit any sudden or major change structurally.

Equipment:
Test Machine # Lab-07
Measuring Tape NCC # 241
Load Cell NCC # 123
Timer NCC # 009
Straps

Results:
No loss of serviceability and the arms did not hold its position applying the functional and did not drop more than 1 inch when applying the proof load.

2.9 Section 13 Arm Strength Test – Horizontal – Static (Test Method 011 Revision 1)

Procedure:
The chair was restrained inside the test machine and all adjustable features were set at normal use conditions. A loading device was attached to the weakest point of the arm through a strap that is 1 inch in width so that a horizontal load is applied in the outward direction.

A functional load of **100 lbf** was applied and maintained for 1 minute. The load was released and the arm was inspected for serviceability.

A proof load of**150 lbf** was applied and maintained for 15 seconds. The load was released and the arm did not exhibit any sudden or major change structurally.

Equipment:
Test Machine # Lab-07
Measuring Tape NCC # 241
Load Cell NCC # 123
Timer NCC # 009
Straps

Results:
There was no loss of serviceability and no structural breakage to the chair.

2.10 Section 14 Backrest Durability Test – Cyclic – Type I (Test Method 012 Revision 1)

Procedure:

The chair was restrained in position, all adjustable features were set to normal use conditions and a load of **240 lbs** is placed on the center of the seat.

A form fitting device was attached to the back at 16 inches above the seat. A cycling device with a load of **100 lbs** was applied to the backrest, through the form-fitting device, at 90^0 to the plane of the backrest when **locked** and at its backstop position.

For chairs with backrest width less than 16 inches the chair was cycled for 120,000 cycles at a rate of 30 cycles per minute.

For chairs with backrest width greater than 16 inches the chair was cycled for 80,000 cycles by applying the load at the horizontal center of the backrest and then 20,000 cycles each at the right and left of the centerline at a rate of 10 to 30 cycles per minute.

Equipment:
Test Machine # Lab-03
Carpenter Square NCC # 003
Measuring Tape NCC # 241
CMD NCC # 122
Timer NCC # 009
Test Weights

Results:
There was no loss of serviceability.

2.11 Section 15 Backrest Durability Test Cyclic – Type II & III (Test Method 013 Revision 1)

Procedure:
The chair was restrained in position, all adjustable features were set to normal use conditions and a load of 240 lbs is placed on the center of the seat.

A form fitting device was attached to the back at 16 inches above the seat. A cycling device with a load of **75 lbs** was applied to the backrest, through the form-fitting device, at 90^0 to the plane of the backrest at its backstop **unlocked** position.

For chairs with backrest width less than 16 inches the chair was cycled for 120,000 cycles at a rate of 30 cycles per minute.

For chairs with backrest width greater than 16 inches the chair was cycled for 80,000 cycles by applying the load at the horizontal center of the backrest and then 20,000 cycles each at the right and left of the centerline at a rate of 10 to 30 cycles per minute.

Equipment:
Test Machine # Lab-10
Carpenter Square NCC # 003
Measuring Tape NCC # 241
CMD NCC # 122
Timer NCC # 009
Test Weights

Results:
There was no loss of serviceability

2.12 Section 16 Caster/Chair Base Durability Test – Cyclic (Test Method 014 Revision 1)

Procedure:
The chair with casters is attached to a cycling device with a load of **270 lbs** applied to the base while allowing freedom to rotate and swivel.

The stroke of travel in the forward and rearward directions is minimum 30 inches and the chair cycles at a rate of 10 $\pm$ 2 cycles per minute for 100,000 cycles. The first 2,000 cycles were performed over obstacles that are described in the test method.

Upon completion of the test, a 5 lbf is applied to each caster in line with the caster stem centerline.

Equipment:
Test Machine # Lab-09

Obstacles
Test Weights
Timer NCC # 009
Caster Weight NCC # 81

Results:
The casters did not separate from the chair after application of **5 lbf** and function normally.

2.13 Section 20 Arm Durability Test – Cyclic (Test Method 017 Revision 1)

Procedure:
The chair and seat were restrained from rotational movement inside the test machine. The height and width of the adjustable arms were set at their apparent weakest position. A load of 90 lbf was applied simultaneously to each armrest initially at 10 degrees angle ± 1 degree using an arm loading device. The cycling device was set at a rate of between 10 and 30 cycles per minute for 60,000 cycles.

Equipment:
Test Machine # Lab-06
Test Weights up to 180 lbs
Arm Durability fixtures
Protractor NCC # 064
Measuring Tape NCC # 241
Timer NCC # 009

Results:
There was no loss of serviceability and no structural breakage to the chair.

2.14 Section 21 Out Stop Tests for Chairs with Manually Adjustable Seat Depth (Test Method 018 Revision 1)

Procedure:
The chair was restrained in test position. A cable was attached to the seat through a weight holder that a load of 163 lbs was placed on. The opposite end of the cable extended in line forward from the seat and in line with the plane of the seat movement to a pulley and then downward to an attached weight of 55 lbs.

The seat was then placed in its most rearward position and restrained. The seat with the hanging weight was held at it most rearward position, and then released using a cycling device, permitting it to move forward rapidly and impact the out stop. The cycling device was set to 25 cycles.

Equipment:
Test Machine # Lab-05
Test Weights
Timer NCC # 009

Results:
There was no loss of serviceability and no structural breakage to the chair.

2.15 Annex C Base Test – Static (Test Method 022 Revision 1)

Procedure:
The base was placed inside the test machine with each leg supported by a caster stem and the entire base was placed on blocks to allow the legs to move laterally and the centre column to move vertically as the force was applied. The column did not touch the test platform during testing.

A load of **2500 lbf** was applied and maintained vertically to the centre column for 1 minute. The load was removed and a second load of **2500 lbf** was applied and maintained for one additional minute.

Equipment:
Test Machine # Lab-01
Load cell NCC # 210
Timer NCC # 009
Vertical Support Columns (refer to Form # 4.007)
Steel Blocks for supporting the base
Caster stems

Results:
There was no sudden and major change in structural integrity.

End of Test Report